IAND 52-160

ASSESSMENT REPORTS

Whitehorse, M.D.

MAP No. 115-G-1 TYPE OF WORK: Geophysical REport

REPORT FILED UNDER	Dupont of Canada Expl L. 090113
DATE PERFORMED	July 15, 1976 DATE FILED: June 11, 1976
LOCATION – LAT.	61°10'N Fourth of July Creek, Yukon.
LONG.	138°3'W
CLAIM Nos.	Placer Leases 3089 and 3354
$5,000.00	
WORK DONE BY	David G. Mark,
WORK DONE FOR	Dupont of Canada Explorations Ltd.
REMARKS	A seismic refraction survey was conducted along eight profiles on the two leases. Depth to bedrock varied from 150 to 400 feet along two profiles. Presence of permafrost presented estimation of depth to bedrock on the other lines.

FOURTH OF JULY GOLDFIELDS LIMITED OPTION

FINAL REPORT ON EXPLORATION 1976

BY

DU PONT OF CANADA EXPLORATION LIMITED

FOURTH OF JULY CREEK

WHITEHORSE MINING DISTRICT

YUKON TERRITORY

N.T.S. 115-G-1

November 17, 1976 C.B. Gunn, P.Eng.

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SUMMARY

The subject property, optioned from Fourth of July Goldfields Ltd., by Du Pont of Canada Exploration Ltd., was examined by Du Pont between May and August 1976. The field examination comprised refraction seismic surveys on eight sections followed by surface sampling of creek and bank material for gold at thirty three locations. The surface sampling was accomplished using a combination of portable sluiceboxes followed by hand panning and assay of the concentrates.

The results indicate that although some fine colours of gold may be obtained from almost any part of the property, from both creek and bank material, the tenor of the gold is too low to be of further interest to Du Pont. The seismic results indicate widespread permafrost, which makes interpretation of the records difficult. However, the indications are that the wider parts of the valleys are deeply eroded by glaciers. It is concluded that the chances of economically important buried gold placers being present on the property are too slight to warrant further exploration.

INTRODUCTION

Following two short visits to the subject property by C.B. Gunn in June and September 1975, an option agreement was negotiated between Du Pont of Canada Exploration Ltd. and Fourth of July Goldfields Ltd.

Du Pont of Canada examined the property for placer gold in 1976 using a two phase exploration programme. The first phase, consisting of a reconnaissance seismic survey, took place in May and June 1976. The second phase, consisting of creek and till sampling to determine the placer gold content of surficial materials throughout the property, took place in July and August.

The combined results of the seismic and sampling programmes were not considered by Du Pont to be sufficiently encouraging and the option agreement was terminated on September 7, 1976.

This report describes Du Pont of Canada Exploration Ltd's field work and results in 1976.

PROPERTY

When the option agreement between Du Pont of Canada Exploration and Fourth of July Goldfields Ltd. was signed (1st November, 1975) the property consisted of three placer prospecting leases as follows:

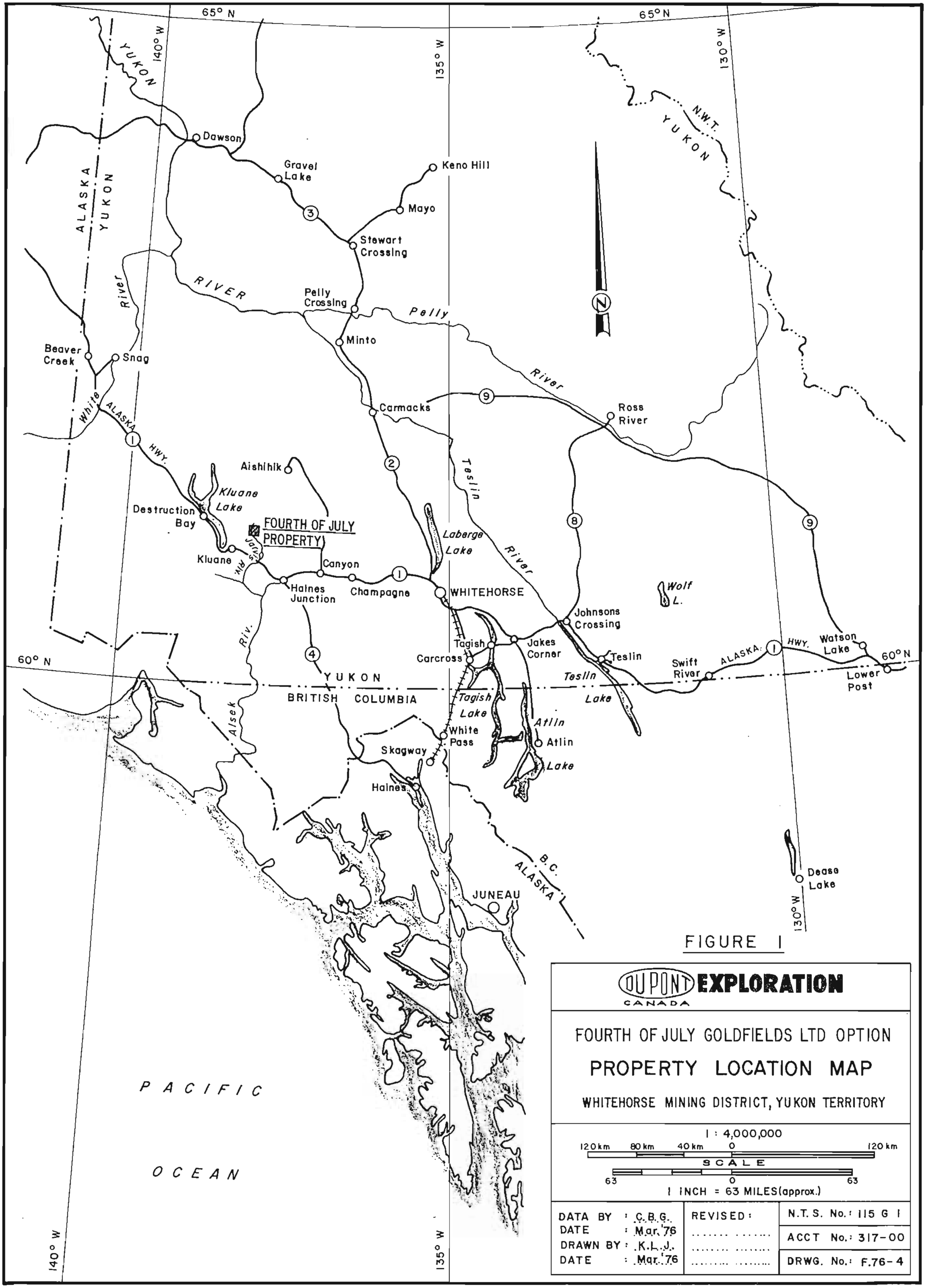

65° N
65° N
140° W
135° W
130° W
YUKON
N.W.T.
YUKON
ALASKA
YUKON
Dawson
Gravel Lake
Keno Hill
Mayo
3
Stewart Crossing
RIVER
Pelly Crossing
Pelly
Minto
River
White River
Beaver Creek
Snag
White
ALASKA
HWY.
1
Carmacks
9
Ross River
Aishihik
2
Teslin
Kluane Lake
Destruction Bay
FOURTH OF JULY PROPERTY
Laberge Lake
River
8
9
Kluane
Jarvis Riv.
Canyon
1
Haines Junction
Champagne
WHITEHORSE
Wolf L.
Johnsons Crossing
Riv.
Tagish
Jakes Corner
Teslin
Swift River
ALASKA
HWY.
Watson Lake
60° N
60° N
Carcross
4
YUKON
BRITISH COLUMBIA
Teslin Lake
Lower Post
Tagish Lake
Alsek
White Pass
Atlin
Atlin Lake
Skagway
Haines
B.C.
ALASKA
Dease Lake
JUNEAU
PACIFIC
OCEAN
DUPONT CANADA EXPLORATION
FOURTH OF JULY GOLDFIELDS LTD OPTION
PROPERTY LOCATION MAP
WHITEHORSE MINING DISTRICT, YUKON TERRITORY
1 : 4,000,000
120 km 80 km 40 km 0 120 km
SCALE
63 0 63
1 INCH = 63 MILES (approx.)
DATA BY : C.B.G.
DATE : Mar. '76
DRAWN BY : K.L.J.
DATE : Mar. '76
REVISED :
N.T.S. No.: 115 G 1
ACCT No.: 317-00
DRWG. No.: F.76-4

FIGURE 1

No.	Location	Length	Claim map
PL 3089	Fourth of July Ck.	5 miles	115-G-1
PL 3354	Twelfth of July Ck.	2 miles	115-G-1 and 115-H-4
PL 3167	Larose Creek	1 mile	115-G-1 and 115-H-4

All are situated in Whitehorse Mining District, Yukon Territory. No ground was dropped and none added, but PL 3089 was converted to grants F1 to F34 and UF1 to UF24 by staking and application on 11, June 1976. PL 3167 was restaked for conversion into grants in July 1976 and at the time of writing the grants have not been issued.

The extent and disposition of the grants and leases is indicated on the compilation map as nearly as possible, using information from claim maps and staking sketches, but no formal survey has been made and the boundaries of the property as shown could be subject to adjustment or correction.

On 7th September 1976, the option agreement between Du Pont of Canada Exploration Ltd. and Fourth of July Goldfields Ltd. was formally terminated. Du Pont does not retain any interest in the property.

LOCATION AND ACCESS

The property is about 100 miles west of Whitehorse and about 10 miles north of the Alaska Highway at Kluane. The property is centred at 61°10'N, 138°3'W in NTS 115-G-1 and overlaps into 115-H-4.

Access by road is sometimes possible for 4-wheel drive vehicles by a 25 mile tote road which leaves the Alaska Highway close to Kluane and leads to the property by way of Cultus Bay and Cultus Creek. The road has steep grades and is subject to washouts.

Access by light aircraft is possible using a private uncontrolled 2800' dirt airstrip constructed by Fourth of July Goldfields at the south end of the property. There are ample spaces to land a helicopter along most parts of the creek bed, but the valley slopes are for the most part fairly densely covered by a mixture of buckbrush and coniferous trees.

The city of Whitehorse is served by frequent regular commercial airlines, from which point numerous fixed wing and helicopter charter airlines operate. The nearest commercial air charter base is at Haines Junction, on the Alaska Highway, 30 miles from the property.

HISTORY

Placer gold was discovered on Fourth of July Creek in the summer of 1903 by Dawson Charlie of Carcross. A minor rush ensued and most of the creeks in the vicinity were worked in a small way for several years. The early mining history of the district is described by Cairnes (1915) and McConnell (1904). Later reference to these early descriptions can be found in Muller (1967). By 1914 most of the activity in this area had ceased. Cairnes estimated the value of production on Fourth of July Creek until 1914 to have been between $6,000 and $10,000.

Numerous cabins along the creek attest to the amount of interest in the creek in the old days. The presence of cabins on the upper part of Fourth of July Creek with boilers and some underground mining equipment suggest that a number of shafts have been sunk in the area, but the exact localities and depths are now a matter for conjecture. Numerous shallow pits and trenches probably dating back to the early days are scattered all along Fourth of July Creek. Some abandoned hydraulicking equipment was also found but it is not known whether this was used to any extent.

