A GEOLOGICAL REPORT ON THE RON GROUPS NOS. 1, 2, & 3

139°19' → 139°~~38~~'W, 63°54'N

ELDORADO CREEK

CLAIM SHEET 115-0-14

This report ... Geolog... the ... ed ... 8000.00

B. R. BAXTER
Supervising Mining Recorder
Commissioner ... Territory

May 23rd, 1978
(Revised)

G. J. McGinn, P.Eng.

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INTRODUCTION

The prospecting venture was undertaken in order to locate lode gold prospects in the Klondike District of the Yukon Territory. This grassroots exploration program was financed partially by interests in the program through syndicate contracts to various financers, and partially by G. J. McGinn and R. Sevigny, who took the unsold portion of the syndicate financing issue as part of their remuneration for wages and equipment rental.

Exclusive of office time, financing, and reporting, the program fully occupied the writer for some 79 days.

Field work commenced on June 20th, 1977, with a district reconnaissance program. Bloom's Heavy Metal Test was used to test selected soil samples, and was based on the premise that any hydrothermal deposit was likely to contain sufficient zinc to produce a zinc anomaly in adjoining or overlying soils. These tests were not encouraging. This work was accompanied by a reconnaissance geologic program of the district which was aimed at attempting to gain sufficient geologic, tectonic and mineralogic information on the Klondike family of deposits so as to be able to propose a new ore-genetic model of the Klondike district. This study indicated (see general geology) that originally gold was emplaced in the district by northwest trending faults. This indication, coupled with the extraordinary richness and coarseness of the original Eldorado Creek placer deposits, led to the staking of the Ron Group of claims along the Eldorado Creek fault and along the extension of the Bonanza Creek lineament during early July, 1977.

A full-time work program was started on the 40 Ron Quartz claims immediately after staking, which lasted to the end of the season. This program consisted of an assaying program, an intensive prospecting program, geochemical trials, magnetometer trials, spectrometer trials and microscopic examinations, and was designed to; a) Refine and perfect an ore genetic - geochemical - geological model of the district; b) To find an effective means of exploring the Ron property. This program included off-hours visits to other properties in the district to inspect geology and to purchase samples with the view to finding ore parameters (see Placer Gold Source) common to all members of this family of deposits.

LOCATION AND ACCESS

The Klondike district may be reached by an all-weather road (Highway No. 2) which begins at the Alcan Highway just west of Whitehorse, Y.T., and leads in a northerly direction until it joins the Klondike Highway, which in turn leads in a westerly direction to Dawson City, Y.T.

Eldorado Creek lies some 25 miles south-southeast of Dawson City, and may be reached by an all-weather gravelled road leading up Bonanza Creek to the former site of the town of Grand Forks. A passable secondary road leads up Eldorado Creek to within two miles of its uppermost limits.

TOPOGRAPHY

The Klondike region is an upland that forms part of the Yukon Plateau. The plateau has been deeply dissected by streams and rivers and has a relief of approximately 1500 feet.

The Klondike district has not been glaciated; the rocks have been deeply weathered and the surface is generally mantled by decomposed bedrock. Bedrock is exposed occasionally on ridges, and has been exposed frequently in the valleys by trenching, pitting, and placer mining.

Permafrost to various depths is common throughout the district.

HISTORY

The Klondike district has a history dating back to the famed goldrush (stampede) of 1897-98. The reader is referred to Pierre Burton's recent book "Klondike" for background information on this momentous event.

The district developed an early and sustained reputation for being unpredictable. Eventually, it became clear that relatively few creeks (or parts of creeks) were rich, while the vast majority of the small watercourses contained little or no gold. Moreover, the pay zone of rich creeks tended to vary widely from claim to claim in both the coarseness and the quantity of gold per lineal foot of stream channel. This ore habit was noted to be in direct contrast to most gold placer deposits, which tend to be rich and coarse near the upper reaches of the pay zone and to become progressively poorer and finer downstream.

Eldorado and Bonanza Creeks have the reputation of being, mile for mile, the richest gold placer creeks ever discovered. However, accurate production statistics are not available.

Eldorado Creek gravels were originally mined by underground methods. Subsequently, the lower part of the creek was dredged, and, still later, the upper part was re-mined with earth moving equipment. Today, small operators are again re-mining portions of the creek with earth moving equipment. The creek is completely covered by placer claims, and, in the past few years, parts of the creek have been overstaked by quartz claims. Little work and no diamond drilling has been reported on any of these quartz claims, which were, for the most part, allowed to lapse quickly. However, a recent attempt (1973) was made to churn drill the stream bed of lower Eldorado Creek ("false bedrock") and into buried placers reported on (pp.36-37, The Western Miner & Oil Review, July 1955) by A. Baird (see Appendix I), who published a section drawn by Dr. A. T. Hayden of a shaft sunk to a depth of 221 feet in 1902 (J. B. Tyrell, Eng. & Min. J., 75, (5), Jan. p.188). The section shows two more gravel pay zones below the "false bedrock". According to Baird, the shaft struck artesian water at 221 feet and was lost due to flooding. In the recent work (1974), three churn drill holes were drilled by W. Janner (pers. com.). The first hole was lost at 23 feet, the second at 65 feet, and the third at 41 feet. He states that the second hole stuck in wood at 65 feet (some 50 feet below "bedrock"), and, upon loosening the tool, pieces of wood floated to the surface. Janner considered that churn drilling was not practical for this drilling because surface water tended to flow down the outside of the well casing and flood the drill hole, and thus eliminate meaningful sampling via bailing. He suggested that future trials should employ a rotary drill.

GENERAL GEOLOGY

I) BEDROCK GEOLOGY

The Klondike gold fields are underlain in part by the Nasina Series and in part by the Klondike Series.

The Nasina Series consists of a structurally complex meta-sedimentary series consisting of dark grey rocks that grade from quartzites through micaceous quartzites to quartz mica schist. Occasionally, these rocks are intermingled with green chlorite schists, locally graphitic, and bands of crystalline limestones, phyllite, and shale.

The Klondike meta-sedimentary series consists principally of schists ranging from white to light grey and green; where chloritic they are medium to dark green. The series is described as sericite schist, but all gradations exist from hard flaggy, quartzitic varieties to very soft, strongly sheared, sericitic types.

Both the Nasina Series and the Klondike Series are cut by numerous barren quartz veins. Both series have been repeatedly intruded by large masses of foliated granite.

Here and there, tertiary sediments composed of shale, arkose, sandstone, tuffaceous sandstone and agglomerates to conglomerates overlie the sandstone.

Other rocks in the area include diabase dikes and occasional serpentinized ultrabasic rocks.

Placer gold deposits have been found in streams underlain by both the Nasina and the Klondike Series.

II) STRUCTURAL GEOLOGY

The Tintina Trench is the topographic expression of a huge dextral northwest trending fault with a net horizontal throw of some 250 miles. The movement commenced in Paleozoic time and continued into tertiary time with some 32 miles of throw during that era.

In the district southwest of the Trench there are numerous major faults and structurally controlled lineaments (see fig.1, courtesy of M. W. Milner, 1975) striking sub-parallel to parallel to the Tintina Trench. The writer was able to check a number of Milner's lineaments, as well as a number of other apparent lineaments. Evidence in the form of fracturing, brecciation and fault gouge indicated that these were also faults. These structures have traceable strike lengths of from five to fifty miles.

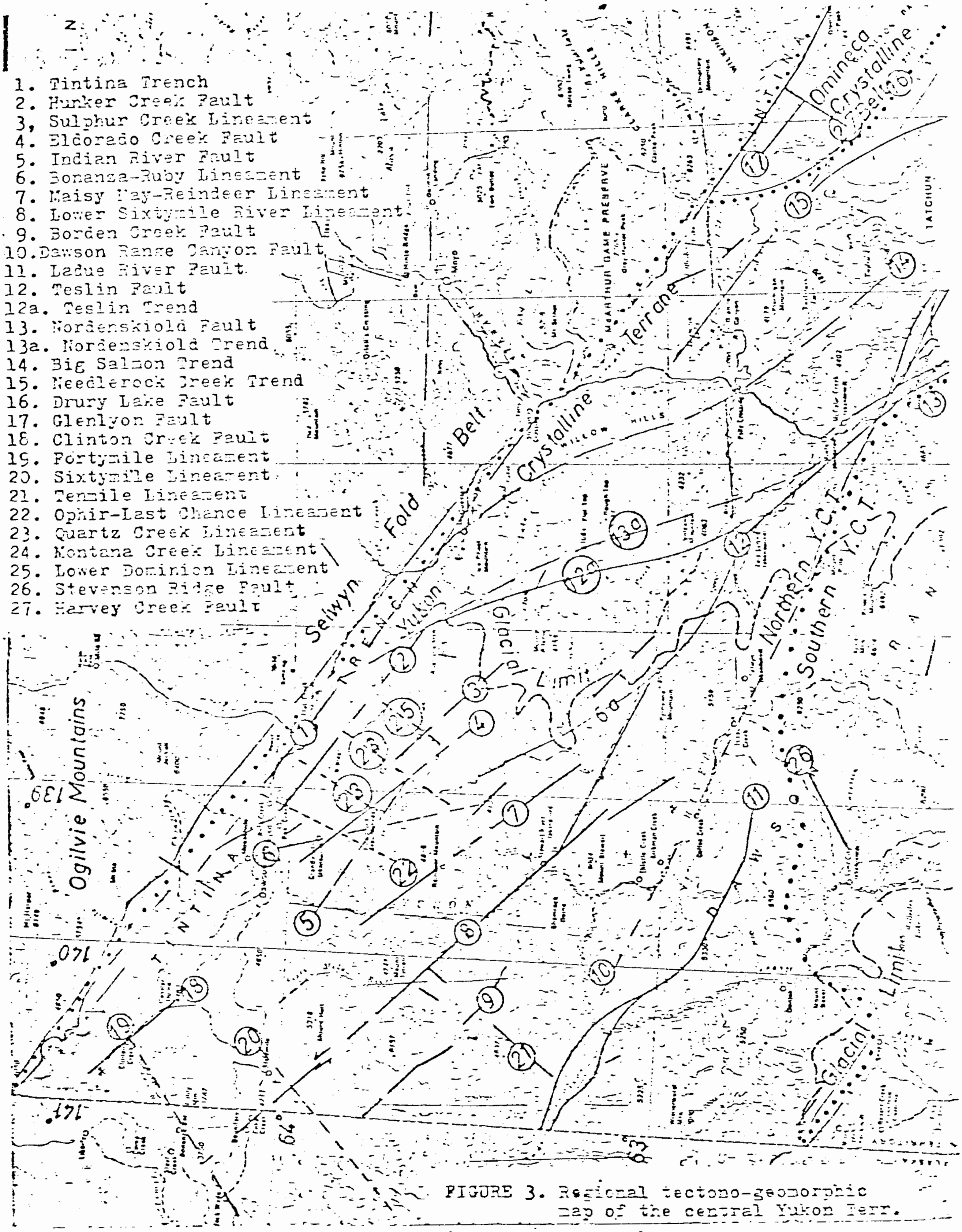


FIGURE 3. Regional tectono-geomorphic map of the central Yukon Terr.

