

Kenyon Creek, View is to the southwest towards Alaska and the St. Elias Range. Picture was taken at the time of staking in March 1976.

David Flanagan and Gordon Keevil.



Headwaters of Kenyon Creek as seen from the south. The Terex tractor equipped with ripper was used to dig test pits. May 1976.

Glenn Hartley and Mike Kenyon "test sluicing" gravel from a test pit.

Kenyon Creek, June 1976





ASSESSMENT AND EVALUATION REPORT ON
 Buff, Jul, Rupe and Jess PLACER CLAIMS
 KENYON CREEK, LADUE RIVER AREA, YUKON
 WHITEHORSE MINING DISTRICT

Buff 1 - 9	P3127, P3178-3185
Jul 1 - 7	P3134, P3186 - 3189 P3328 - 3329
Rupe 1 - 12	P3128, P3143-3153
Jess 1 - 6	P3133, P3165-3169

Latitude 63°03'N, Longitude 140°59'W
 Placer Claim Sheet 115N/2

J. Michael Kenyon

September 17th, 1976





This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ _____

Resident Geologist or
Resident Mining Engineer

Considered as representation work under
~~Section 53 (4) Yukon Quartz Mining Act.~~

Commissioner of Yukon Territory

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INTRODUCTION

Kenyon (Discovery) Creek lies within the Ladue River area of the Yukon (Map 1). During the period June 4th to July 26, 1976, exploration and evaluation of the Buff, Jul, Rupe and Jess placer claims was undertaken. A sketch of the claim locations is presented on Map 2. Exploration and evaluation was instigated in conjunction with a pilot test project operating on Kenyon (Discovery) Creek.

PHYSIOGRAPHY AND ACCESS

Access to the claims is by a 60 mile long winter road leaving the Alaska highway at a point 1 mile east of the Alaska border. From a base camp established on the western slope of the Moosehorn Range, a cat road was constructed along Kenyon Creek to the Alaska border. This road provides an adequate route for tracked vehicles and equipment.

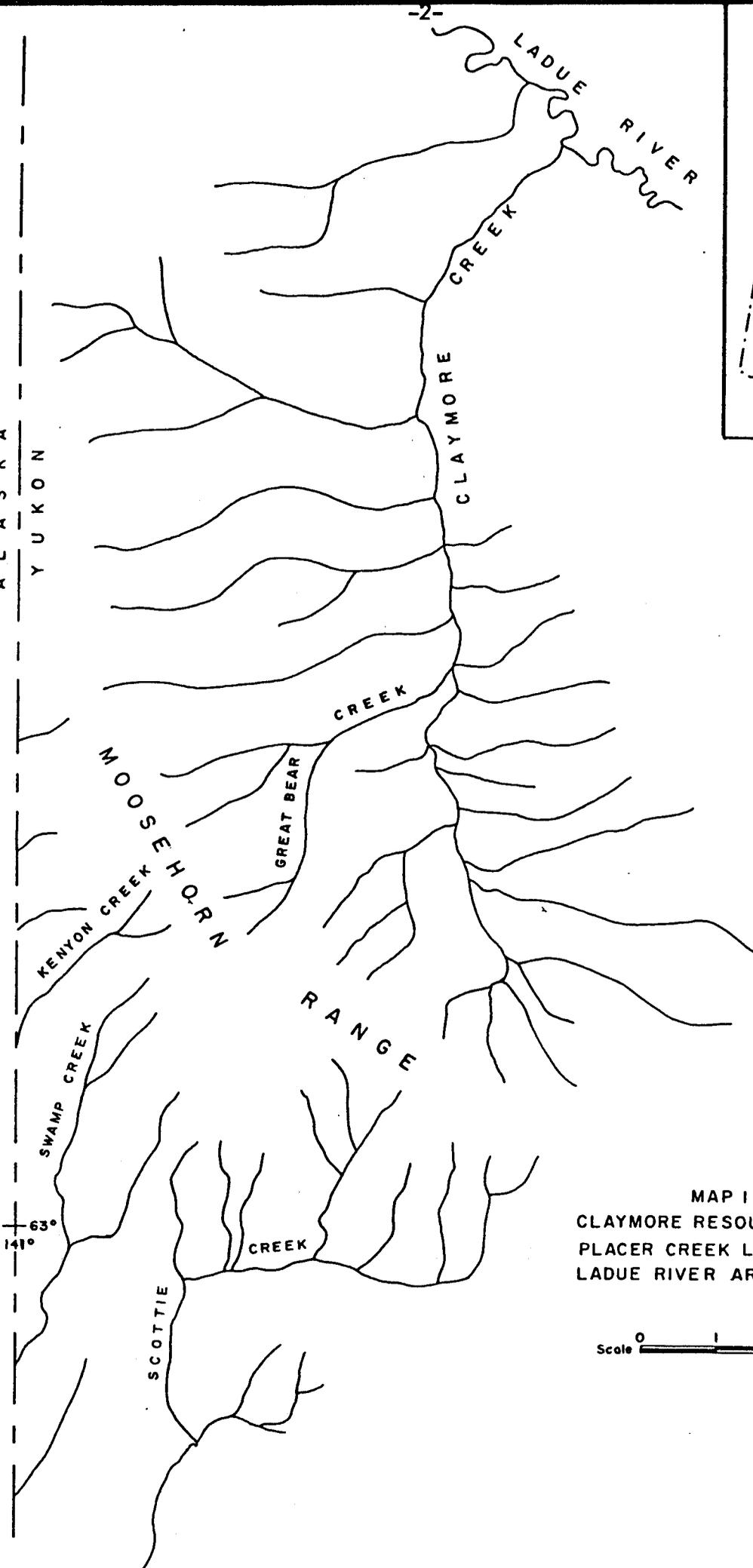
Kenyon Creek drains a portion of the western slope of the Moosehorn Range and flows south-westerly a distance of nearly three miles where it crosses the Yukon-Alaska border and continues an additional 2 miles to the McArthur River. The headwaters of the creek begin at an elevation of 3700 feet and the creek maintains a gradient of 700 feet per mile for the first 3500 feet of its length. Thereafter, it flattens abruptly and for the remaining two miles to the Alaska border, the gradient is approximately 350 feet per mile.