Abandoned cabins, tools and sluiceboxes dating back to the early days were also found in Larose Creek, but there is no evidence of old workings on Twelfth of July Creek, except near the mouth of Larose.

A certain amount of more recent prospecting equipment has been left at various places on the property since 1914, but there is no available written record of this work.

The property was acquired by staking in 1973 and 1974 by Tom Churchill, who until 1975 prospected by bulldozer and endeavoured to set up and operate a sluicebox on Larose Creek. The sluicebox did not operate long enough to yield any significant production as most of the time was spent on construction of access roads, airstrip, camp and dams. In November 1975 the property was optioned to Du Pont of Canada Exploration Limited.

GEOLOGY

The geology of the region is well summarized by Muller (1967) in Geological Survey of Canada Memoir 340 and the terrain immediately to the east of Larose Creek is described by Templeman-Kluit (1973) in Geological Survey of Canada Paper 73-41.

Very few bedrock outcrops occur on the property and all of them are of well foliated quartz-biotite-sericite-chlorite schist, greenish grey in fresh outcrop, weathering to reddish brown. Some quartz partings are a few centimetres thick and occasionally slightly transgressive quartz veins up to a metre in width can be seen. The rocks form part of the Yukon Schist complex and appear to represent metamorphosed argillaceous and arenaceous sediments. The largest outcrops occur in the gorges on the lower Fourth of July and lower Twelfth of July Creeks. For the most part, the lower part of Larose Creek runs on or close to bedrock.

The coarse bedload material in Fourth of July Creek contains a wide variety of rock types, mostly lightly to moderately metamorphosed. These include volcanic rocks of various types, tuff, breccia, chert, limestone skarn, granitic intrusives of several types, gabbro, pyroxenite and an unusual type of garnetiferous crystalline rock. The latter is particularly common in the upper parts of Twelfth of July and Larose Creeks. In hand specimen this rock has the appearance of a garnetiferous granodiorite. The largest proportion of coarse material in the creek beds is of flattened rounded boulders of local schist. The other types of rocks have been brought unknown distances by mountain glaciation and have washed out of the thick glacial deposits which floor the valley of Fourth of July Creek and its tributaries.

The land forms in the area show many features typical of mountain glaciation. The lower slopes and valley floors are covered with glacial deposits of various kinds. The most common type of deposit in present river cuts is boulder till, normally with a buff silty matrix and variable amounts of flattened or rounded boulders. The higher banks sometimes show the presence of more than one till sheet, separated by sandy or gravelly partings, which may represent ablation till and outwash material deposited during successive advances and retreats of the valley glaciers. In the vicinity of the junction of Twelfth of July and Fourth of July Creeks higher bank cuts show alternating sections of glacial moraine and stratified sands which may be englacial or outwash deposits. In detail the glacial stratigraphy is rather complex, but the prominent terrace in this vicinity appears to be a terminal moraine complex from a late ice advance coming down the upper Fourth of July Creek. In the lower part of Fourth of July Creek the valley sides are mantled with a partially dissected terrace of light buff glacial lacustrine silts of which there are very prominent cliffs in the Jarvis River Valley adjoining to the south.

The report by Cairnes on the early operations prior to 1914 indicated that little or no permafrost could be expected in the valley. This was based on reports that the early miners had great difficulty in sinking shafts because of ground water and running ground. More recent experience from stripping and trenching by Churchill and our present seismic surveys suggest that permafrost is much more widespread than was previously thought and that probably the thawed ground encountered by the early miners was only a local condition in and around the present creek bed. The presence of permafrost made interpretation of the seismic profiles difficult, but the interpreted depths of till cover as indicated in the geophysical report (Appendix I) would be consistent with the bedrock profile of typical glacial 'U' shape.

It has been long supposed that the gold in the present creeks has been derived from re-washing of glacial deposits and our own examination tends to confirm this view. It must be supposed that the gold was incorporated into the glacial material from erosion of auriferous gravels in the pre-existing river beds. The ultimate bedrock source is probably the Yukon Schists underlying the property, which may contain buried metamorphosed gold placer deposits of an earlier period.

SAMPLING

At the time the property was optioned there were no reliable quantitative data on the distribution and tenor of gold in the creeks, upon which to base an assessment of potential for placer mining of surface material. The sample plan was arranged to show the distribution of gold on the property and the sample processing was derived to reflect as nearly as possible what would be recoverable values under favourable circumstances from the various materials sampled. Field concentration was used so that adequate amounts of sample could be collected and so that the final product of concentration would be approximately comparable to the production of a jig or sluice in a commerical operation. Determination of adequate sample size was made in accordance with sampling statistics described by Clifton, et al (1969). The sampling process is indicated in the flow sheet (Fig.2). By use of portable equipment transported by tracked vehicle and operated by a five man crew, it was possible to collect and wash two half cubic metre samples per day. Gold determinations on the heavy mineral concentrates were performed by fire assay in the laboratories of Bondar-Clegg & Co. in Vancouver. It must be noted that fire assay determines the total gold content of the sample, which is not necessarily the same as recoverable gold. Many errors in placer sampling have occurred through use of uncorrected fire assay results, which may result in considerable over-valuation. The two main sources of error are inclusion of unrecoverable fine flour gold and gold contained in other minerals such as pyrite, all of which gold would probably be lost in the tailings of a commercial operation.

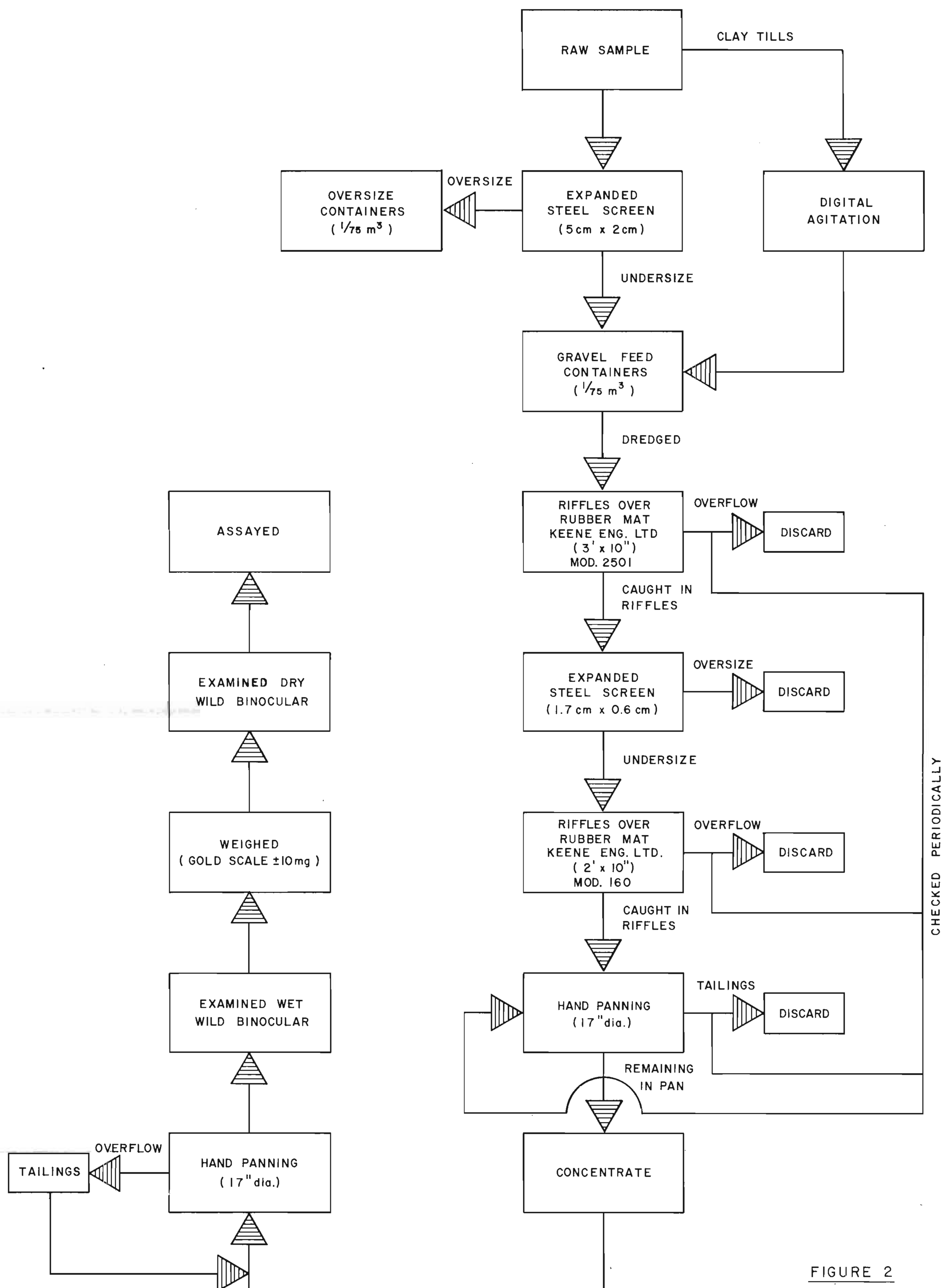


FIGURE 2

DUPONT EXPLORATION CANADA

FOURTH OF JULY GOLDFIELDS LTD OPTION

FLOW SHEET

SURFACE SAMPLING PROGRAMME

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SCALE

1 INCH = FEET

DATA BY : C.B.G.	REVISED :	N.T.S. No.: 115 G 1
DATE : Oct. '76		ACCT No.: 317-00
DRAWN BY : K.L.J.		DRWG. No.: F.76-14
DATE : Nov. '76		

The use of sluice boxes in field concentration was intended to eliminate the fine unrecoverable gold. Visual microscopic examination of the concentrates suggests that very little, if any, gold was present in other than free form. The heavy mineral concentrates are remarkable in containing virtually no sulphide minerals. There remains a small possibility that the fire assay results of heavy mineral concentrates obtained and examined in this way may still be higher than they should be for proper ground evaluation, and if future work is done in areas of marginal economic feasibility this should be properly taken into account. Pilot plant tests using the envisaged recovery system would give a more reliable estimate of recoverable values and this type of testing would be essential before committing to production.

Sample collection was carried out with the objective of representing as nearly as possible the bulk content of bank and creek material, such as would feed a commercial mining operation. An exception to this was Sample No.4 which was taken directly on bedrock in Larose Creek, and where, as results indicate, gold values are anomalously high. (See Fig.3).

RESULTS

Geophysics

The results of the seismic refraction profiling study are fully detailed and attached as Appendix I.

Orientation magnetometer studies were carried out to see if magnetite concentration in the river channels would give sufficient magnetic contrast to indicate the presence of ancient stream channels. The instruments used in this survey were a McPhar M700 Fluxgate Magnetometer and a McPhar GP70 Proton Magnetometer. Reconnaissance lines across Fourth of July Creek in the vicinity of seismic line A and along the airstrip showed flat featureless responses with both instruments. The Proton Magnetometer, having greater response and precision, was operated along all the other seismic profile lines, but during the entire succeeding period of the survey, magnetic storms prevented the gathering of any useful data. It would seem from the first orientation lines that no response can be expected from the small amounts of magnetite sand in the present or ancient stream channels.