Figure 1.
Courtesy M.W. Milner

Not all of the northwestern trending structures are known to have developed profitable gold placer deposits, but the converse is true. All of the really profitable creeks either; a) Follow a fault for part or all of their course, or; b) Are profitable below the point at which they cross such a structure. These include the following;

1) Eldorado Creek with its coincident Eldorado Creek Fault underlying the most prolific claims.

2) Hunker Creek with its Hunker Creek Fault.

3) Sulphur Creek with its Sulphur Creek lineament.

4) Upper Dominion Creek with its northwestern linearity throughout its productive zone.

5) Bonanza Creek with its Bonanza Creek lineament on lower Bonanza and the Victoria Gulch shear zone crossing upper Bonanza at McKay Gulch.

6) Adams Creek crossing the Eldorado Creek fault.

7) All Gold Creek crossing the Hunker Creek fault.

8) Quartz Creek crossing the Eldorado Creek fault extension.

9) Henderson Creek crossing the huge Maisy May - Reindeer Creek lineament.

10) Miller, Glacier and Little Gold Creeks on line with the lengthy Lower Sixty Mile River Fault.

11) Bear Creek with its own short lineament and accompanying breccia and gouge.

12) Clear Creek with its 5 miles lineament which is proving so productive in recent years.

13) Gold Run Creek with its northwest lineament.

14) Indian River with its Indian River Fault.

Many more minor placer showings could be explained if one takes into account that all of the major structures are almost certainly accompanied by minor parallel faults, cross faults, and fracture and joint systems.

It appears extremely likely that this system of faults has acted as mineralizing hydrothermal plumbing system for the whole district.

It has long been known (McConnell, 1903) that a section of the Klondike River and the area immediately south of it, including Bonanza Creek and Lower Hunker Creek, was "uplifted" some 50,000 years ago. This "uplift" caused rapid downcutting of the respective stream channels and resulted in isolating parts of the old stream channel (the famous White Channel) as benches as high as 150' - 300' above the present channel. A new structural interpretation was made possible when Gleeson (1970, P.9) reported a thrust fault on the left limit (Adams Hill) of Bonanza Creek striking N 35°E and dipping 20° northwest with 30' to 40' of movement, and a similar thrust fault on the left limit (Paradise Hill) of Hunker Creek. This new information was augmented by Milner (1975, P.13) when he reported on a series of narrow bands of Nasina Series phyllite in Klondike schists on lower Bonanza Creek, which he suggests are "fault slices". Since thrust faults are normally repetitive, it would appear that the explanation of the local "uplift" is that it was due to crustal thickening as a result of repeated thrust faulting.

If the above conclusion is correct, then it would indicate that since thrust faulting caused the rapid elevation of the White Channel and subsequent rapid downcutting in lower Bonanza Creek, immediately above the last of the elevated bench gravels and above the zone of thrust faulting (i.e. in lower Eldorado Creek), there should have been a period of infilling while a deeper channel was being cut in Bonanza Creek. Using this concept as a working model, it would not be surprising if the 1902 shaft (Baird 1955) sunk in this locale did indeed intersect buried placers as reported by Dr. Hayden (see Appendix I).

III) PLACER GOLD SOURCE

The source of Klondike placer gold has remained undiscovered despite persistent exploration efforts over the past 80 years. Most attempts to find lode gold, over the years, have been to look for mineralized quartz veins. The reason for this is obvious, because many of the creeks carry an abundance of vuggy, coarsely crystalline, fractured and often iron stained quartz sand, quartz pebbles, and quartz boulders. 20% to 30% of the Eldorado gravel is quartz. The percentage is higher in Bonanza Creek, where it probably averages 30% to 40% and increases locally to as high as 80% to 90%. There are, however, several objections to assuming that the placer gold was derived from quartz. These are as follows;

1) The quantity of quartz in a given stream seems to bear no relationship to the amount of gold in that stream. As an example, Quartz Creek, as the name implies, has an immense amount of alluvial quartz in its valley. Estimates could go as high as hundreds of millions of tons, yet the gravels of this stream were very poor in gold above the point where it crossed the extension of the Eldorado Creek fault. On the other hand, Clear Creek, with considerably less than 1% quartz in its gravels, was a rich creek.

2) It is virtually impossible to find visible free gold in creek boulders. The writer personally broke thousands of such boulders during the field season and examined all of them with a lens, and many were re-examined with a microscope, without finding so much as a fleck of free gold. Moreover, in checking with a number of miners in the district, this absence of gold in quartz boulders is apparently universal.

3) The record for quartz veins is scarcely better. While occasional individual assays have been obtained from district veins, it is seemingly never possible to repeat such assays with check samples, and this suggests assaying errors, sample contamination (from eluvial or alluvial gold), or both.

If, as indicated above, the placer gold is not directly related to quartz, and is related to the district fault structures, exactly what does one look for when seeking lode gold? To answer this question, the author began a lengthy study of placer gold itself. Using a Leitz 200X stereoscopic microscope, a considerable number of nuggets, as well as coarse gold and fine gold from various creeks, were examined. Further information was obtained from published literature.

The most common form of nugget is an irregular shape, sometimes travel worn, showing rounded protuberances similar to botryoidal structure. Practically all nuggets carry a nucleous or nuclei of alien material within them. Materials observed include quartz, geothite, limonite, black chert, rose quartz, and mica schist. In addition, nuggets were examined in which the nucleous was an unconsolidated blue mud, thought to be fault gouge. More rarely, octahedral crystals of gold have been reported (P. Monfette, 1977; D. Johnson, 1975), and, still more rarely, wire gold has been reported. Occasionally, all of these types may be stained, and, in some cases, heavily encrusted with limonite. Nuggets from Clear Creek, where quartz is scarce, tend to be pancake shaped and to have nuclei composed of schist. In most creeks, the nuclei of nuggets is predominantly quartz. In a few cases, the form of the quartz nucleous is angular or (more frequently) subangular. In some nuggets the nucleous is a rounded pebble, or, even more distinctively, several rounded pebbles held together by gold.

A second important type of particles is in the form of flakes, having a diameter to thickness ratio of approximately 10:1. They do not have a nucleous, and are seldom larger than 3/8" in diameter, although occasionally much larger. The surface of these particles is occasionally laminated and often hackly, and does not suggest that the particles acquired their shape by hammering.

The coarse fraction (2 - 5mm) of concentrates carries both flakes and nuggets in a recognizable form. The fine fraction (-2mm) contains 10% - 30% of recognizable particles, with the remainder being detrital particles. The relative proportions of the two types of particles tend to vary from one creek to another. Dominion Creek gold is principally flakes, while other creeks tend to produce principally nugget forms.

The fineness ratio ($\frac{Au}{Au + Ag}$) of Klondike placer gold is fairly uniform and varies from 0.7 to 0.85. In a given creek this variation is much less, and is generally within ±3% of the mean average.

Nuggets carrying detrital sand particles, as well as those carrying rounded pebbles, have caused many workers to suggest that nugget growth must have occurred in the streams, and they suggested that small gold particles had agglomerated in the gravels. Others pointed to delicate wire gold samples and octahedral crystal forms as proof that nuggets were the result of chemical solutional deposition. Recently, Mustart (1965) and Milner (1975) have shown that nuggets, when examined in polished section, have an internal crystalline structure which is continuous to the weathered margins, thus proving that ordinary nuggets are the result of chemical deposition. This evidence appears to be irrefutable, and may be extended to the smaller particles and flakes, since a common fineness ratio in any given locale almost rules out more than one population of gold particles, despite their diversity of form. Moreover, there is evidence that flakes are the result of the chemical deposition of gold in schist. Gleeson (1970, P.50) reported that gold from Victoria Gulch shear zone is "fine grained, yellow, flaky and commonly occurs attached to or intergrown with the sericite grains". Similarly, Eldorado Creek miners E. Gilmer and E. Vandehey reported that although Eldorado gravels tend to yield nugget type particles, ripping and sluicing schist bedrock yielded flake type particles. Here, as elsewhere, gold yields from bedrock ripping ceased after the first few feet had been removed.

The writer regards it to be a proven fact that there is one population of placer gold particles in any given creek and that these particles were originally deposited by chemical solutional means. However, the writer most emphatically disagrees with those workers who have concluded that this proves that the gold particles are primary gold particles that have been released from primary hydrothermal gold deposits by the physical erosion of such deposits. It has long been known that bio-chemical weathering processes can generate solutions capable of leaching ore minerals from a weathered zone and of transporting and redepositing them in a secondary enrighment zone, although usually in a different mineralogical form. This process is believed to occur as a result of the consumption of sulphides by anerobic sulphur oxidizing bacteria in which sulphuric acid is produced. The acid combines with ground water and dissolves the minerals. Ordinarily, these waters descend until they encounter the water table, where precipitation of the metallic ions occurs.