GEOLOGY

The Ladue River area is within a large unglaciated sector of the Yukon, known as the Klondike Plateau. The topography is a maze of deep, broad valleys separated by long smooth-topped ridges, the result of over 30 million years of uninterrupted weathering. The area is greater than 90% overburden with rock exposures generally

ALASKA

YUKON



-2-

LADUE RIVER

CLAYMORE CREEK

CREEK

MOOSEHORN

GREAT BEAR

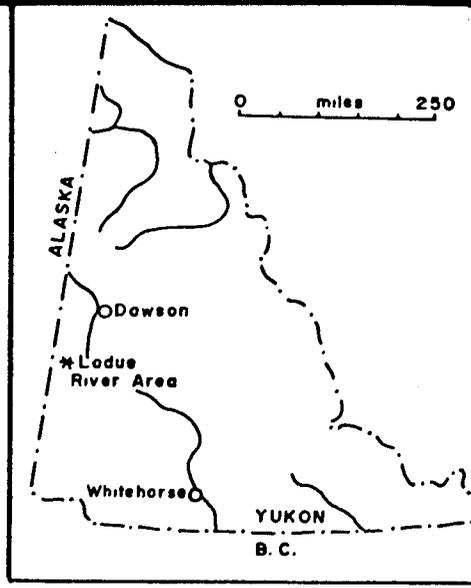
SWAMP CREEK

RANGE

CREEK

SCOTTIE

63°
141°



MAP I
 CLAYMORE RESOURCES LTD.
 PLACER CREEK LOCATIONS
 LADUE RIVER AREA, YUKON

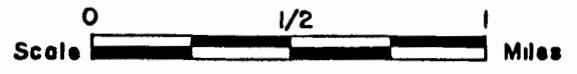
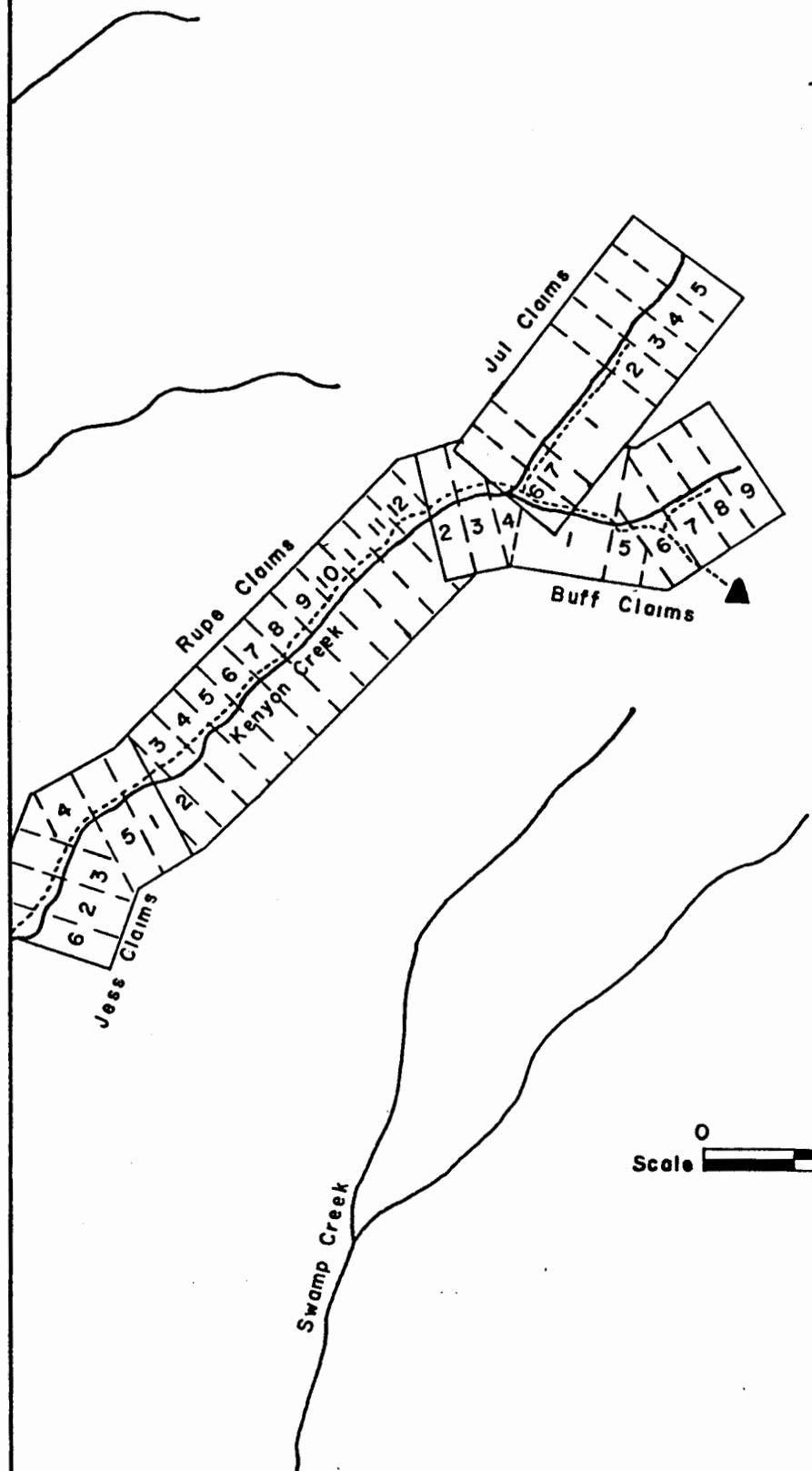
Scale 0 1 2 Miles

YUKON

ALASKA

MAP 2
 Claymore Resources Ltd.
Placer Claim Locations
 Kenyon Creek, Yukon

--- road
 ▲ camp



GEOLOGY Continued

limited to ridge tops. Available exposures are not solid outcrop but rather they consist of felsenmeer rubble and frost-shattered blocks.

Part of the extensive Klotassin batholith, an equigranular biotite hornblende granodiorite of probable Triassic age, underlies the area (Tempelman-Kluit, 1974). A fine-grained felsic aplite and feldspar porphyry are also apparent, but due to the nature of the outcrop, their relationship to the granodiorite is not known. Gold-bearing quartz veins are exposed on the summit of the Moosehorn Range but the frequency and overall extent of the veins, apart from those at the summit, is not known. The vein mineralogy consists of arsenopyrite, galena, sphalerite, sulphosalts (possibly boulangerite) and coarse native gold in a milky quartz gangue. The veins strike NNW and dip gently to the east, coincident with the major joint pattern of the intrusive.

The gravels of the upper reaches of Kenyon (Discovery) Creek are little-rounded and essentially non-sorted. The material encountered consists almost entirely of the above-noted rock types, including a significant proportion of quartz pebbles, cobbles and boulders. Much of the quartz material exhibits the above described vein mineralogy including native gold.