Surface Sampling

Of the 35 surface samples taken, 23 were of stream material and 12 were of glacial material adjacent to the present streams. The locations of all the samples are shown on the map (in pocket). Table I summarizes the samples grouped according to material and indicates location, volume, gold content (as determined by fire assay on the heavy mineral concentrates) and the calculated gold content per cubic metre.

All the concentrates were examined by the writer, wet, during final panning, and afterwards dry, under the binocular microscope. The characteristics of the mineral assemblages were remarkably constant, both throughout the length of the streams and from place to place in the glacial materials. There was good correlation between the suites in the glacial materials and creeks, but the creek suites contained rather less of the easily destroyed heavy minerals such as epidote. Heavy mineral grain size was fairly uniform from sample to sample, varying generally between 0.1 and 0.5 mm. The concentrates consisted largely of magnetite with subsidiary garnet, rutile, zircon, sphene, epidote and staurolite in varying amounts. Most of the larger grains are angular to subrounded while the smaller grains tend to be rounded to well rounded.

No pyrite, chalcopyrite, galena or other common sulphide mineral was noted in the field examination. On the other hand gold was found in every sample. It should be noted that the concentrates were obtained by sluicing and panning to the point at which heavy minerals began to be panned out. A concentrate obtained in this way inevitably loses some smaller and lighter heavy minerals during the sluicing, while at the same time a large number of quartz grains are retained at the panning stage. Sluice box and pan tails were periodically checked by careful panning and while there was some loss of heavy minerals, no gold was ever visible in the tails. The composite of all the tailings from the final panning stage was assayed as a check against losses and found to contain 0.78 mg gold (See Table 1), a very small amount for the aggregate of 35 samples. Samples number 34 and 35 were check samples at the same sites as 1 and 2 respectively which were taken while the equipment was being tuned up.

As a check on visual examination for other minerals of possible economic importance, semi quantitative spectrographic analysis was carried out on 5 selected representative samples. (See Appendix II). These checks did not indicate the presence of anything else of interest to Du Pont.

As may be expected, a significant proportion of both creek and till samples consisted of over-size boulders, cobbles and pebbles which were discarded during concentration. Nevertheless, the volume of this discarded material was measured and included in calculations of weights of heavy mineral and gold per cubic metre as over-size material would necessarily have to be handled in a mining operation. The proportion of over-sized to under-sized material varied from 50% in the coarse bouldery upper reaches of the creeks to less than 1% in the fine glacial fluvial silt at sample site #26. Boulders and cobbles ranged normally between 10% and 25% by volume.

TABLE 1

SAMPLE SUMMARY

A) Creek bed material

SAMPLE #	LOCATION*	VOL.(m^3)	Au (mg)	mg/m^3
1	upper 4th July	0.15	0.455	3.03
34	same loc as #1	0.32	0.675	2.11
2	lower 12th July	0.20	14.525	72.62
35	same loc as #2	0.20	6.870	34.35
3	lower Larose	0.63	4.230	6.72
4	middle Larose	0.72	40.710	56.59
5	N.trib of Larose	0.39	12.175	31.17
6	upper Larose	0.56	2.285	4.09
7	upper 12th July	0.50	0.180	0.36
8	middle 12th July	0.50	0.190	0.38
9	lower 12th July	0.47	25.440	53.93
10	upper 4th July	0.47	26.945	57.12
14	Alie Creek	0.19	1.100	5.78
16	upper 4th July	0.32	0.320 ~~0.032~~	1.00
17	upper 4th July	0.15	1.355	9.04
18	Snyder Creek	0.28	2.275	8.12
20	upper 4th July	0.40	0.370	0.92
21	middle 4th July	0.43	2.445	5.72
23	middle 4th July	0.45	1.525	3.38
25	middle 4th July	0.51	1.185	2.32
27	lower 4th July	0.44	1.180	2.68
30	lower 4th July	0.56	1.195	2.14
32	lower 4th July	0.40	0.555	1.39

B) Glacial material

SAMPLE #	LOCATION*	VOL. (m^3)	Au (mg)	mg/m^3
11	sandy till near #1	0.44	3.030	6.88
12	outwash gravel 12th July	0.26	1.535	5.91
13	buff silty till near #12	0.29	1.385	4.78
15	boulder till Alie Ck.	0.22	0.920	4.19
19	boulder till Snyder Ck.	0.23	0.540	2.38
22	buff silty till, middle 4th July	0.28	3.415	12.19
24	buff silty till, middle 4th July	0.51	1.130	2.21
26	outwash silt or aluvium 4th July	0.29	0.100	0.34
28	boulder till lower 4th July	0.33	2.795	8.47
29	boulder till lower 4th July	0.40	0.475	1.19
31	boulder till near #30	0.32	0.330	1.03
33	sandy till near #32	0.32	0.340	1.06

Tails from final panning (35 samples)

*for locations see compilation map in pocket of report.

DISCUSSION OF RESULTS

Because of the unexpectedly severe permafrost problem, the seismic reconnaissance programme did not outline the bedrock surface or indicate stratigraphy in drift as well as might have been hoped. Nevertheless, the discovery of deep and pervasive permafrost was important in that its presence would add serious complications and cost to any mining operation envisaged for this property. At the same time the partial depth determinations indicated depths to bedrock well in excess of those which could be contemplated for stripping to reach buried river channels.

The surface sampling programme provided the information that was lacking concerning the distribution of the gold among the various units in different parts of the property and indicated the concentrations which could be expected both in till and in active creeks.

All available exposures of the contact between overburden and bedrock were examined for traces of possible preserved river gravels, but none was found. In view of the apparent active and deep glacial erosion carried out by the glaciers which once filled the valleys of Fourth of July and Twelfth of July Creeks, it seems most improbable that any ancient (i.e. pre-glacial) placer deposits could have been preserved.

The sampling of active creeks for heavy mineral concentration is more difficult than bank sampling of homogenous deposits such as glacial till. Different locations in an active creek can carry significantly different proportions of heavy and light material. Sample sites were chosen where adequate quantities of heavy mineral were expected to be present, but no attempt at high-grading or pot-holing in specially selected favourable areas was made. Sample No.4 was taken of necessity on bedrock in Larose Creek and the results indicate that this sample is abnormally high in gold content, as might be expected on a schist bedrock surface which forms a good trap. It can not be expected that there would be any great quantity of material containing values in gold such as those obtained.

Because of the variability in concentrating power of active creeks it is necessary to take some account of the amounts of heavy minerals obtained from each sample and relate this to the identified gold content. Figure 3 shows a plot of the ratio of gold obtained in milligrams to the weight of heavy mineral concentrate as measured in the field. This tends to even out the bias caused by random selection of the sample site. The plot of the same ratios for the till samples on Figure 3 shows much more uniform values of gold as might be expected. The plot has arranged the samples as far as possible in geographical sequence along the creeks and it is interesting to note the wide variations from place to place.

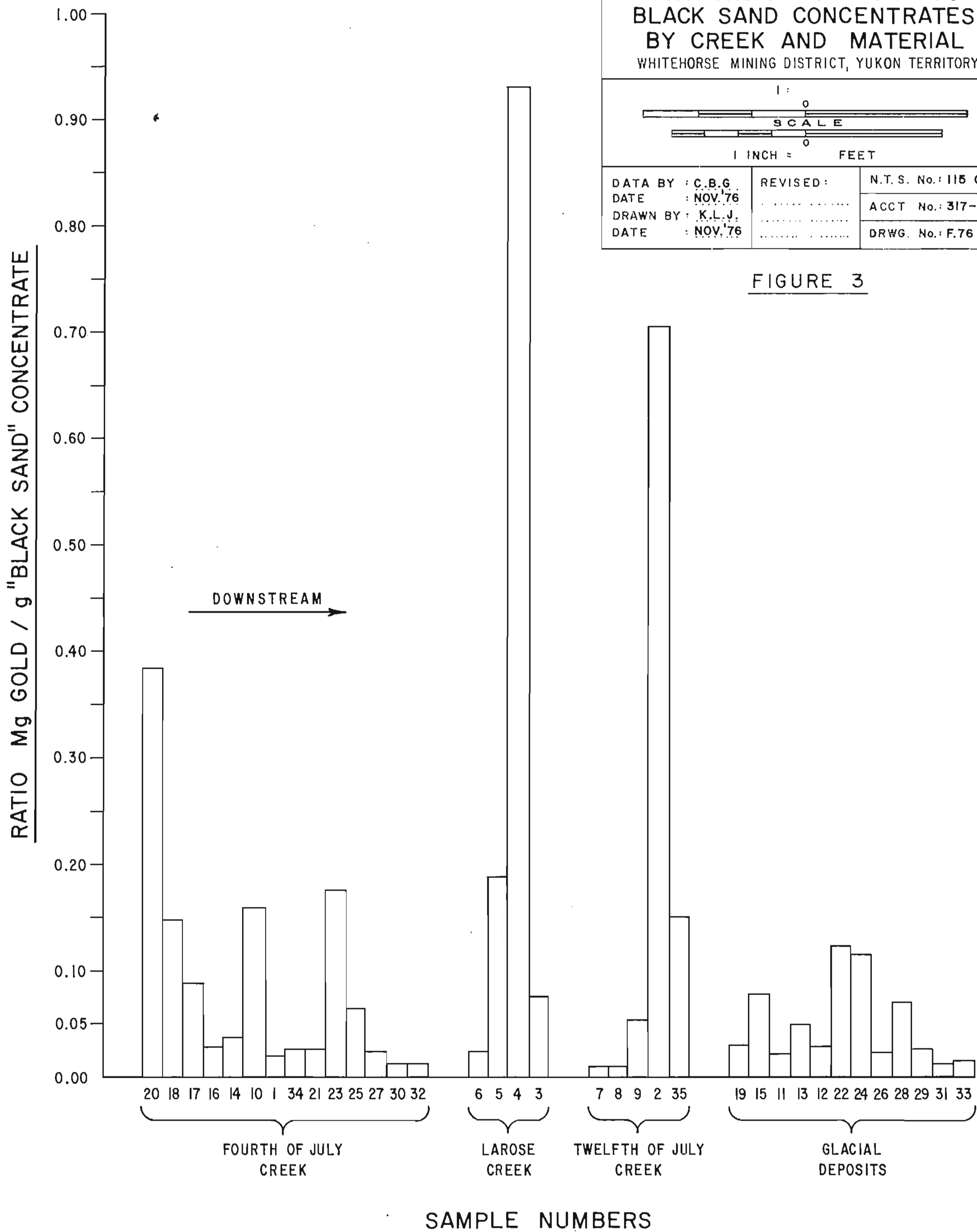
DUPONT CANADA EXPLORATION

FOURTH OF JULY GOLDFIELDS LTD OPTION
PROPORTION OF GOLD TO BLACK SAND CONCENTRATES BY CREEK AND MATERIAL
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

1 :
SCALE
1 INCH = FEET

DATA BY : C.B.G.	REVISED :	N.T.S. No.: 115 G 1
DATE : NOV.'76		ACCT No.: 317-00
DRAWN BY : K.L.J.		DRWG. No.: F.76-15
DATE : NOV.'76		

FIGURE 3



In general it can be seen the upper parts of the creeks are slightly richer in gold than the lower reaches, but there are significant local variations. It is interesting to note that the highest values obtained are on Larose Creek where there was considerable activity in the early days and where Churchill set up his box recently with the hope of obtaining some production. It is clear that results obtained close to bedrock on Larose Creek should not be extrapolated to other parts of the property. It is also interesting to note that in a number of cases the tenor of gold in the bank tills is higher than in the creek immediately adjacent to it. One could suppose that this indicates selective separation of gold from the other heavy mineral concentrate and its downward filtration to the local base level. This might either be a clay false bedrock or a permafrost surface. In either case it is unlikely that the thickness of any enriched layer would be very great.