It is clear that the above simple and direct remobilization of many ore minerals would not be practical for gold transport because of solubility problems. Gold is not soluble, even in concentrated sulphuric acid. However, according to Bateman, 1940 (P. 278, Economic Mineral Deposits, 2nd edition), "Gold may be dissolved by ferric sulphate in the presence of H_2SO_4, $NaCl$ and MnO_2. If the ferric sulphate is reduced to ferrous sulphate, the gold can no longer be maintained in solution and is deposited." Bateman makes it clear that all of these compounds are commonly found in supergene enrichment zones. He also states that he knew of no deposit where a secondary enrichment zone was also enriched in gold. The phrasing of his statement makes it clear that the solubility of his gold transporting solution is not dependent on a low pH, as it clearly is with other mineral carrying solutions, but rather on the form of iron sulphate.

Babor & Lehrman, 1940 (P.469, General College Chemistry, 2nd edition) state that ferric sulphate is reduced by hydrogen sulphide. They also state (P.362) that H_2S is produced by rotting organic material. From the above considerations, it may be seen that a gold solution created as a result of the bio-chemical weathering of mineralized fault zones at high altitude would, in all probability, flow through the sometimes permeable fault zones, and re-emerge as springs (pingos) in the fault controlled creeks. Such artesian spring waters would probably mingle with the creek waters and continue to carry gold until deposition was caused by encountering a source of hydrogen sulphide. Buried concentrations of organic material, which would generate hydrogen sulphide, are most likely to be present along the course of placer rivers and creeks at the mouths of minor streams (gulches) flowing directly from organic-rich localities.

It is a well known fact that in the rich placer streams throughout the Klondike district, placer gold tended to be concentrated at the mouths of gulches, whether or not the gulches were productive. As recently as 1976 and 1977, this phenomenon was continuing to baffle miners. For instance, a small northeasterly flowing gulch joins Eldorado Creek at the lower end of placer claim 28. The lower portion of this claim and the adjoining downstream claim were among the richest placer claims ever mined. Despite the obvious connection with the streamlet, the gulch sediments are barren. Similarly, on the same creek, miner D. Johnson prospered, during recent years, rewashing gravels below, and up to the mouth of Gay Gulch on a claim made famous in 1907 by the discovery of an 85 ounce nugget. Johnson tested the gulch extensively and found it to be barren. Accordingly, he proceeded beyong the mouth of the gulch, where he was distressed to find that the gold values were so reduced that he was forced to cease operations.

The geologic-geochemical model which appears to fit the Klondike district is as follows;

1) Gold was introduced into the district through the mineralization of the extensive northwest shears.

2) Gold was removed from the weathered zone as a result of bio-chemical weathering, and transported in a ferric sulphate solution through the fault system, and re-emerged at lower altitudes in the fault controlled streams.

3) The gold was deposited on stream detritus and in the bedrock immediately below the stream as a result of the conversion of ferric sulphate to ferrous sulphate by organically produced hydrogen sulphide in the reaction

$$Fe_2(SO_4)_3 + 4\ H_2S \rightarrow 2\ Fe_2SO_4 + 5\ S + 4\ H_2O$$

The poor distribution of the placer gold, the high proportion of little-travelled particles, together with the impregnation of the stream beds with flake gold, indicate that the placer deposits are youthful and are definitely not the sum result of repeated reworkings of older deposits, involving the progressive weathering of huge volumes of rock. Rather, the placer deposits are the end result of a highly inefficient system in which all of the gold not precipitated within the stream, and most of the flour gold, and a substantial proportion of the fine gold, were carried away downstream. The inefficiency of this system, together with the limited time span and the limited volume of available faulted rock, when considered jointly with the phenomenal richness of the placer deposits, suggests (but does not prove) that the parent deposit might be exceptionally rich. The ubiquitous iron oxides released by the bio-chemical weathering process suggest that the primary deposits are likely to contain auriferous sulphides, although tellurides and native metals are not ruled out.

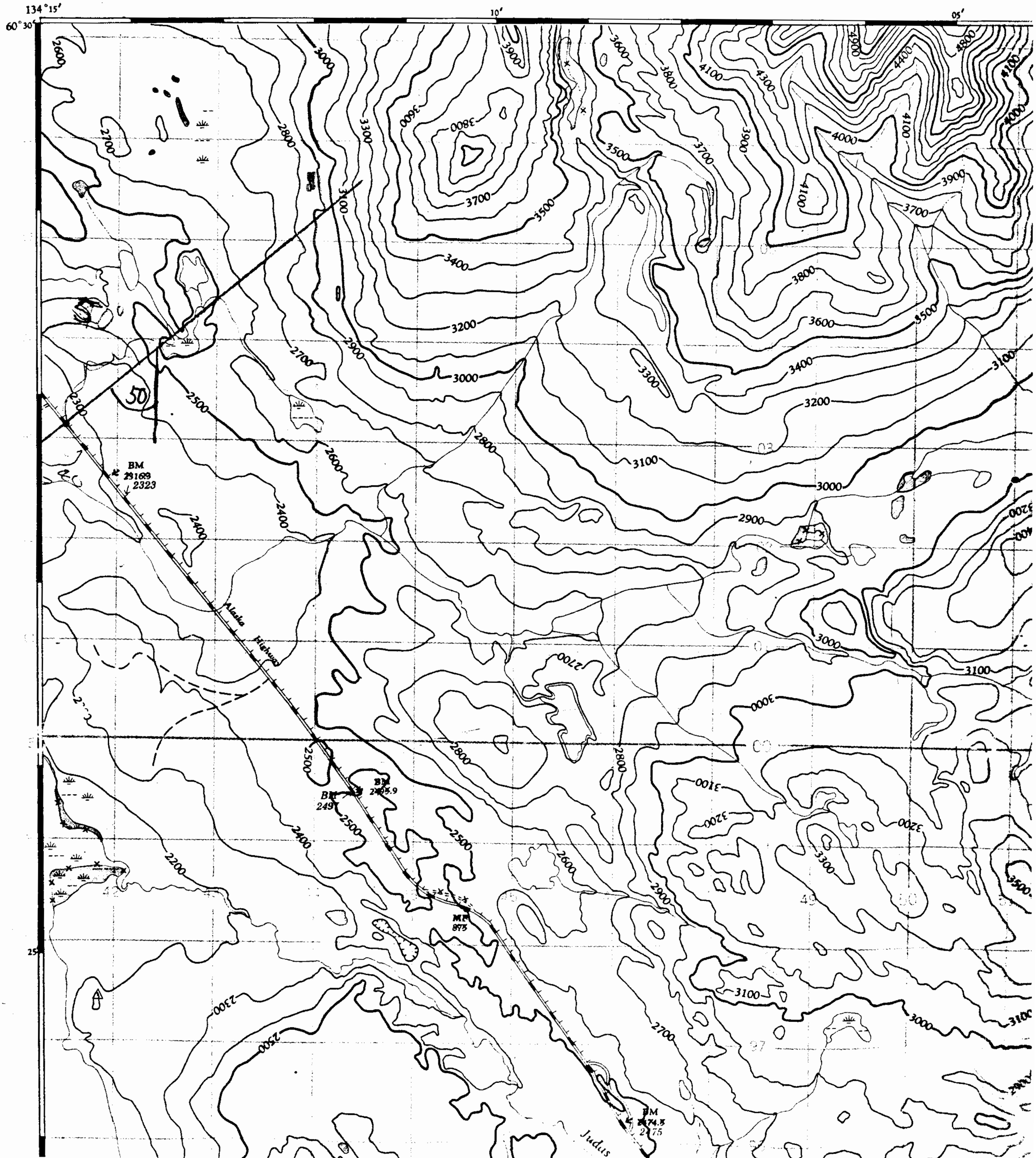
LOCAL GEOLOGY

The Ron group of claims is underlain by the Klondike Meta-sedimentary Series which includes cat's eye

NATIONAL TOPOGRAPHIC SERIES 1:50,000

TAGISH

EDITION 2
~~FIRST EDITION~~



schist, sericite schist, chlorite, graphitic schist, and quartzite.

The bedrock is sliced by the Eldorado Creek fault which strikes at 136° and dips to the southwest at 60°. This fault is intersected on the Ron claims by the Bonanza Creek lineament which strikes at 173°.

The economic surficial geology of this property, together with its ore genesis, is discussed above under the heading Placer Gold Source.

GEOPHYSICS AND GEOCHEMISTRY AND ASSAYING

Limited prospecting was done using a spectrometer, but was abandoned quickly because of negative results.

A number of assays were done on various rock types and sub types including oxides (goethite and limonite) and sulphides (marcasite and galena) in attempts to isolate auriferous rock types. Due to the paucity of outcrop, these trials were done on loose stream detritus and sample site locations were not recorded. With the exception of those samples carrying visible galena and hence returning low silver values, the samples (see Appendix II) returned traces of gold. The diversity of rock types in which these traces of gold were found indicates that the stream detritus has been contaminated with geochemically mobile gold.

Geochemical trials were carried out on the Ron claims using Bloom's Heavy Metal Test. These trials consisted of a series of lines (see profiles in Appendix III) designed to test the feasibility of using geochemistry as an exploration tool on this property. Most of these tests were done on the slopes immediately west of Eldorado Creek. These trials were discouraging, firstly because the slopes' overburden is largely frozen organic material or gravels, both of which are unsuitable for soil testing. Secondly, even where anomalous results were obtained, they could not be repeated on nearby sample sites, thus indicating local contamination due to oxidized metal scrap which litters the slopes. As a result of these prospecting trials, geochemical methods are not recommended on this property.