Gravel is exposed only in the stream channel. Elsewhere, trenching has shown that the gravel is overlain by 2 to 3 feet of black organic muck and clay, which in turn is overlain by 1 to 2 feet of vegetation. All material, with the exception of one trench site, is completely frozen beneath the vegetation cover to bedrock. The section of the creek exposed by trenching displays very poorly-sorted gravels and may be considered primarily eluvial in nature with only minor alluvial modification. Further downstream the gravel thickens and presumably the longer transport distances involved will enhance the sorting of the material.

GEOLOGY Continued

Boulders constitute 10% of the volume of the gravels, cobbles 25%, pebbles and gravel 45% and clay 20%. The boulder content may increase locally where the valley wall slope becomes steeper and rafting of material occurs. Generally, the boulders remain confined to the top four feet of the sequence.

Bedrock exposed by trenching is non-cohesive, granular, in situ weathered granodiorite. Mafic minerals are completely decomposed but the foliation and structure of the rock is preserved. The decomposed bedrock extends to depths of six feet in places and passes downward into about 3 feet of a more solid, blocky granodiorite and finally to solid bedrock. Panning has shown that only the initial foot of undisturbed decomposed bedrock carries gold values.

Both coarse and fine gold occur in the creek valley from the top to the bottom of the gravels. The gold is extremely rough and irregular and displays little rounding from transport. Most of the larger coarse pieces contain quartz and some delicate wire and crystal structures are preserved in the smaller pieces.

The gold values tend to increase with depth with the greatest accumulation occurring within the bottom three feet of gravel. Inconsistencies are due in part to thin, discontinuous clay seams acting as impermeable barriers to downward gold migration, but generally are largely a reflection of the eluvial nature of the gravel.

SAMPLING

A total of 23 sample trenches were completed as shown on Map 3. Pits 4, 8, 9 and 10 were sampled during the 1975 field season. All trenches were excavated to bedrock except trenches 5, 25 and 26 which were abandoned due to extreme flooding conditions. The work was accomplished with a Terex 82-40 bulldozer equipped with a heavy duty ripper. This machine is equivalent to a D-8 Caterpillar. Due to permafrost conditions trenching was extremely difficult and resulted in equipment breakage.

SAMPLING Continued

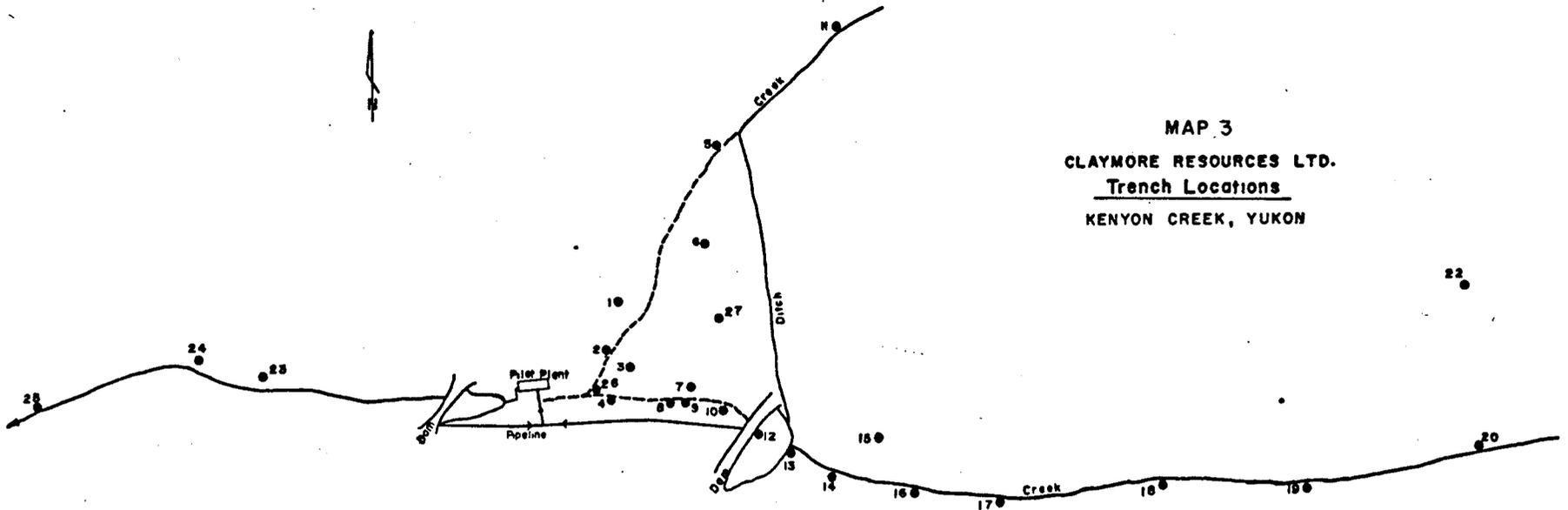
All trenches were in frozen gravel with the exception of trench 11 which was frozen from the surface to a depth of five feet. Many trenches were worked simultaneously in the hope that exposure would thaw the gravel but this met with very limited success as a thin layer of material readily acts as insulation.