CONCLUSIONS AND RECOMMENDATIONS

1. The seismic profiling strongly indicates that the bedrock floor of the valleys of Fourth of July and Twelfth of July Creeks is deeply buried below frozen till and conforms to the typical glacially eroded 'U' shape.

2. The interpretation of the seismic profiles is not in itself conclusive, but study of the glacial features of erosion and deposition on the property area strongly supports the above hypothesis. Confirmation by drilling would be necessary if it was felt that the property had higher placer potential.

3. Du Pont's present investigations do not indicate that the property has sufficient placer potential to justify a drilling programme.

4. The widespread presence of deep permafrost extending to bedrock, as indicated by the seismic results, would be a serious and expensive problem in the development of a placer mine.

5. Our studies indicate that it is very unlikely that exploitable buried gold bearing placer gravels exist on the property.

6. Surface sampling confirms reports of placer gold throughout the property in the creek beds. It also shows the presence of gold in the tills at numerous locations. This confirms that the glacial drift is the immediate source of gold in the creeks.

7. Results of surface sampling show that the tenor of gold both in the creeks and in glacial deposits is too low to justify additional exploration by Du Pont.

8. No further work by Du Pont is recommended.

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CERTIFICATION

I, Christopher B. Gunn, of 2867 Panorama Drive, North Vancouver, B.C. to certify that:

1. I am a graduate of the University of Wales (1962) and the University of Western Ontario (1967) in Geology and Economic Geology.

2. I have practiced my profession as an exploration geologist for 14 years.

3. I am a member of the Association of Professional Engineers of Ontario and the Association of Professional Engineers of British Columbia and I am a Chartered Engineer of the United Kingdom.

4. The work described in this report was carried out under my direct supervision.

5. I have no beneficial interest direct or indirect in Fourth of July Goldfields Limited, nor do I expect to receive any such interest.

Christopher B. Gunn, P.Eng

November 17, 1976

APPENDIX I

GEOPHYSICAL REPORT

on a

SEISMIC REFRACTION SURVEY

on

PLACER LEASES 3089 and 3354

FOURTH OF JULY CREEK

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

Location: 61° 10'N, 138° 3'W
on Fourth of July Creek which is 13 miles due east of Kluane Lake and 110 miles N70°W of Whitehorse.

Claim Sheet: 115-G-1

Survey Date: May 28 - June 8, 1976

Report by: David G. Mark, Geophysicist
GEOTRONICS SURVEYS LTD.
307-475 Howe Street,
Vancouver, B.C.

For: DuPONT OF CANADA EXPLORATIONS LTD.,
102-1550 Alberni Street,
Vancouver, B.C.

Dated: July 15, 1976

Office Of The Supervising Mining Recorder
AUG - 5 1976
WHITEHORSE
Yukon Territory

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~~

$ 5000.00

Resident Geologist ~~or~~
~~Resident Mining Engineer~~

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

B.R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

RECEIVED
AUG 5 1976
MINING
INSPECTORS OFFICE
WHITEHORSE, Y.T.

TABLE OF CONTENTS

MAPS AND PROFILES

SUMMARY

Seismic refraction studies were carried out over placer leases 3089 and 3354 on Fourth of July and Twelfth of July creeks from May 28th to June 8th, 1976. Fourth of July Creek is located east of Kluane Lake and 110 miles N70°W of Whitehorse. Access is best by fixed wing but can be gained by 30 or so miles of 4-wheel drive road. The objects of the survey were to determine bedrock depth and to locate old stream channels.

Old work on the property consisted mainly of shaft sinking, and recent work, road and airstrip building as well as some trenching.

The property is underlain by Yukon Complex schist which is overlain by boulder till and recent gravels.

The survey was carried out using a 12-channel seismic refraction system with 1100-foot spreads and with explosives as the energy source. Eight profiles were done. The data were analysed using an intercept-delay time technique.

CONCLUSIONS

1. Bedrock depth was determined on only two lines, SL-C and SL-E, and perhaps a third line, SL-A.

2. Permafrost and/or too great a bedrock depth were felt to be the causes of not determining the depth to bedrock on the other lines.

3. On SL-C or SL-E, no buried stream channels were encountered.

RECOMMENDATIONS

In order to obtain bedrock depths over much of the property, it is recommended to drill. Certainly more information could be extracted from the seismic data with carefully spotted drill holes.

GEOPHYSICAL REPORT

on a

SEISMIC REFRACTION SURVEY

on

PLACER LEASES 3089 and 3354

FOURTH OF JULY CREEK

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

INTRODUCTION AND GENERAL REMARKS

This report discusses the field procedure, compilation of data, and interpretation of results of a seismic refraction survey carried out over placer leases 3089 and 3354 on Fourth of July Creek and Twelfth of July Creek during June, 1976.

The field work was carried out under the supervision of the writer with two helpers. The interpretation was done by B. Chandra, Ph.D., geophysicist and the writer. The amount of seismic refraction surveying done was 14,300 feet.

The object of the survey was to measure the depth of stream gravels to the bedrock since the placer gold is concentrated in the stream gravels next to the bedrock. A second object was to locate any stream channels within the bedrock since these also could contain concentrations of placer gold.

Permafrost, generally, is a major problem with seismic refraction studies since the velocity of an ice-type permafrost approaches that of bedrock. Because of how seismic refraction works, if the velocity of the permafrost layer is close to or greater than that of the bedrock, then the depth to the bedrock cannot be measured. To use seismic refraction to determine depths, the velocity of each layer must be greater than that of the one above it.

On this property, it was anticipated that permafrost would not pose too serious a problem for the following two reasons: 1) It was reported that a 70-foot shaft was sunk in the upper reaches of Fourth of July Creek and did not encounter permafrost. 2) If permafrost did occur, it was hoped that it would only be a few feet thick and therefore inconsequential, or, extend through the overburden and into the bedrock. If the latter occurred, it was anticipated that the permafrost bedrock would be of greater velocity than the permafrost overburden. This was found to be the case in tests carried out by the Geological Survey of Canada in an area underlain by schist east of Carmacks.

FIELD PERSONNEL

Name	Capacity	Address
David G. Mark	Geophysicist and Field Supervisor	118-588 E 5th Avenue Vancouver, B.C.
Bo Chandra	Geophysicist and Assistant	940 E 10th Avenue, Vancouver, B.C.
Kerry Routh	Lineman	502-West 23rd Street, North Vancouver, B.C.

PROPERTY

The property consists of two placer leases: PL3089 located on Fourth of July Creek, and PL3354 located on Twelfth of July Creek.

The property is owned by Tom Churchill of Whitehorse, Yukon Territory and is being optioned to DuPont of Canada Explorations Ltd.

LOCATION AND ACCESS

The placer leases are located on the two above-mentioned creeks which are found in the Ruby Mountain Range. The property is thirteen miles due east of Kluane Lake, 33 miles N33W of Haines Junction, and 110 miles N70°W of Whitehorse.

The coordinates are 61° 10'N Latitude and 138° 3'W Longitude.

Access to the property is best gained by air since a small airstrip is located on the south end of the property. Access can also be gained by a 4-wheel drive or caterpillar type tracked vehicle on a 30(?)-mile tote road from Cultus Bay and the Alaska Highway.

PHYSIOGRAPHY

The property is located on the southwest side of the Ruby Mountain Range, the elevations of which range from 2,600 feet a.s.l. to well over 7,000 feet a.s.l.

The terrain of the property is very moderate since the leases are found on creeks within broad U-shaped valleys. The elevation varies from about 3,000 feet a.s.l. near the airstrip to over 4,000 feet a.s.l. on the upper part of Twelfth of July Creek.

Vegetation varies from "buck brush" in the open areas and as underbrush, to 2-foot diameter fir trees. Generally, the tree density is rather low.

HISTORY OF PREVIOUS WORK

Recent work on the property has largely been limited to the building of the airstrip, the building of the tote road up the two creeks, and some trenching.

The early work was done mainly between 1904 and 1914 when some shafts were sunk and some production was attained.

GEOLOGY

The area of the property is underlain by Yukon Complex Schist. Overlying this is boulder till which is overlain by recent gravels.

INSTRUMENTATION AND SURVEY PROCEDURE

The survey was carried out using an SIE Dresser 12-channel refraction seismograph amplifier system with a photo-recording oscillograph and 8-cycle per second geophones. The oscillograph records continuously on dry-write paper.

A 1100-foot geophone cable was used on this survey with 100-foot geophone spacings to map bedrock depths of 300 feet or less. A total of 8 seismic profiles were done. Five of these were 2,200 feet long consisting of two spreads, and are lines SL-A, SL-B and SL-D to SL-F. The remaining three were 1,100 feet long consisting of one spread and are lines SL-C, SL-G and SL-H.

For each spread, generally five shots were detonated; two off of each end, two at each end and one in the centre. On some spreads an extra shot was detonated within the spread if it was thought the overburden could vary laterally, i.e. water-soaked sands and gravels in the creek area and permafrost on on the hillside. Generally, the offend shots were detonated 400 feet offend, but some were detonated 1,000 feet offend in order to check for higher velocity refractors that may be bedrock underlying the permafrost.

The type of explosive used was DuPont 75% supergel which were detonated by seismocaps.

The depth of the shot holes varied from one foot to 2 1/2 feet depending upon whether or not frozen material was encountered. The shot size varied from 1 lb to 20 lbs.

COMPUTING METHOD

All seismic data were analyzed using an intercept-delay time technique. Implementation of this method requires reverse refraction profiles with bedrock refractions emanating from a common point for at least two detectors. This rock overlap is necessary in order to obtain a true refractor velocity and travel time in the overburden independent of bedrock dip and/or surface irregularities. The off-end shot times are used to extrapolate the rock refractions from either end back to their respective shot locations. With this information and related overburden velocities, it is possible to compute the depth to rock not only below each shot point but also below each detector. However, the computed depths below shot points should be considered slightly more accurate than those below detectors.

A detailed description of the delay time technique is given in the appendix.

DISCUSSION OF RESULTS

General:

Of all eight seismic profiles carried out, depth to bedrock could only be determined on two of these. These were SL-C and spread two of SL-E, or, in other words, the two spreads that were done on the south-facing slope of Twelfth of July Creek. On no other place was seismic work carried out on a south-facing slope and on no other place was the bedrock depth determined.