The geochemical trials were accompanied by magnetometer trials using a McPhar M 700 instrument. Sufficient lines were run over the Bonanza Creek lineament and the Eldorado Creek fault to indicate that the faults were non-magnetic and that the magnetic background was fairly uniform. These tests did not preclude the use of the magnetometer, but did indicate that its role in lode exploration on this property would be secondary. The most useful information obtained from the magnetometer trials was that zones overlain by thick gravel deposits tended to be reflected by a reduction in magnetic response and thus suggesting a method of locating buried channels by mapping negative magnetic anomalies.

CONCLUSIONS

1. The writer concluded that the Eldorado Creek gold was originally introduced onto the property by a northwest trending fault by hydrothermal processes.

2. Gold was leached from the fault and associated fractures and subsequently redeposited in the gravels and bedrocks of the creek as secondary placer gold.

3. There should be primary lode gold deposits in the fault zone below the weathered zone (i.e. at 200 feet or more below the surface).

4. There are probably buried gold placers underlying lower Eldorado Creek.

RECOMMENDATIONS

An adequate preliminary exploration program of the staked portion of the Eldorado Creek fault for primary ore below the weathered zone will require a series of holes approximately 500 feet deep to test; a) The intersection of the Eldorado Creek fault with the Bonanza Creek lineament; b) Various sub-types of Yukon schist, including quartzite, chlorite schist, cat's eye schist, and graphitic schist at points where they have been sheared by the fault; c) Any indications of sulphide mineralization obtained by the preliminary electro-magnetic survey.

It is recommended;

1) That a baseline and crosslines be cut and surveyed at 400 foot intervals on all quartz claims;

2) That the grid be surveyed using vertical-loop electro-magnetic equipment;

3) That a contract for 3000 feet of BQ diamond drilling be let to drill a series of holes through the Eldorado fault below the weathered zone;

4) That a contract should be let for 800 feet of rotary tricone drilling to explore for buried placers on lower Eldorado Creek;

5) That the sum of $130,000.00 should be provided for this work.

G. J. McGinn,
Prof. Eng.

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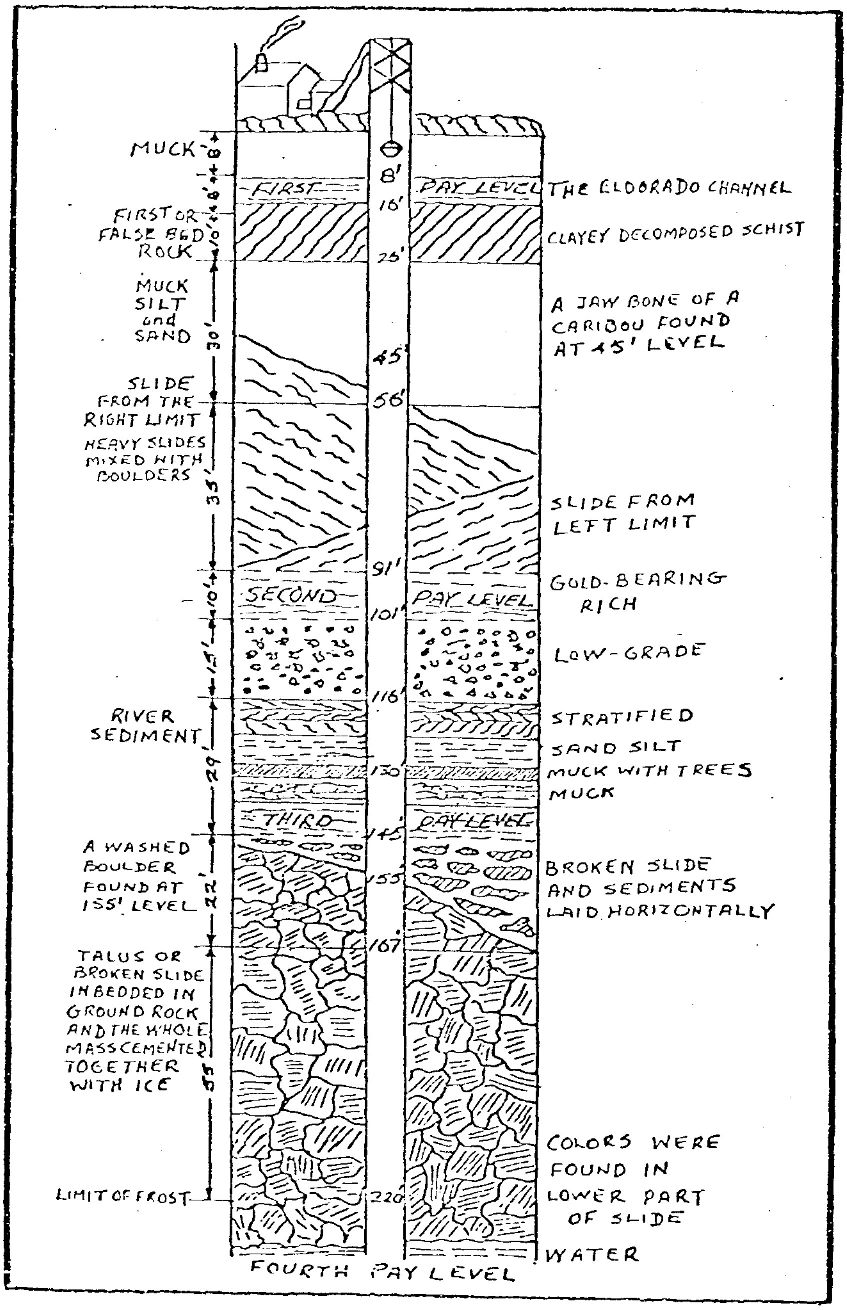
APPENDIX I

Search for a Submerged Channel

By A. Baird

Chief Accountant, The Yukon Consolidated Gold Corp. Ltd.



Cross-section of the ground below Eldorado Creek showing the different formations through which Dr. Hayden's shaft was sunk.

AN interesting episode in the history of placer mining in the Dawson area was the sinking of a deep shaft on Claim No. 3A on Eldorado Creek. The project was inspired by Dr. Asa Thurston Hayden, who had in former years been a professor in the University of Hawaii. He had as a partner a Mr. Thompson, commonly called "Deephole Thompson." Dr. Hayden, in the course of his studies in geology, had learned of the immensely rich deposits of placer gravel in the Clunes and Allendale districts in the State of Victoria, Australia, lying beneath a stratum of basalt varying in depth from two to five hundred feet.

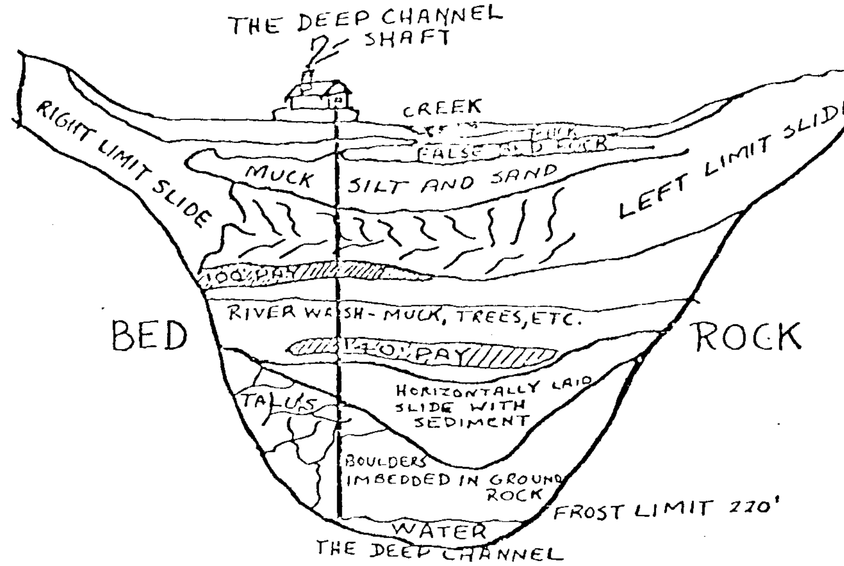
Substantial profits were made from mining these. One company, the "Madam Berry" named for the wife of a premier of the State, with a capital expenditure of 15,875 pounds sterling, disbursed in dividends 885,450 pounds sterling. The major difficulty was the immense flow of water which had to be discharged from the mines, and pumps in those days weren't nearly as efficient as they are today. In the same area there were rich deposits of gravel at a depth varying from twenty to thirty feet, second only in their gold content to the famous gravels at Ballarat and Bendigo.

Dr. Hayden often spoke of these rich deposits of placer gravel lying on what he called a second bedrock and was obsessed with the idea that similar conditions might exist in the Klondike district. He chose No. 3A on Eldorado Creek as the scene of his first experiment because it was the centre of one of our rich placer areas.

He was a highly educated and capable man, well versed in geology and he kept a careful record of the different strata through which the shaft was

e Yukon

Looking up Eldorado Creek where the shaft was put down on 3A claim.



blasted. The character of the different formations is systematically reproduced on the accompanying chart and with his notes make an impressive exhibit. Unfortunately an unmanageable flow of water was struck at a depth of 220 feet and the only result of the hard work of the two prospectors is the interesting record which Dr. Hayden fortunately preserved.

The flow of water was so great that th· ·habitants of Grand Forks, at the ju n of Eldorado and Bonanza, feared that a glacier might form during the winter which would completely engulf the entire town site. In consequence the Government of the Yukon Territory had the shaft capped at an expense approximating $6,000. D. A. Mathieson was in charge of the crew which did the capping.

Dr. Hayden appeared to have implicit faith in a doodlebug which he used to locate the points where he searched for a submerged channel of gold-bearing gravel. His second attempt was on Sulphur Creek where he worked alone sinking a deep shaft until the funds which he could persuade his associates to furnish for the necessary powder and provisions were exhausted. At that point he struck neither a second channel of gravel nor water.

His third attempt was on a creek on the left limit of the Yukon some distance below Dawson. This venture, which was financed by a new group of associates, was also a failure.