One trench was attempted downstream from trench 25, but past this point the creek gradient becomes shallow enough to allow successively thicker gravels to accumulate. This, coupled with the greater sorting action of the creek, would allow the gold to settle to greater depths. Bulldozer trenching is not an adequate means of testing gravels to depths greater than 12 feet, in permafrost areas.

The sampling procedure used consisted of sampling the gravels in 3 foot vertical sections, along the horizontal length of the trench wall. According to Wells (1973), the minimum number of level full, standard pans to a cubic yard of gravel is 150. The standard gold pan measures 15 inches top diameter, 10 inches bottom diameter and has a depth of $2\frac{1}{2}$ inches. Ordinary gravel swells, when removed from place by 25%, while clay and gravel swells 35% (Wells 1973, p.191). A very conservative gravel swell of 20% was used and added to the minimum number of standard pans to give an approximate figure of 180 pans per cubic yard of gravel.

Shovel loads of gravel were taken at random within the three foot vertical section to be sampled, across the horizontal length of the trench, for an aggregate of 6 standard pans. A small shovel was used and approximately 5 shovel loads filled one standard pan. All material 8 inches in diameter and smaller was taken. The material was washed down to a black sand concentrate in each pan, which was then further reduced by washing the aggregate concentrate. At this point, the

MAP 3
CLAYMORE RESOURCES LTD.
Trench Locations
KENYON CREEK, YUKON



S. Michael Kenyon

SAMPLING Continued

the magnetic fraction was removed and the non-magnetic material blown off. The gold was weighed and converted to ounces per cubic yard for each vertical one yard section. It is possible that gold loss occurred in the panning process and the final separation stage, indicating that values obtained are minimum grades.

Table 1 shows the trench dimensions and Table 2, the values obtained from sampling.

CONCLUSION

The exploration and evaluation of the gravels of Kenyon (Discovery) Creek has outlined an area of significant placer gold mineralization, well above the average grade of current economic placer deposits.

A further two miles of the creek remain to be tested. This distance is within a shallower gradient section, felt to be a geologically more suitable environment for placer gold accumulation. The more alluvial nature of the gravels in this section suggest that the bulk of the gold would be found at lower depths. Trench 25 is located just upstream from the creek inflection point and shows the rapid accumulation of gold with depth. Depth to bedrock in trench 25 is not known. The thickness of the gravel downstream from this point is estimated to be in excess of 20 feet.

It has become apparent that although bulldozer trenching provides a much larger sampling area than does drilling, it is not practical where gravels exceed 12 foot thicknesses. It is recommended that adequate evaluation of the remaining two miles of the creek can be achieved only with close-space drilling, with conventional placer drilling equipment.

Table 1

TRENCH DIMENSIONS

<u>Trench No.</u>	<u>Length (ft)</u>	<u>Width (ft)</u>	<u>Depth (ft)</u>
1	80	22	16
2	Excavated by pilot project		
3	Excavated by pilot project		
5	40	22	12
6	40	27	10
7	30	28	6
11	52	20	13
12	Excavated by pilot project		
13	Excavated by pilot project		
14	40	24	7
15	Excavated by pilot project		
16	48	16	10
17	50	15	6
18	60	24	15
19	56	21	8
20	70	26	10
21	70	26	14
22	50	24	7
23	58	16	7
24	55	16	12
25	60	20	13
26*	12	4	6
27	62	26	10

*Trenched with backhoe

**Pits 4,8,9 and 10 were completed during the 1975 field season

Table 2

SAMPLE RESULTS

<u>Trench No.</u>	<u>Interval (ft)</u>	<u>Grade (oz/yd³)</u>
1	0 - 3	0.07
	3 - 6	0.125
	6 - 9	0.10
	9 - 12	not available
	12 - 15	0.19
2	0 - 3	0.65
3	0 - 3	interval removed
	3 - 6	0.90
5	0 - 3	trace
	3 - 6	0.025
	6 - 9	0.065
	9 - 12	0.055
6	0 - 3	0.11
	3 - 6	0.11
	6 - 9	0.07
7	0 - 3	0.35
	3 - 6	0.20
11	0 - 6	trace
	6 - 9	0.155
	9 - 12	0.095
12	0 - 3	0.275
13	0 - 5	interval removed
	5 - 6	0.28
14	0 - 3	0.125
	3 - 6	0.575
15	0 - 3	0.155
16	0 - 3	0.095
	3 - 6	0.190
	6 - 9	0.125