On the other lines and on spread 1 of SL-E,either a large depth to bedrock, and/or permafrost prevented the bedrock depth determination with the permafrost probably being the greatest determinant. On seismic refraction studies in general, and on this property in particular, permafrost affects the results in the following two ways:

1) Where the permafrost extends partly into the overburden and its velocity is less than that of the bedrock but greater than the non-permafrosted overburden. In this case, the actual bedrock depth will be greater than the calculated depth and the interface of the permafrosted overburden and the non-permafrosted overburden will not be seen since a high-velocity layer overlies a low-velocity layer. The calculated velocity will be somewhere between

the true velocity of the non-permafrosted overburden and the true velocity of the permafrosted overburden. It is possible this case may have occurred on SL-C and SL-E where the bedrock depth was determined. The error would not be too great, however, since the overburden velocity is relatively low.

2) Where the permafrost extends down to and perhaps into the bedrock and its velocity is close to or greater than that of the bedrock. In this case the bedrock depth cannot be determined even though it may be at quite a shallow depth. This possibility may have occurred on lines SL-A, SL-B, and SL-H. If not, then the bedrock depth would be greater than 400 feet.

On lines SL-D, SL-E, sp #1, SL-F, and SL-G, the actual bedrock depth could not be calculated but a depth of 300 feet or greater was estimated. The time-distance curves for these lines seemed to show the bedrock velocity but not enough geophones 'picked up' the bedrock refractor and therefore its depth could not be calculated.

The profiles are discussed in greater detail as follows:

SL-A (Figure 3)

On spread 1 occurs a 6,000 ft/sec layer with a thickness varying from 78 to 168 feet. This is a typical velocity for water-saturated sands and gravels. Underlying this layer is a 15,000 ft/sec zone that could be either permafrost or bedrock. On spread 2, is a very thin surface layer of 6,000 ft/sec material overlying a 15,800 ft/sec material that is felt fairly certain to be permafrost.

On this profile, if the bedrock has a velocity of 15,000 ft/sec and the permafrost, 15,800 ft/sec, then the bedrock would not be seen below spread 2, no matter how shallow it may be.

SL-B

This profile was not drawn since no seismic-interpretted depths could be given.

On the western end of this profile seems to be an unfrozen section of 6,000 ft/sec. Its roughly estimated thickness is 200 feet. The rest of the profile seems to be in permafrost with a velocity of 9,000 to 12,500 ft/sec.

SL-C (Figure 4)

Bedrock was encountered on this profile at depths varying from surface at the south end to 254 feet below geophone No. 3. Its velocity was calculated to be 15,000 and 16,000 feet/sec.

The overburden is largely a 4,000 ft/sec material that could be compacted sands and gravels, perhaps with a high clay content. Up to 20 feet thick of a loose surface material with a velocity of 2500 ft/sec overlies the 4000 ft/sec layer on the steep southern slope.

SL-D (Figure 5)

The center of this profile is in the area of Fourth of July and Twelfth of July creeks where a 6000 ft/sec layer extends to a depth of about 60 feet. This layer is probably water-saturated sands and gravels. Underlying this is a 11,400 feet/sec layer that quite likely is permafrost.

A 1000-foot offend shot was detonated on spread #2 and seemed to encounter a high velocity layer not encountered on the other shots. This layer is probably the bedrock and is estimated to be at a depth of about 400 feet.

SL-E (Figure 6)

Except for the creek area, Spread One is only a one-layer case with a velocity zone of 11,700 ft/sec that very likely represents permafrost. In the creek area, a water-saturated sand and gravel layer with a velocity of 5300 ft/sec extends to a depth of up to 75 feet.

A high velocity zone, probably bedrock, was encountered on one of the offend shots. This indicates an overburden thickness of over 400 feet.

Spread 2 encountered what is felt to be bedrock with a velocity of 14,600 ft/sec and at a depth varying from 154 to 245 feet.

The two overburden layers are 3300 and 6700 feet/sec respectively. The 3300 ft/sec layer may be sand and gravel or a looser version of the underlying 6700 ft/sec. layer which is probably a glacial till.

SL-F

Because of the permafrost, no seismic-interpretted depths could be calculated and therefore no profile was drawn.

This profile ran very close to camp.

The depth to the frozen layer below the creek is very shallow, probably only a few feet. This frozen layer extends over the whole profile and has a velccity of 8000 to 12,500 feet/sec.

Bedrock seemed to be reflected on the time-distance curves on the east and west ends of the spread at about a 300-foot depth or greater.

SL-G (Figure 7)

Bedrock was encountered on the end and offend shots having a velocity of 17,000 to 20,000 ft/sec and a depth of 250 to 300 feet.

In the creek area is a 3300 ft/sec layer of material, probably sand and gravels, with a thickness of up to 20 feet. Underlying this layer is 6600 ft/sec material that is probably glacial till. Its velocity is somewhat too low to be frozen muck. On either side of this material are zones of 8000 and 10,000 ft/sec material that probably is frozen muck.

SL-H (Figure 8)

This profile looks somewhat similar to that of SL-G except the velocities are higher.

Bedrock was not encountered at all on this line and therefore it could be at a depth of over 400 feet.

The creek material extends to about a 20-foot depth and has a velocity of 4,200 ft/sec. Below it is a zone of 8000 ft/sec material that is probably glacial till. On either side is permafrost with velocities of 13,300 and 15,400 feet/sec respectively.

VELOCITY CLASSIFICATION

A suggested velocity classification is as follows:

Velocity (ft/sec)	Classification
2,300 to 4,200	surface material
5,300 to 6,000	water-saturated sands and gravels
6,700 to 8,000	glacial till
8,000 to 15,800	frozen muck, permafrost
14,600 to 20,000	bedrock

Respectfully submitted,

GEOTRONICS SURVEYS LTD.,

David G. Mark
Geophysicist

July 15, 1976

SELECTED BIBLIOGRAPHY

Muller, J.E. Kluane Lake Map-Area, Yukon Territory (115G-115F E 1/2), Mem. 340, Geol. Surv. of Canada.

APPENDIX

A BRIEF DESCRIPTION OF SEISMIC REFRACTION DATA INTERPRETATION

Seismic profiling utilizes the varying velocities of wave propagation through differing media. Refraction techniques make use of that part of the energy which has been critically refracted along a velocity change interface (where the overlying velocity V_1 is lower than the underlying velocity V_2) and arrives first at a geophone.

After a shot has been taken, the time intervals between the "time break" (shot instant recorded on the record) and the first arrival of energy at each geophone, are measured to the nearest millisecond. These times are then plotted on a time distance graph (the distances being known from field measurement of geophone emplacement). A straight line, drawn as a best fit through these points, will show the number of velocities and corresponding layers present, and the inverse of the slope of the line will give its apparent velocity.

A simple 2-layer case, with material of velocity V_1 and thickness H, overlying a material V_2 (such that $V_2 > V_1$) and infinite thickness would be expected to produce a time distance graph, as follows (Fig. 1):

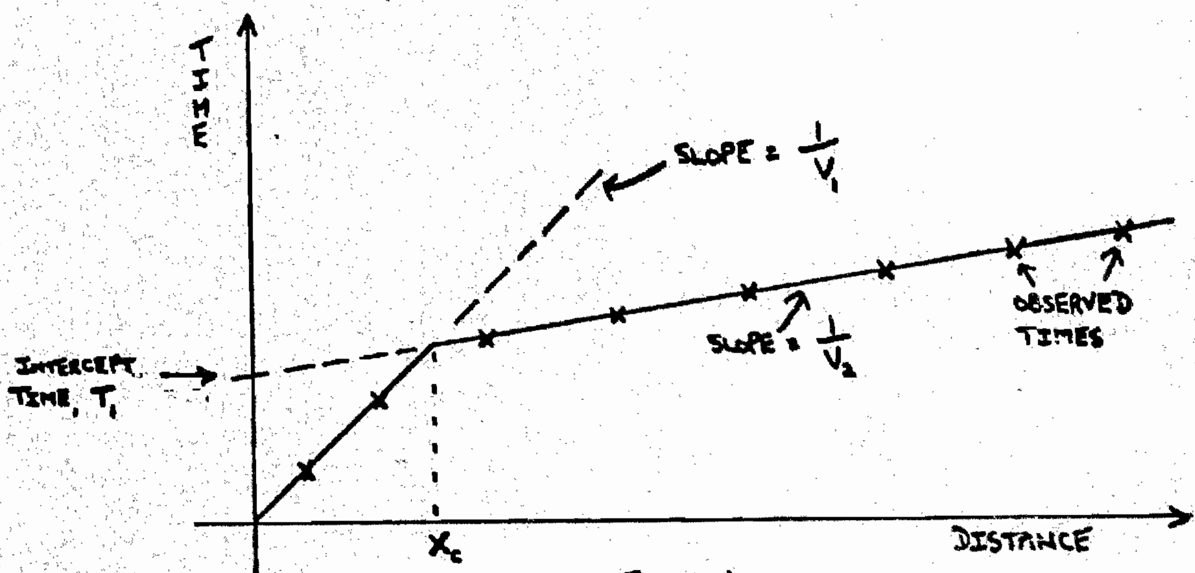


FIG. 1.

The first arrival of energy at geophones near to the shot will be direct energy through medium V_1. However, as $V_2 > V_1$, at a point marked X_c on the graph, called the critical distance, the direct wave will arrive simultaneously with energy that has been refracted through medium V_2. Thereafter, the first energy arrival will be that which has travelled through V_2. Apparent thickness H, of the material V_1, can be computed at the shot point using either the critical distance, X_c, or the intercept time, T_1, using the following formulae:

$$H = \frac{X_c}{2} \sqrt{\frac{V_2 - V_1}{V_2 + V_1}}$$

$$\text{or} \qquad H = \frac{T_1}{2} \frac{V_1 V_2}{\sqrt{V_2^2 - V_1^2}}$$

The apparent velocity for V_2 will not be a true velocity if the V_1-V_2 interface is dipping. It will be faster if shooting up-dip and slower if shooting down-dip. To alleviate this problem, it is usually necessary to shoot a reverse shot and obtain refracted arrival times from different directions at common geophones as in Fig. 2.