Although he was a strong man and a c· ·able workman he had several idiosy· ·ies. For years he never trimmed his hair nor beard. He occasionally told the story of Samson who lost his strength and his unusual endowments when his hair and beard were trimmed. Although he was an almost tireless walker when on a journey he invariably carried a staff in the manner of the patriarchs of old.

Among his many and varied capabilities was an uncommon endowment which enabled him to relieve those who were suffering intense pain. While he was working on Sulphur Creek my daughter when about a month old had for a time a severe attack of colic about 8 p.m. each evening. The pain was so great that she would gather herself in a knot and scream. My wife and I were helpless. Nothing we could do would bring relief. Dr. Hayden heard of our trouble and one evening, when I was walking the floor with the child in my arms, he came. The door was open and he heard her screams. He walked in and without saying a word took her from me, balanced her small body on the palm of his hand and walked around humming a tune. In a few minutes she was asleep and slept peacefully until morning. For two weeks, the duration of the trouble, he came every evening and never failed to relieve the pain and put her to sleep.

His work was eight miles from our operation and he walked sixteen miles every evening to relieve suffering which he alone of all the people on the creek had the power to alleviate.

That is only one of his many acts of helpfulness and we who reaped the benefit from his unusual power think of him in the role of the Good Samaritan rather than that of a prospector searching for a submerged channel of gold-bearing gravel.

Alcan Plant Expansion

THE largest single expansion of primary aluminum capacity in the world is under way in Canada, Nathanael V. Davis, president of Aluminium Limited, parent company of the Aluminum Company of Canada, Limited, testified on May 19th.

Mr. Davis made the statement in testimony prepared for delivery before a United States House of Representatives small business sub-committee investigating the aluminum supply situation.

The present capacity of the new aluminum smelter at Kitimat, British Columbia which went into operation last August, is 91,500 tons. An expansion programme now underway there and expected to be completed in 1959 will bring Kitimat capacity to 330,000 tons, Mr. Davis said.

Eventually Aluminium Limited contemplates expanding Kitimat to 550,000 tons of annual capacity, which is expected to make it the largest aluminum smelter in the world. Mr. Davis noted that the number of independent United States fabricators — those with no smelting facilities of their own — who buy aluminum from Canada, has risen from seven in 1946 to more than one hundred today. Aluminum Limited in 1953 voluntarily began to set aside 110,000 tons of primary metal a year for these fabricators.

Mr. Davis said that aluminum production based on "abundant low cost hydro-electric power, such as is available in Canada, offers the best opportunity for holding the line agaist increases in aluminum prices which would work to the detriment of all aluminum fabricators large and small."

APPENDIX II

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO M3B 2T8 445-5755

Certificate of Analysis

NO. 2125 PAGE 1 of 2

TO. G.J. McGinn
2615 11 Ave. N.W.
CALGARY, Alta.

RECEIVED Sept. 14/77 INVOICE NO. 2125

SAMPLE(S) OF 1 rock SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample	Auoz/ton	Agoz/ton
No Tag	trace	nil

X-RAY ASSAY LABORATORIES LIMITED

DATE Sept. 20/77.

CERTIFIED BY

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO 445-5755

Certificate of Analysis

NO. 2125

TO. G.J. McGinn,
2615 11 Ave. N.W.
CALGARY, Alta.

RECEIVED Sept. 14/77 INVOICE NO. 2125

SAMPLE(S) OF 1 rock SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Element	Sens*	Concentration No Tag	Element	Sens*	Concentration No Tag
Antimony	(4)	ND	Manganese	(1)	T
Arsenic	(4)	ND	Mercury	(4)	ND
Beryllium	(2)	ND	Molybdenum	(3)	FT
Bismuth	(2)	ND	Nickel	(1)	FT
Cadmium	(4)	ND	Silver	(1)	ND
Cerium	(5)	ND	Tantalum	(5)	ND
Columbium	(4)	ND	Thorium	(3)	ND
Chromium	(4)	T	Tin	(2)	ND
Cobalt	(3)	ND	Titanium	(2)	T
Copper	(1)	FT	Tungsten	(4)	ND
Gallium	(2)	FT	Uranium	(3)	ND
Germanium	(1)	ND	Vanadium	(2)	FT
Iron	(2)	M	Yttrium	(3)	ND
Lead	(2)	ND	Zinc	(4)	ND
Lithium	(4)	ND	Zirconium	(4)	ND

LEGEND

Key To Symbols

- H - 10% plus
- MH - 5-15%
- M - 1-10%
- LM - 0.5-5%
- L - 0.1-1%
- TL - 0.05-0.5%
- T - 0.01-0.1%
- FT - 0.01% or less
- ND - Not detected

*Sensitivity (limit of detection)

- 1- 0.0005-0.001%
- 2- 0.001-0.005%
- 3- 0.005- 0.01%
- 4- 0.01 - 0.05%
- 5- 0.05 - 0.1%

Note: Better sensitivities can be obtained with special techniques, if and when required.

X-RAY ASSAY LABORATORIES LIMITED

Sept. 20/77.

DATE

CERTIFIED BY

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD DON MILLS ONTARIO M3B 2T8 445-5755

Certificate of Analysis

NO. 1670 PAGE

TO. G.J. McGINN
528 8th Ave. S.W.
Calgary, Alta.

RECEIVED July 14/77 INVOICE NO. 1670

SAMPLE(S) OF 1 sand SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample	Au oz/ton
No Tag	0.01

X-RAY ASSAY LABORATORIES LIMITED

DATE July 15/77. CERTIFIED BY [signature]

TO

G. S. McGinn

ACME ANALYTICAL LABORATORIES LTD.
Assaying & Trace Analysis
6455 Laurel St., Burnaby, B.C. V5B 3B4
Tel: 299-5242

ANALYSES CERTIFICATE

File No. ______
Type of Samples ______
Disposition ______

No.	Sample		~~Mo~~	~~Cu~~	oz/ton Au	oz/ton Ag	% Zn							No.
01	8213				.001									01
02	8214				.001									02
03	8215				.001									03
04	8216				.001	.05	1.14							04
05	8217				.001									05
06	8218				.001									06
07	8219				.001									07
08														08
09														09
10														10
11														11
12														12
13														13
14														14
15														15
16														16
17														17
18														18
19														19
20														20
21														21
22														22
23														23
24														24
25														25
26														26
27														27
28														28
29														29
30														30
31														31
32														32
33														33
34														34
35														35
36														36
37														37
38														38
39														39
40														40

All results are in parts per million.

DATE SAMPLES RECEIVED 18 July

DATE REPORTS MAILED 28 July

ANALYST [illegible signature]

ACME ANALYTICAL LABORATORIES LTD.
Assaying & Trace Analysis
6455 Laurel Street * Burnaby, B.C. V5B 3B4
Telephone: 299-5242

To

Mr. G. S. McGinn,
Dawson City, Yukon YOB 1GO

File No. 7416
Type of Samples Rocks
Disposition

ASSAY CERTIFICATE

No.	Sample	Ag oz/ton	Au oz/ton						No.
1	8220		.001						1
2	8221		.001						2
3	8222	2.20	.012						3
4	8223		.002						4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18
19									19
20									20