Table 2 Continued

SAMPLE RESULTS

<u>Trench No.</u>	<u>Interval (ft)</u>	<u>Grade (oz/yd³)</u>
17	0 - 3	0.28
	3 - 4 $\frac{1}{2}$	0.53
18	0 - 3	0.06
	3 - 6	0.06
	6 - 9	0.03
	9 - 12	0.03
	12 - 15	0.06
19	0 - 3	0.09
	3 - 6	0.46
20	0 - 3	trace
	3 - 6	0.06
	6 - 7 $\frac{1}{2}$	0.09
21	0 - 3	0.09
	3 - 6	0.09
	6 - 9	0.14
	9 - 12	0.205
	12 - 13 $\frac{1}{2}$	0.25
22	0 - 3	0.20
	3 - 6	0.11
23	0 - 3	0.125
24	0 - 3	0.06
	3 - 6	0.06
	6 - 9	0.215
25	0 - 3	trace
	3 - 6	0.06
	6 - 9	0.06
	9 - 12	0.28
26	0 - 3	0.187
	3 - 6	0.13
27	0 - 6	trace
	6 - 9	0.046

REFERENCES

Tempelman - Kluit, D. J., 1974. Reconnaissance Geology of Aishihik Lake, Snag and Part of Stewart River Map - Areas, West - Central Yukon; Geol. Surv. Can., Paper 73 - 41.

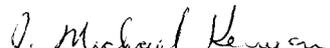
Wells, J.H., 1973. Placer Examination, Principles and Practice; U.S. Dept. Int. Bureau of Land Management, Tech. Bull. 4.

STATEMENT OF QUALIFICATIONS

I, J. Michael Kenyon of the City of Edmonton, in the Province of Alberta, hereby declare:

- 1) That I am a graduate of the Northern Alberta Institute of Technology, Edmonton, Alberta with a diploma in Geology (1970), and that I am a graduate of the University of Alberta, Edmonton, with a B.Sc. (Spec.) in Geology (1974). At present I am enrolled in a Masters program in Geology at the University of Alberta.
- 2) That I have worked in mineral exploration since 1969, mainly in a temporary capacity. In latter years my position has been that of Party Chief.
- 3) This report is based on personal knowledge of the Claymore property. I was Party Chief, largely responsible for the field operations of the 1976 sampling program.

Dated at Edmonton, in the Province
of Alberta, this 27 day of September,
1976.



J. Michael Kenyon, B.Sc.

STATEMENT OF QUALIFICATIONS OF SUPERVISING GEOLOGIST

I, John A. Greig of the City of Edmonton, in the Province of Alberta, hereby declare:

- 1) That I am a Director and President of Claymore Resources Ltd.
- 2) That I am a Professional Geologist, registered in the Province of Alberta.
- 3) That the work described in this report by J. Michael Kenyon was carried out under my supervision.

Dated at the City of Edmonton, in
the Province of Alberta, this 27
day of September, 1976





John A. Greig, B.Sc., M.Sc., P. Geol.

Schedule of Employees

<u>Name & Address</u>	<u>Period of Employment & Position</u>	<u>Salary</u>
Hartley, Glenn S. #2, 10710 - 127th Street Edmonton, Alberta	May 13 - August 20, 1976 (Geologist)	\$1200/mo
Kenyon, J. Michael, B.Sc. 13906 - 101A Avenue Edmonton, Alberta	May 26 - September 17, 1976 (Party Chief)	\$1250/mo
Kenyon, Neil F. 5603 Buckboard Road Calgary, Alberta	May 13 - June 6, 1976 (Assistant Geologist)	\$ 475/mo
Rich, Anthony, B.Sc., P. Geol. 10947 - 86th Avenue Edmonton, Alberta	June 16 - June 23, 1976 (Geologist & Consultant)	\$ 70/day
Greig, John A., B.Sc., M. Sc. #202, 11111 - 87th Avenue Edmonton, Alberta	May 28 - June 5, 1976 August 18 - August 20, 1976 (Supervising Geologist and Consultant)	\$ 70/day