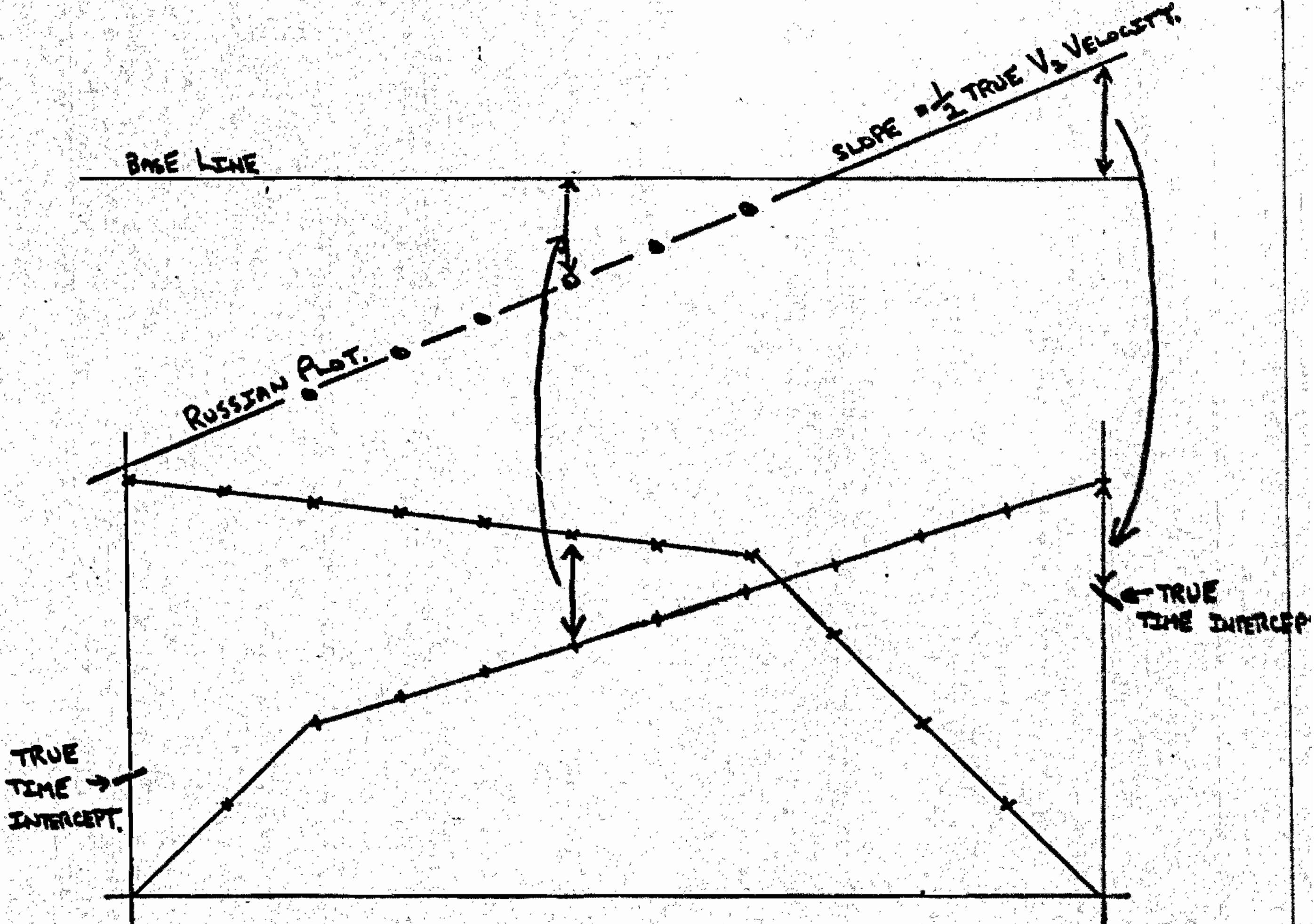


FIG. 2.

An averaging process, commonly called a "Russian", can then be applied to obtain a true V_2 and more accurate time intercepts, as illustrated.

Detailed computations, producing thicknesses of V_1 material beneath each geophone, is accomplished by using the same portion of the time distance graph as used for the "Russian" in a somewhat different way to plot a "delay" line, which is a plot of theoretical V_2 arrival times. Deviations of the recorded V_2 times from the theoretical V_2 times are measures of time spent in the V_1 layer. Thickness can be calculated using these times and the V_1 velocity.

The delay line construction is best illustrated by reference to the following diagram:

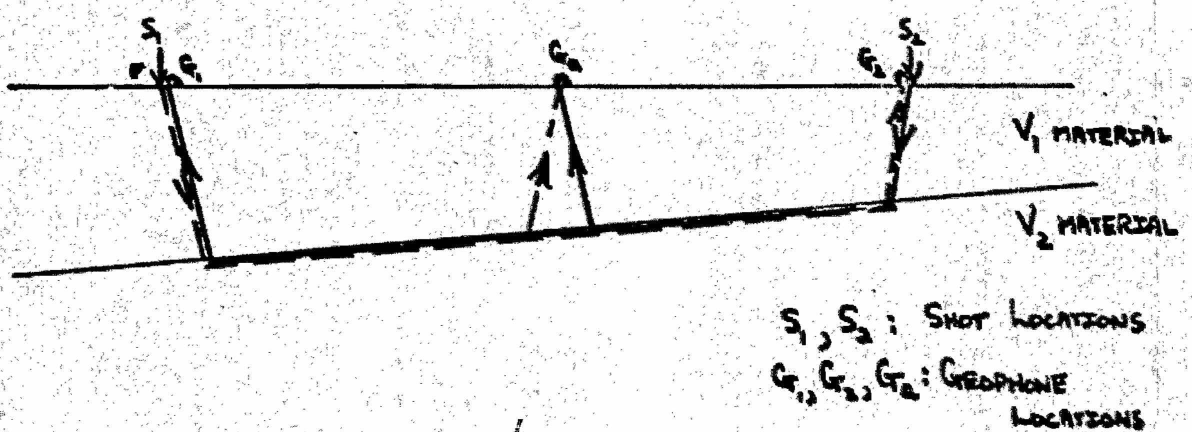


FIG. 3.

Travel time from S_1 to G_2 (and of necessity S_2 to G_1) is called the "total time".

At geophone G_a, time S_1 to G_a, plus time S_2 to G_a, minus the total time, divided by 2 will leave us with the time spent in travelling the distance from the V_1-V_2 interface to the geophone. This calculation can be repeated for those geophones receiving refracted energy from a common point beneath the geophone from shots in both directions. These times are then plotted to produce the following:

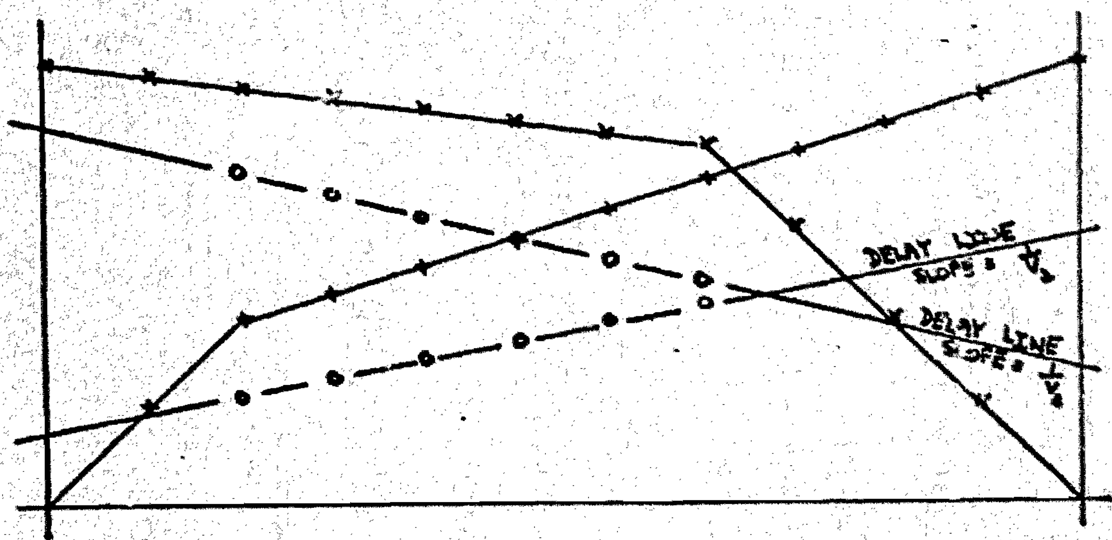
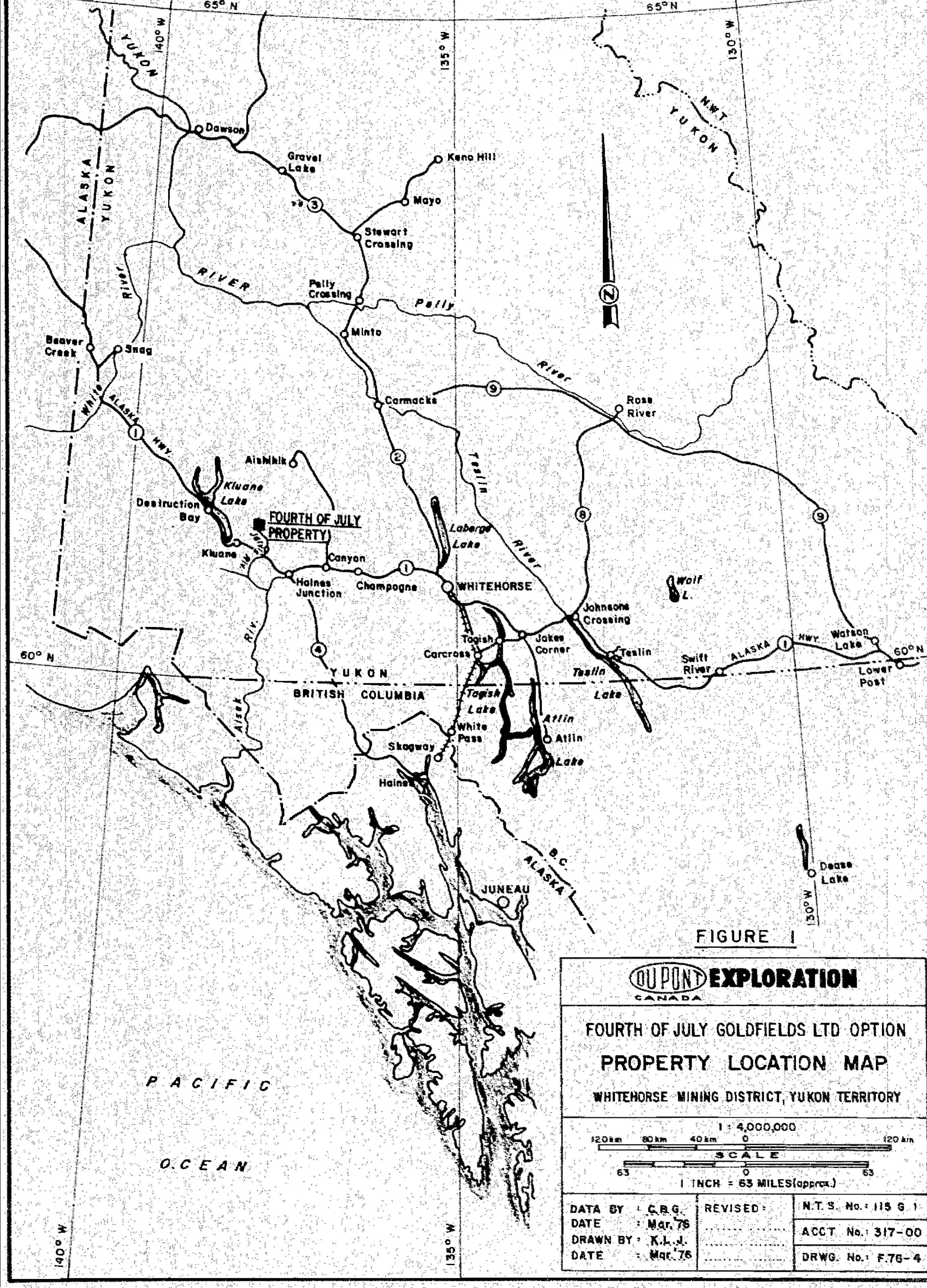


FIG. 4.

Those times not calculated can now be picked from the graph to provide detailed coverage over the whole line.

Additional shots are usually required to obtain detailed velocity information and, in some cases, to obtain overlap of V_2 information. The same procedure is used for multi-layer cases, with minor modifications for allocating time spent in the various velocity zones.