DATE SAMPLES RECEIVED Aug. 2, 1977
DATE REPORTS MAILED Aug. 3, 1977
ASSAYER Dean Toye

DEAN TOYE, B.Sc.
CHIEF CHEMIST
CERTIFIED B.C. ASSAYER

DATE. JULY 18, 1977

FILE NO. 9967- 1

ASSAY CERTIFICATE

WHITEHORSE ASSAY OFFICE LTD.
BOX 4518 WHITEHORSE Y. T.
PHONE 667 2694 Y1A 2R8

SAMPLE RECEIVED FROM MR. G. J. GINN

SAMPLE NO.	GOLD Oz. Per Ton	SILVER Oz. Per Ton						
FAULT GOUGE	TR							

ASSAYER. K. Hoyland for GEO. SPALDING

DATE. AUGUST 5, 1977

FILE NO. 9994- 5

ASSAY CERTIFICATE

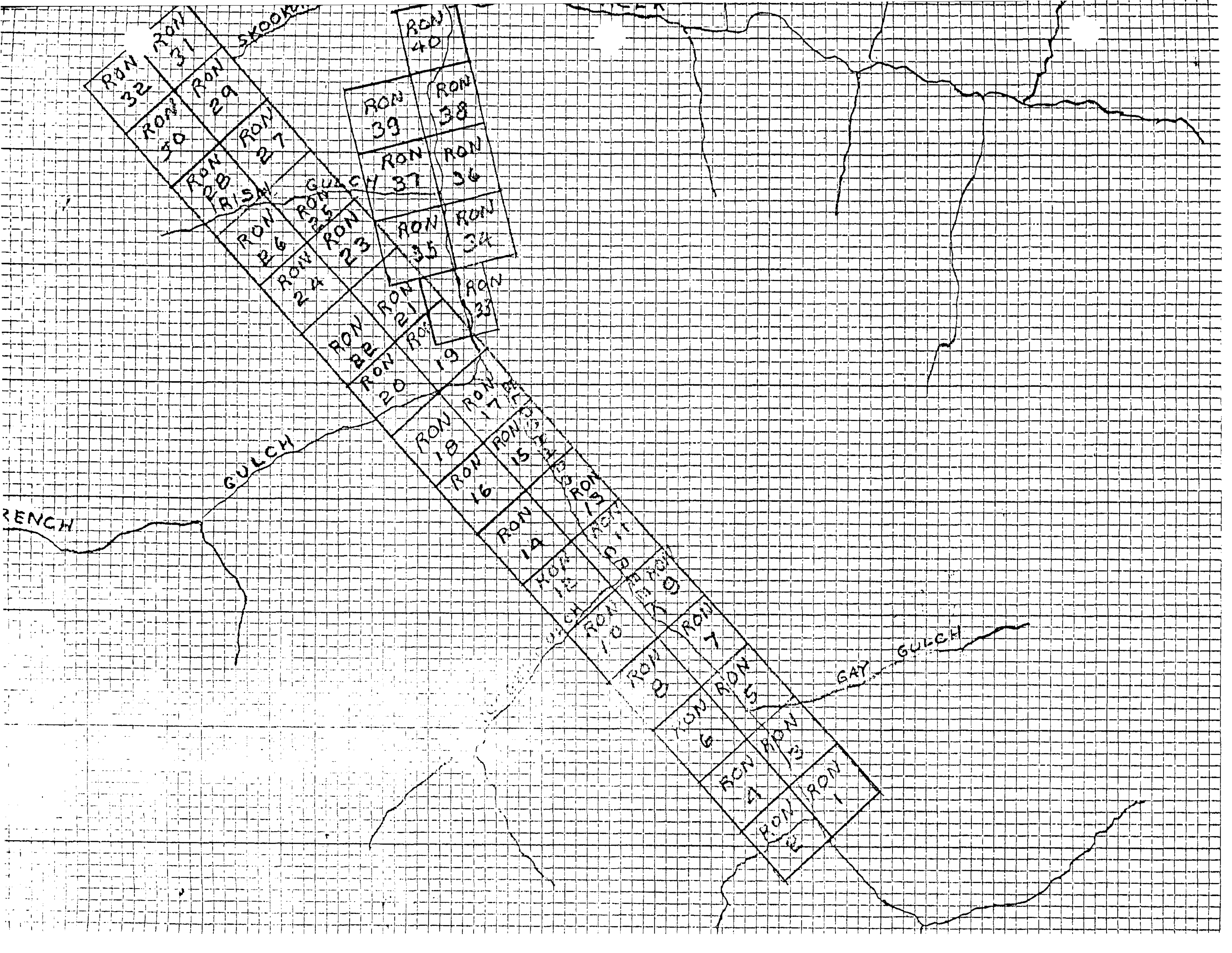
WHITEHORSE ASSAY OFFICE LTD.
BOX 4518 WHITEHORSE Y. T.
PHONE 667 2694 Y1A 2R8

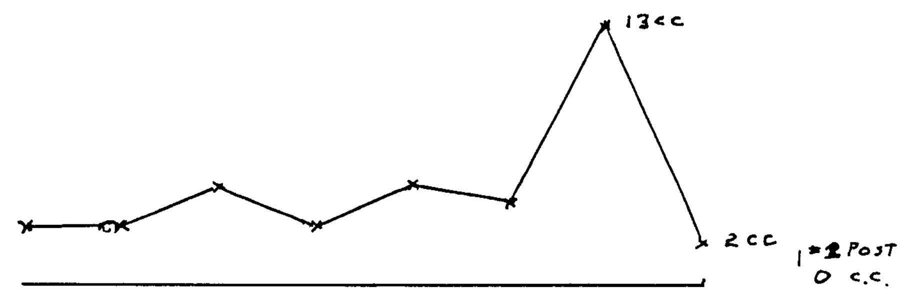
SAMPLE RECEIVED FROM MR. G. J. McGINN

SAMPLE NO.	GOLD Oz. Per Ton	SILVER Oz. Per Ton						
8224	TR							
8225	TR							
8226	.005							
8227	.005							
8228	TR							

ASSAYER. K. Hyland for GEO. SPALDIN

APPENDIX III

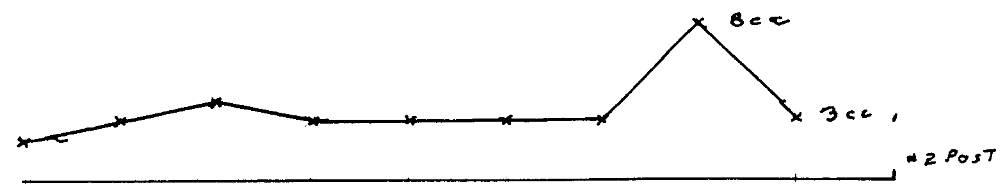

RON 31
RON 32
RON 29
RON 30
RON 27
RON 28
RON 40
RON 39
RON 38
RON 37
RON 36
RON 35
RON 34
RON 33
RON 26
RON 25
RON 23
RON 24
RON 21
RON 22
RON 20
19
RON 17
RON 18
RON 15
RON 16
RON 14
RON 9
RON 10
RON 7
RON 8
RON 5
RON 6
RON 3
RON 4
RON 1
RON 2
GULCH
GULCH
RENCH
GAY GULCH



Trav. Started 100'W of #1 Post on 228°
ON P.C. 31

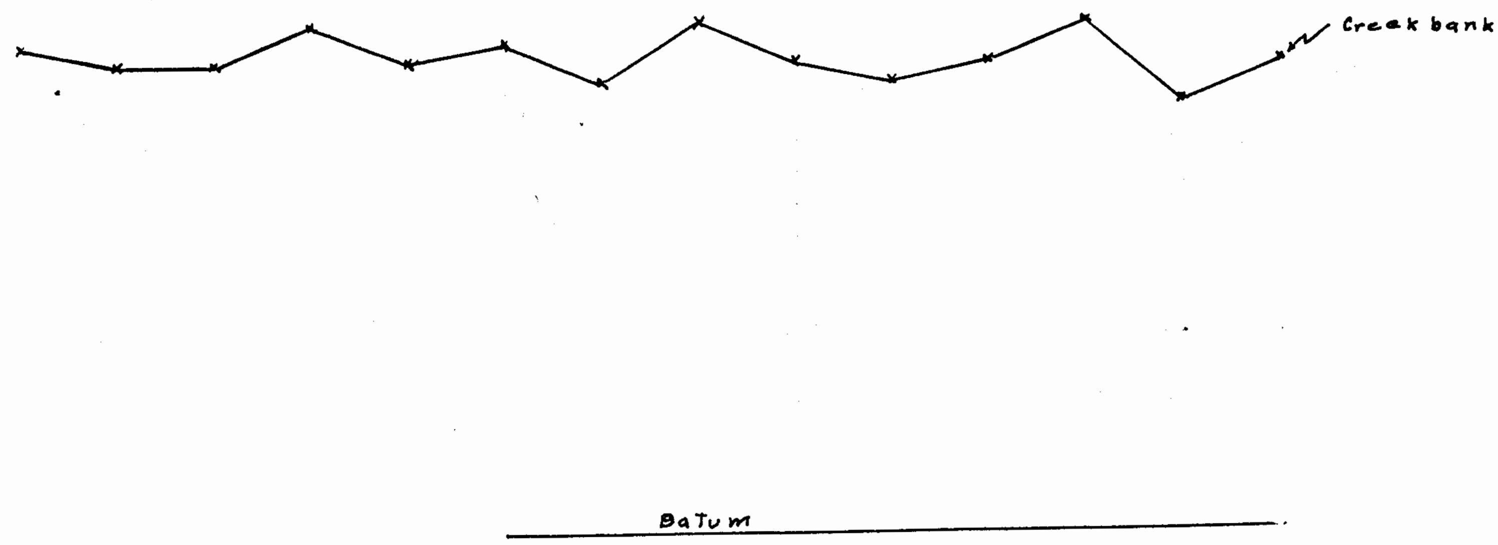
1" = 200'

H.M. Profile



Trav. started 100' W of #2 Post on 228°
ON Placer Claim 31
1" = 200'

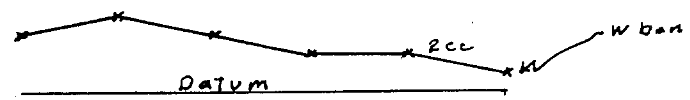
GEOCHEMICAL PROFILE
1" = 10 cc



Trav. started on west bank
in center of P.C. 27 @ 228°
1" = 100'

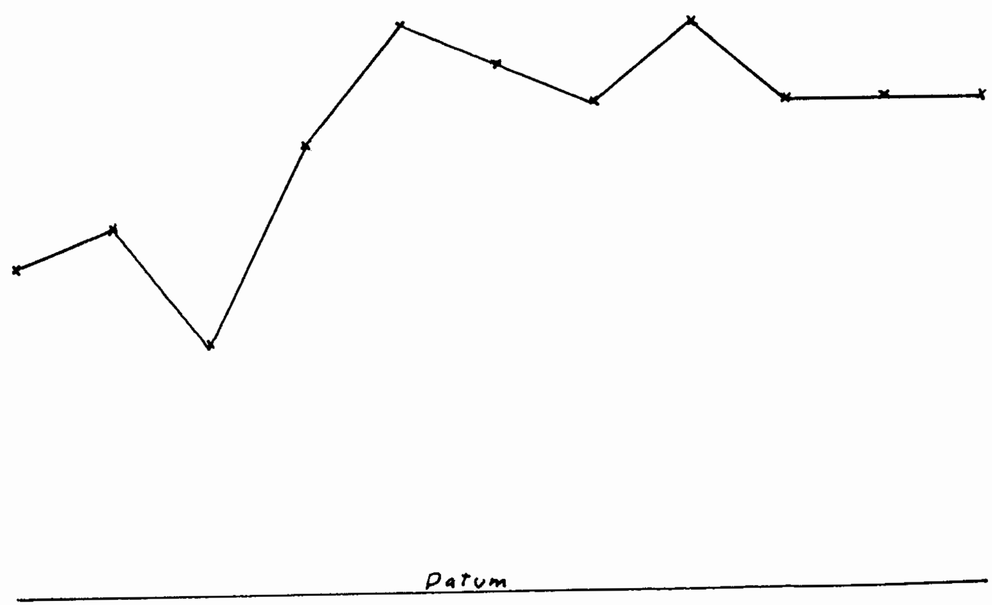
Magnetic Profile

1" = 100 gammas



Trav. started on W bank and
Travelled // to French Gulch
on hill S of gulch
1" = 200'

Geochemical Profile
1" = 10 c.c.