65° N
140° W
135° W
130° W
60° N
YUKON
ALASKA
NWT
Dawson
Gravel Lake
Keno Hill
Mayo
Stewart Crossing
Pelly Crossing
Pelly
RIVER
River
Minto
Beaver Creek
Snag
White
ALASKA HWY.
Carmacks
Ross River
Aishihik
Kluane Lake
Destruction Bay
FOURTH OF JULY PROPERTY
Kluane
Canyon
Champagne
Haines Junction
WHITEHORSE
Laberge Lake
Teslin
River
Wolf L.
Johnsons Crossing
Tagish
Jakes Corner
Carcross
Teslin
Teslin Lake
Swift River
Watson Lake
Lower Post
YUKON
BRITISH COLUMBIA
Tagish Lake
Atlin Lake
Atlin
White Pass
Skagway
Haines
Alsek
Riv.
B.C.
ALASKA
JUNEAU
Dease Lake
PACIFIC
OCEAN
FIGURE 1
DU PONT EXPLORATION CANADA
FOURTH OF JULY GOLDFIELDS LTD OPTION
PROPERTY LOCATION MAP
WHITEHORSE MINING DISTRICT, YUKON TERRITORY
1 : 4,000,000
120 km 80 km 40 km 0 120 km
SCALE
63 0 63
1 INCH = 63 MILES (approx.)
DATA BY : C.R.G.
DATE : Mar. 76
DRAWN BY : K.L.J.
DATE : Mar. 76
REVISED :
N.T.S. No.: 115 G 1
ACCT. No.: 317-00
DRWG. No.: F.76-4

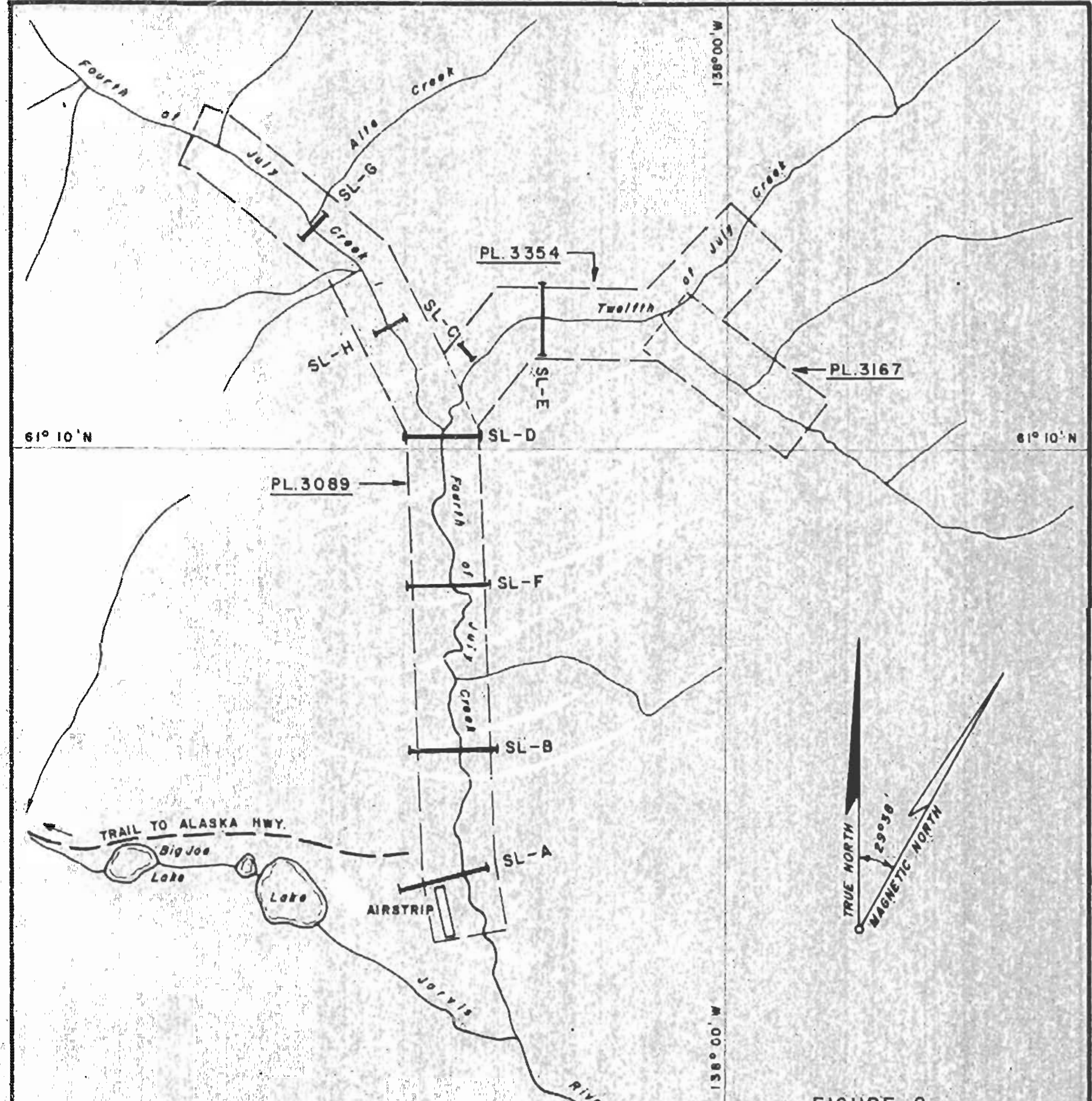


FIGURE 2

LEGEND

PLACER LEASE BOUNDARY

SEISMIC PROFILE

DUPONT EXPLORATION CANADA

FOURTH OF JULY GOLDFIELDS LTD OPTION

SEISMIC SURVEY - 1976

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

1 : 5,000

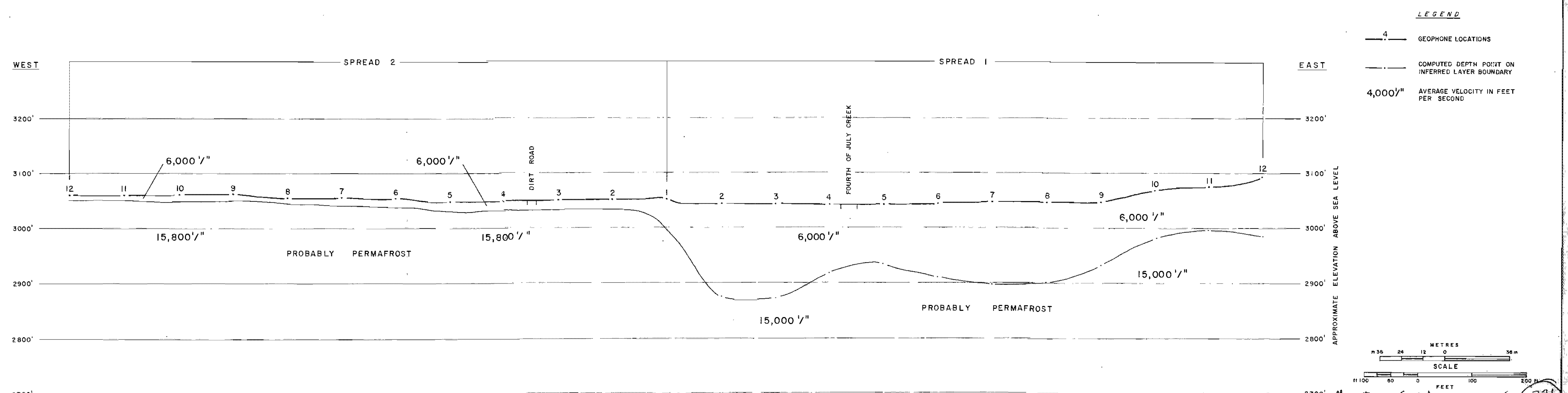
1500m 1000m 500m 0 1500m

SCALE

0

1 INCH = FEET

DATA BY : C.B.G. DATE : June 76 DRAWN BY : K.L.J. DATE : June 76	REVISED:	N.T.S. No.: 115 G 1 ACCT No.: 317-00 DRWG. No.: F.76-5



Map#115-G-1 Doc#120008 321

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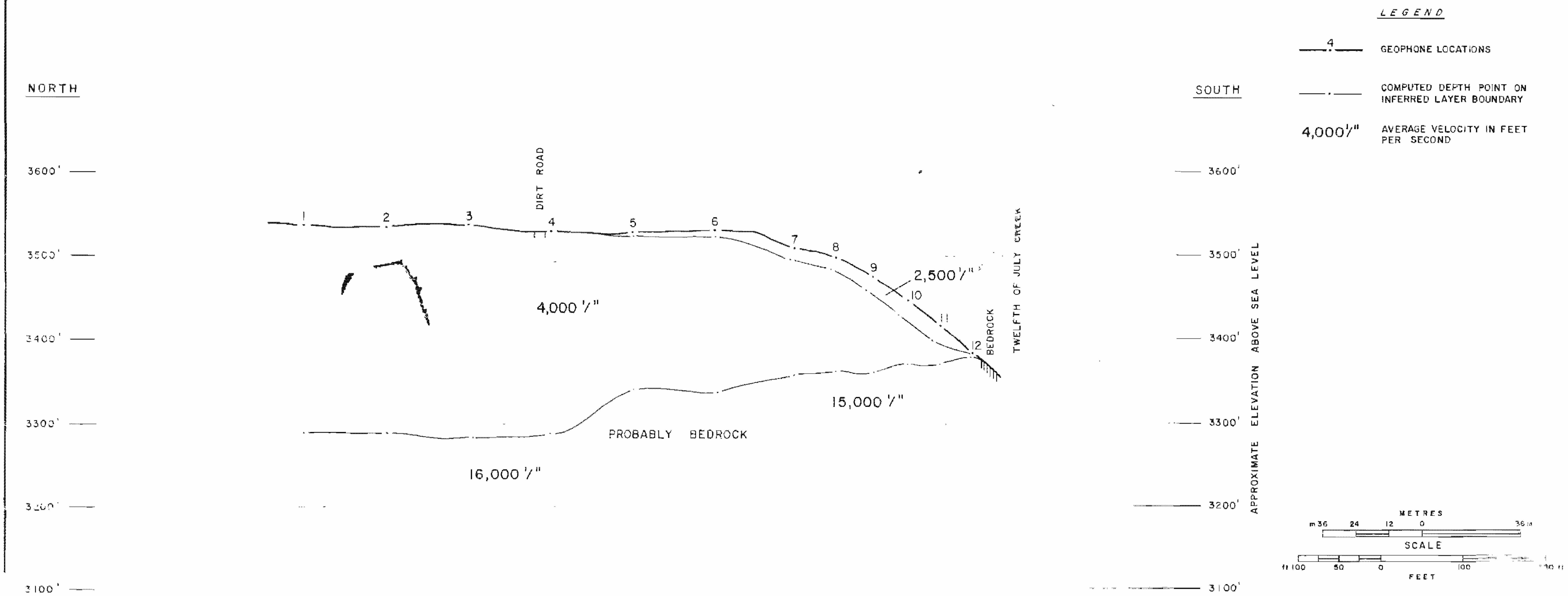
DU PONT OF CANADA EXPLORATION LIMITED
FOURTH OF JULY GOLDFIELDS LTD OPTION
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SEISMIC REFRACTION STUDY
LINE SL - A