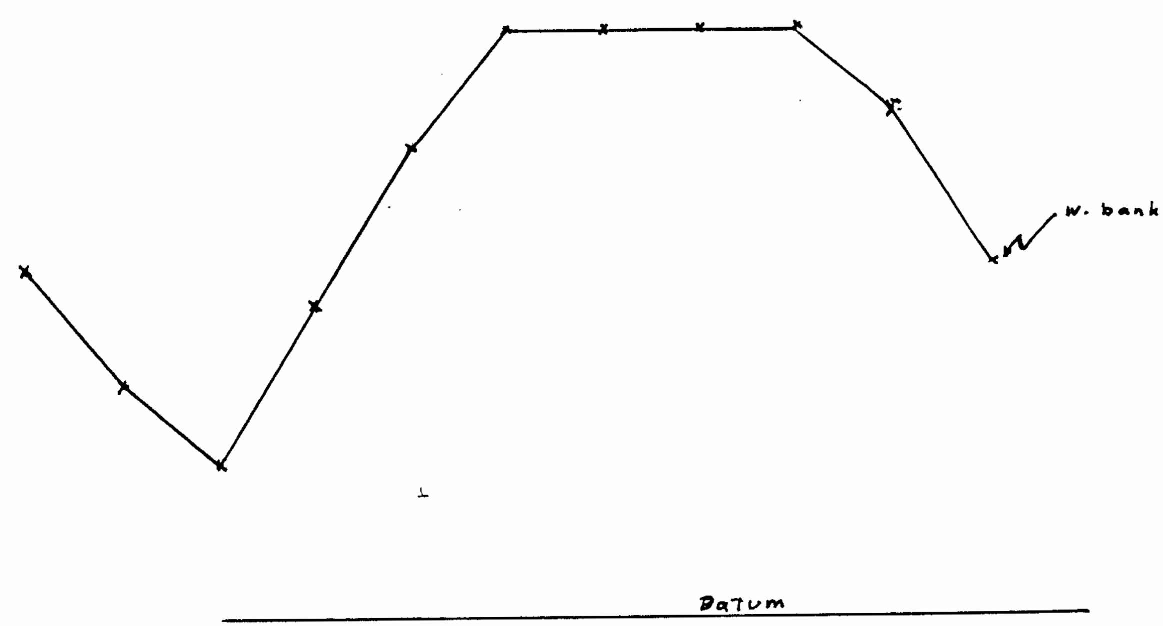


Trav started on W bank and
Travelled // To French Gulch
on hill S. of gulch
1" = 100'

Magnetic Profile
1" = 100 gammas

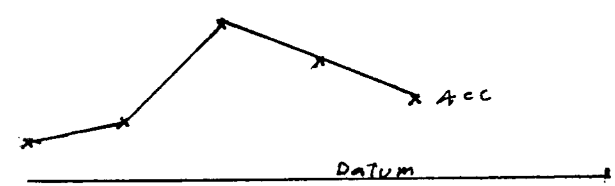
Trav. started on w. side of creek
and travelled up N. Bank of
French Gulch
1" = 200'

Geochemical Profile
1" = 10cc



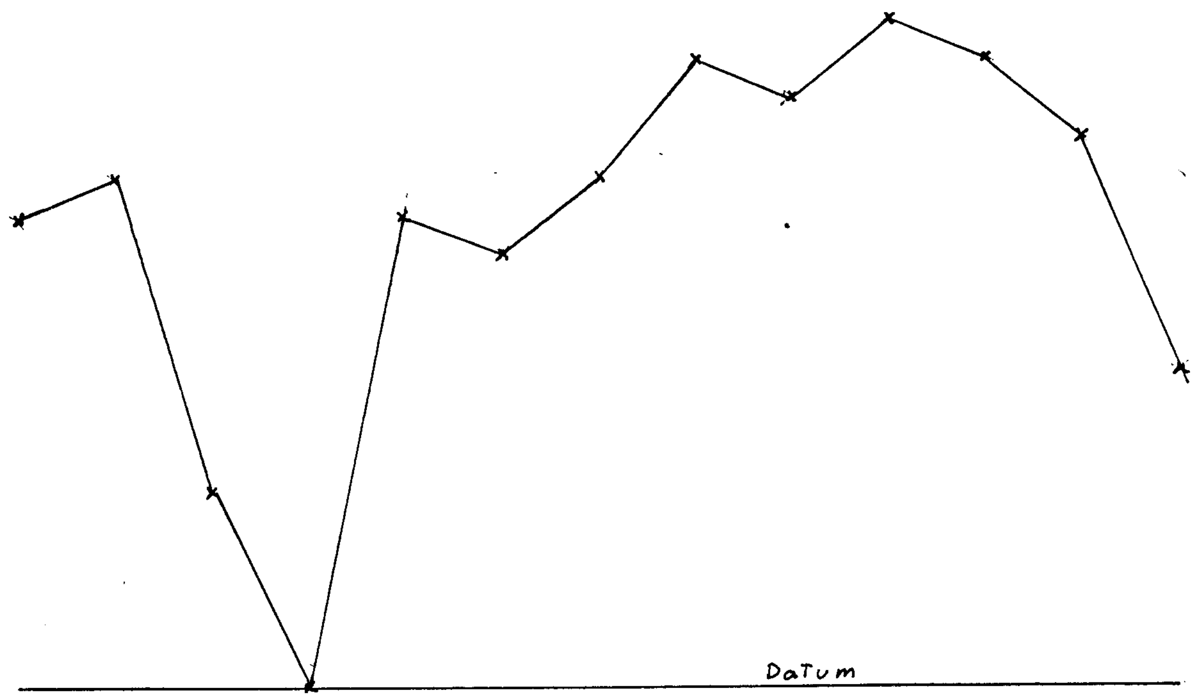
Trav started on W side of creek
and travelled up N. bank of
French Gulch
1" = 100'

Magnetic Profile
1" = 100 Gammas



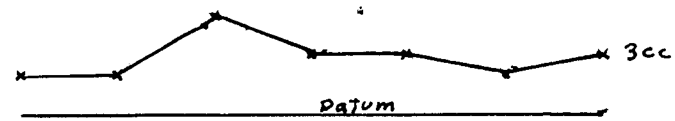
Trav. started on road 300'
downstream from old dredge
and travelled at 228°
1" - 200'

Geochemical Profile
1" = 10cc



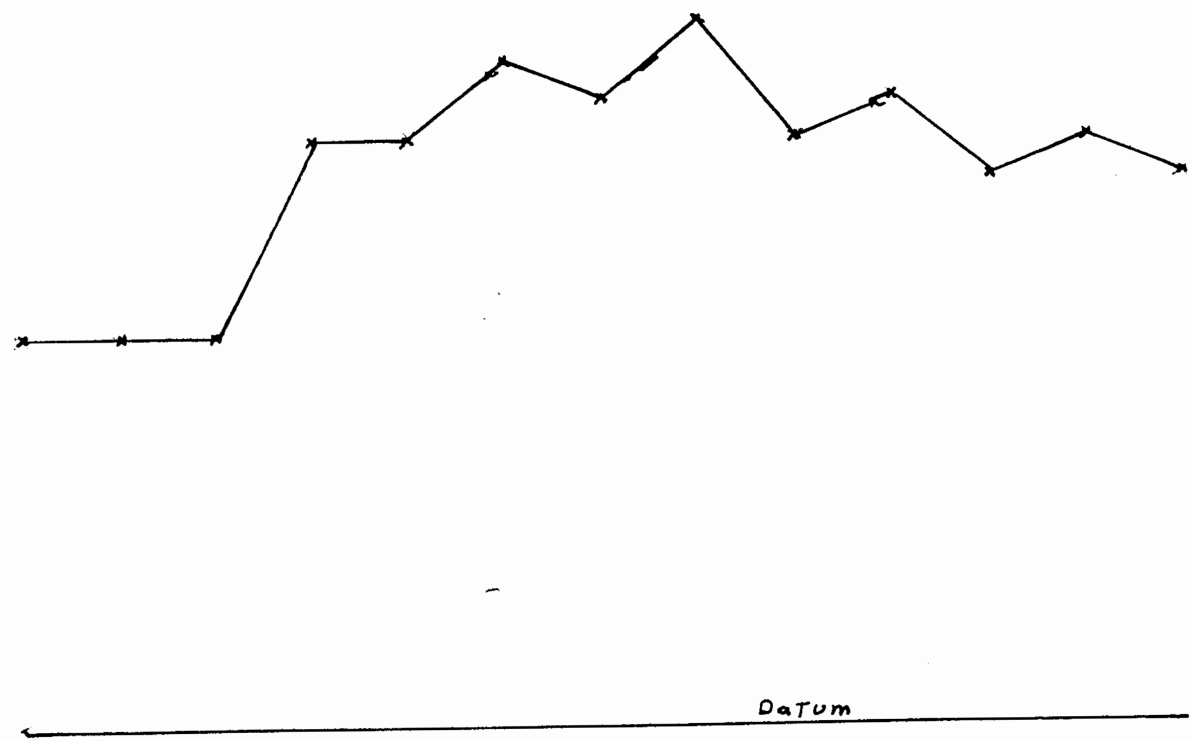
Trav. started on road 300'
downstream from old dredge
and travelled at 228°
1" = 100'

Magnetic Profile
1" = 100 gammas



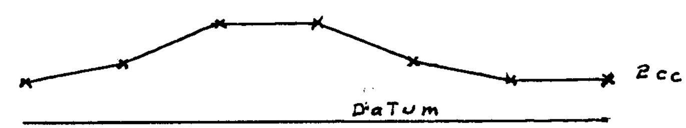
Trav. started on W bank
500' downstream from
old dredge @ 228°
1" = 200'

Geochemical Profile
1" = 10 c.c.



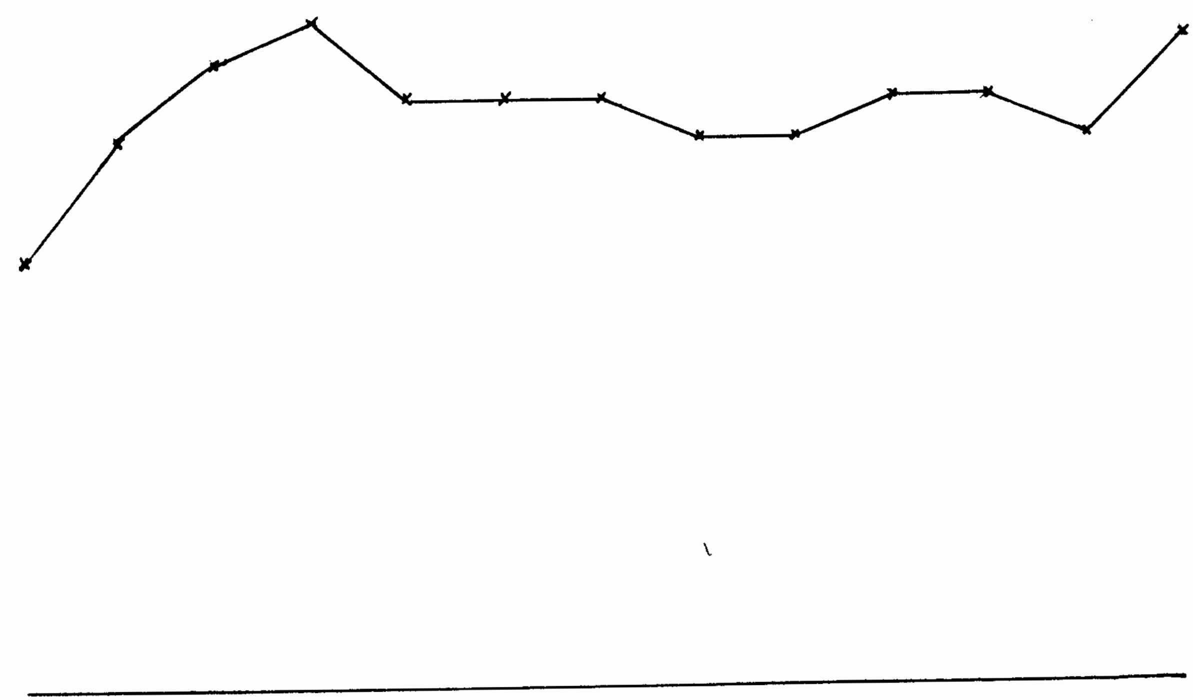
Trav. started on W. bank
500' downstream from
old dredge @ 228°
1" = 100'

Magnetic Profile
1" = 100 gammas



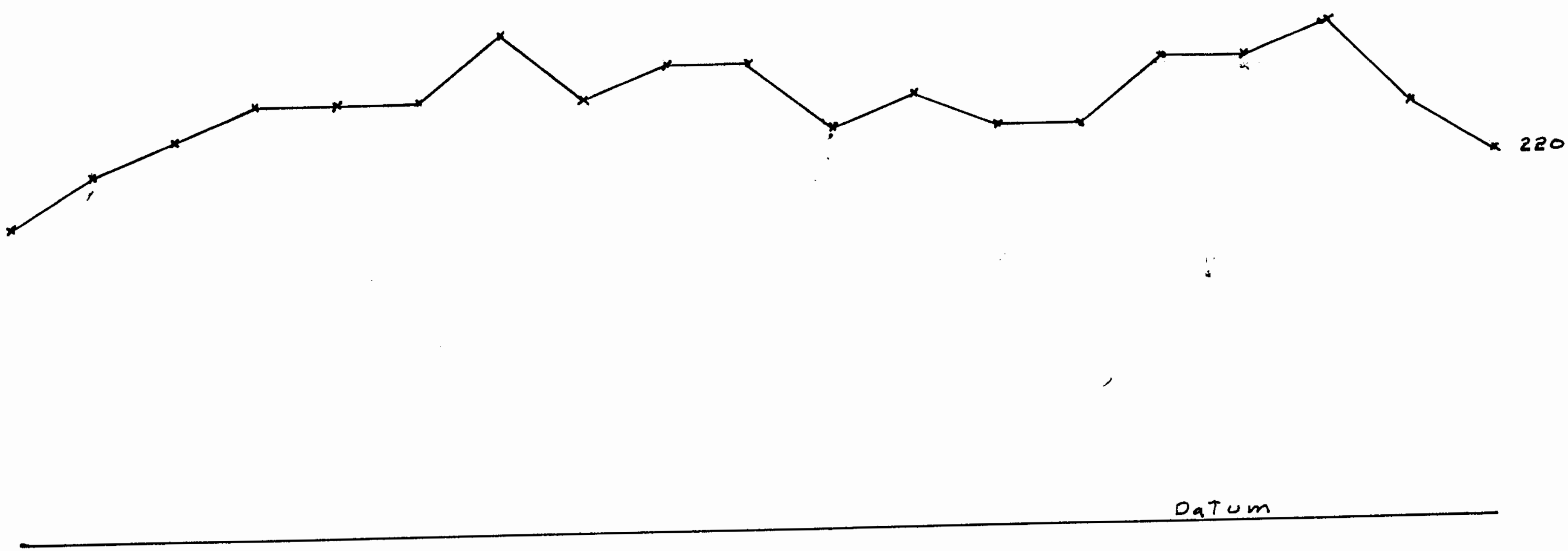
Trav. started 700' downstream
from old dredge @ 228°
1" = 200'

Geochemical Profile
1" = 10 cc.



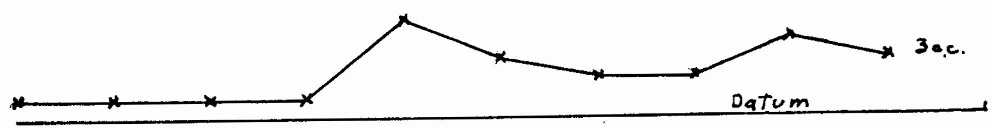
Trav. started 700' downstream
from old dredge @ 228°
1" = 100'

Magnetic Profile
1" = 100' gammas



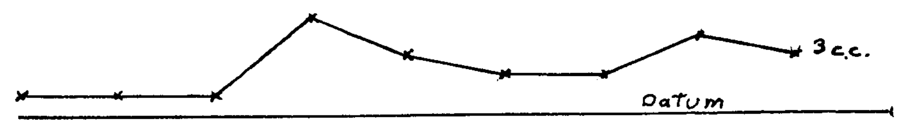
Traverse started 900' downstream
from old dredge @ 228°
1" = 100'

Magnetic Profile
1" = 100 gammas



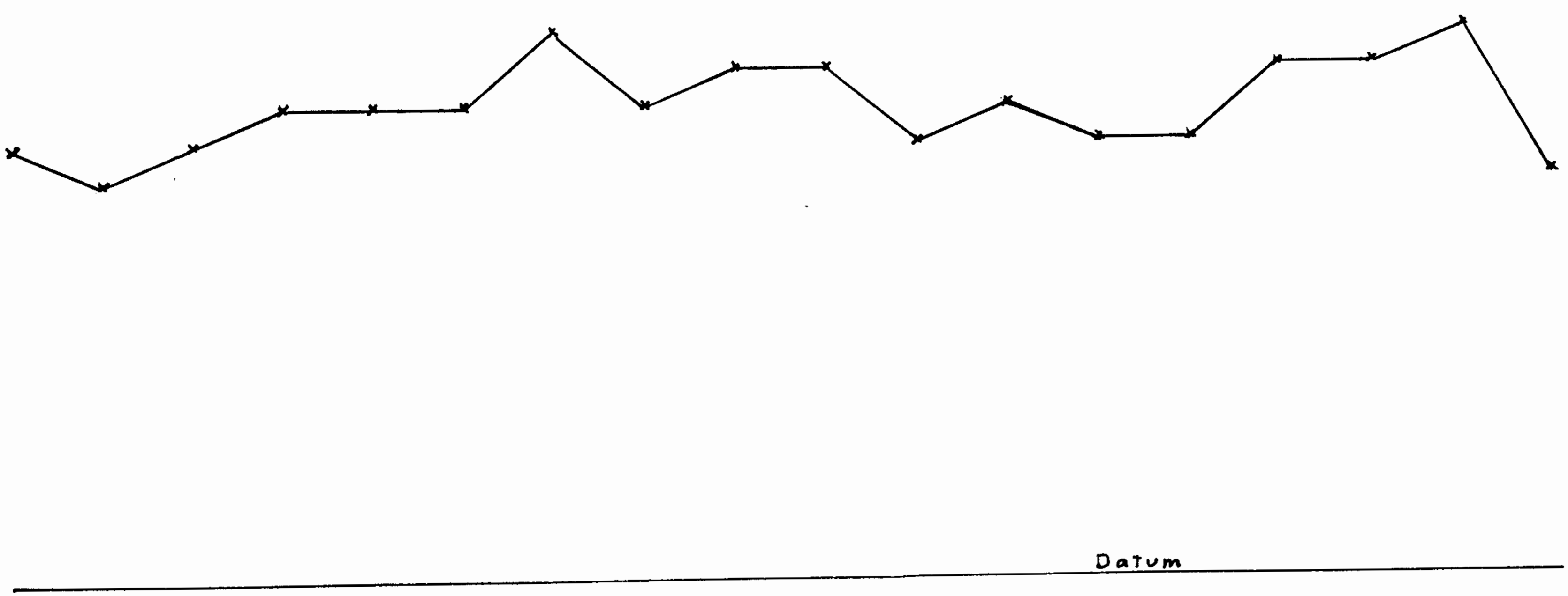
Traverse started 900' downstream
from old dredge @ 228°
1" = 200'

Geochemical Profile
1" = 10 e.e.



Trav starTed 1100' downsTream
from old dredge @ 228°
1" = 200'

Geochemical Profile
1" = 10 c.c.



Trav. started 1100' downstream
from old dredge @ 228°
1" = 100'

Magnetic Profile
1" = 100 gammas