DRAWN BY:	DATE:	JOB No.:	SCALE:	FIG No.:
K.L.J.	JUNE '76	76-26	1" = 100'	3



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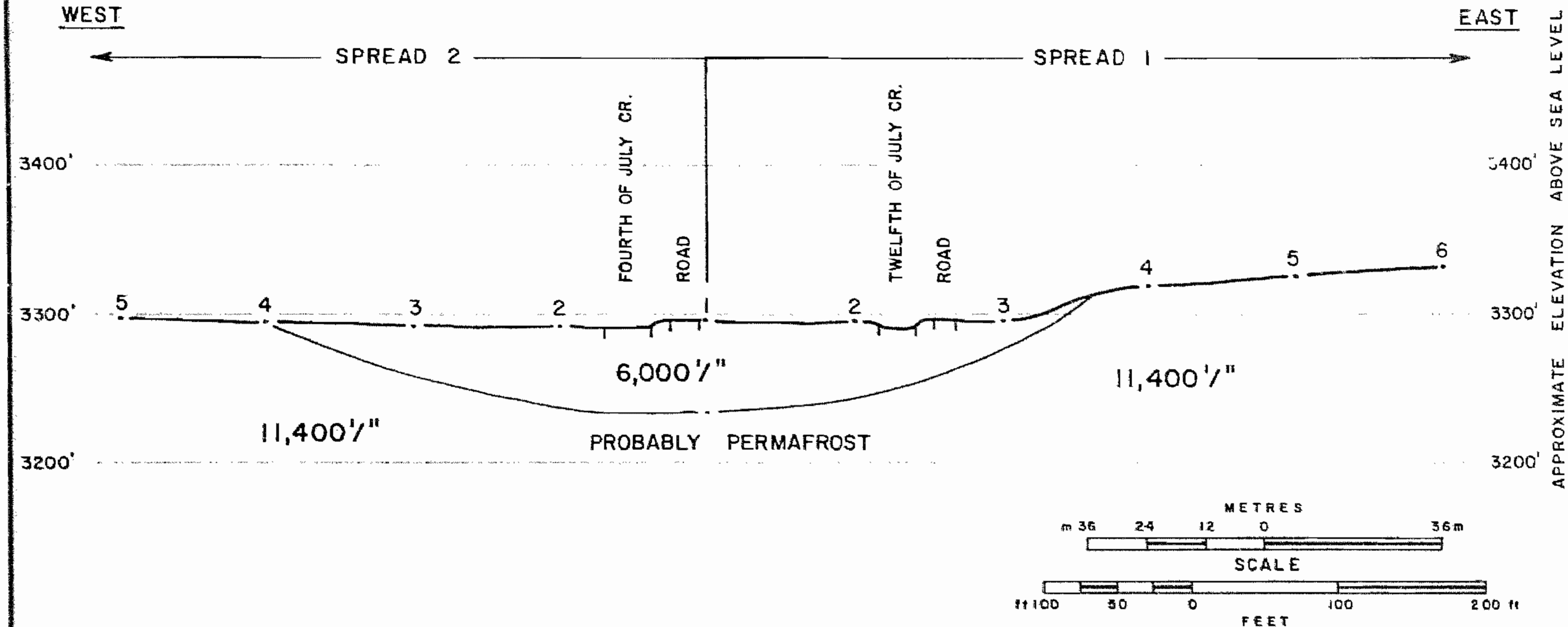
SEISMIC REFRACTION STUDY
LINE SL - C

DRAWN BY:	DATE:	JOB No.:	SCALE:	FIG No.:
K.L.J.	JUNE '76	76-26	1" = 100'	4



LEGEND

4 — GEOPHONE LOCATIONS

COMPUTED DEPTH POINT ON INFERRED LAYER BOUNDARY

4,000'/" AVERAGE VELOCITY IN FEET PER SECOND

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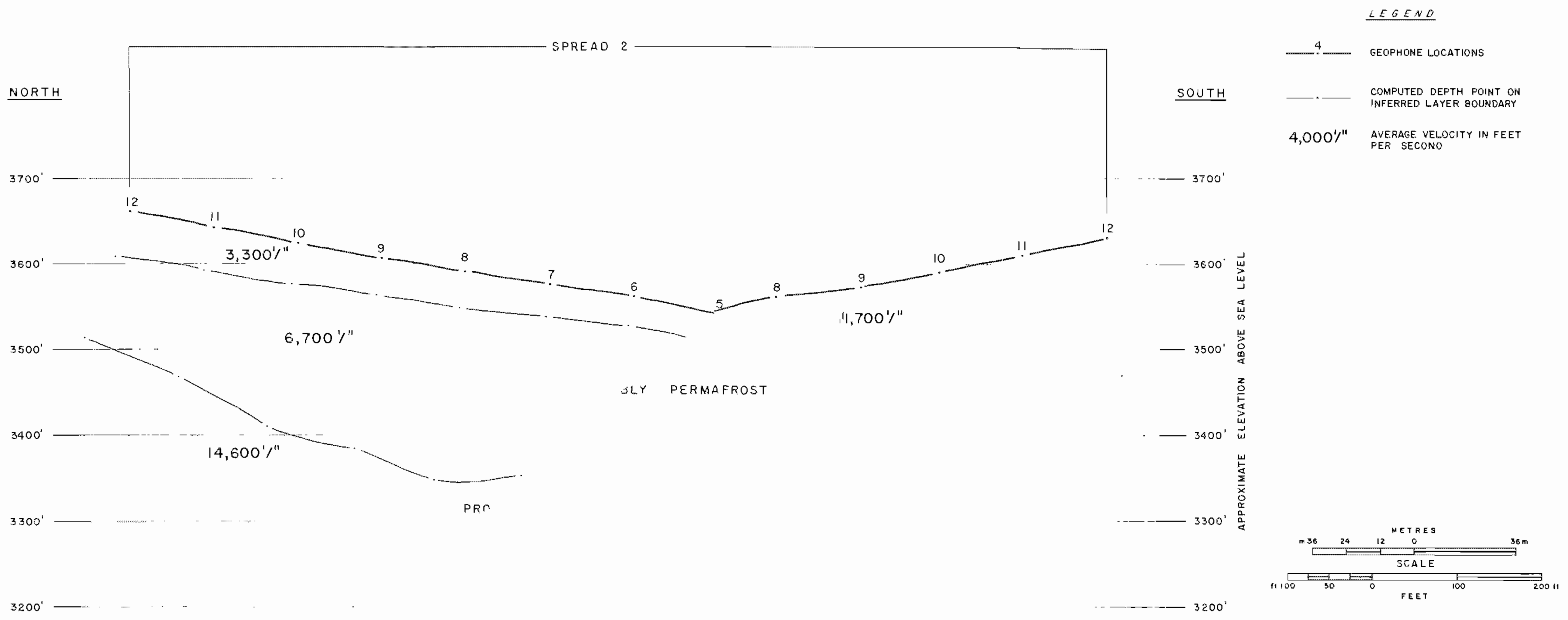
FOURTH OF JULY GOLDFIELDS LTD OPTION
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SEISMIC REFRACTION STUDY
LINE SL - D

DRAWN BY:	DATE:	JOB No.:	SCALE:	FIG No.:
K.L.J.	JULY '76	76-26	1" = 100'	5



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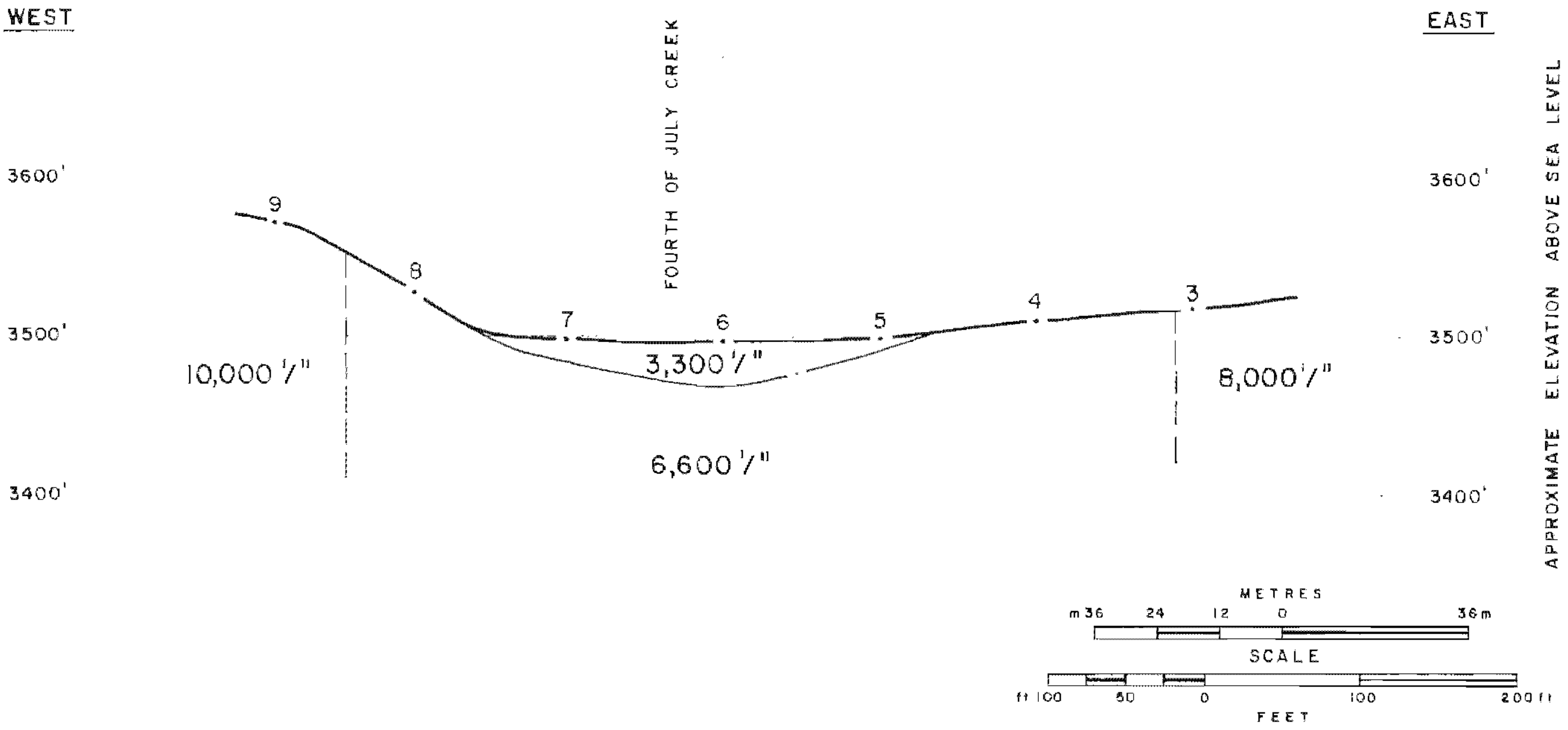
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SEISMIC REFRACTION STUDY
LINE SL - E

DRAWN BY:	DATE:	JOB No.:	SCALE:	FIG No.:
K.L.J.	JUNE '76	76 - 26	1" = 100'	6



LEGEND

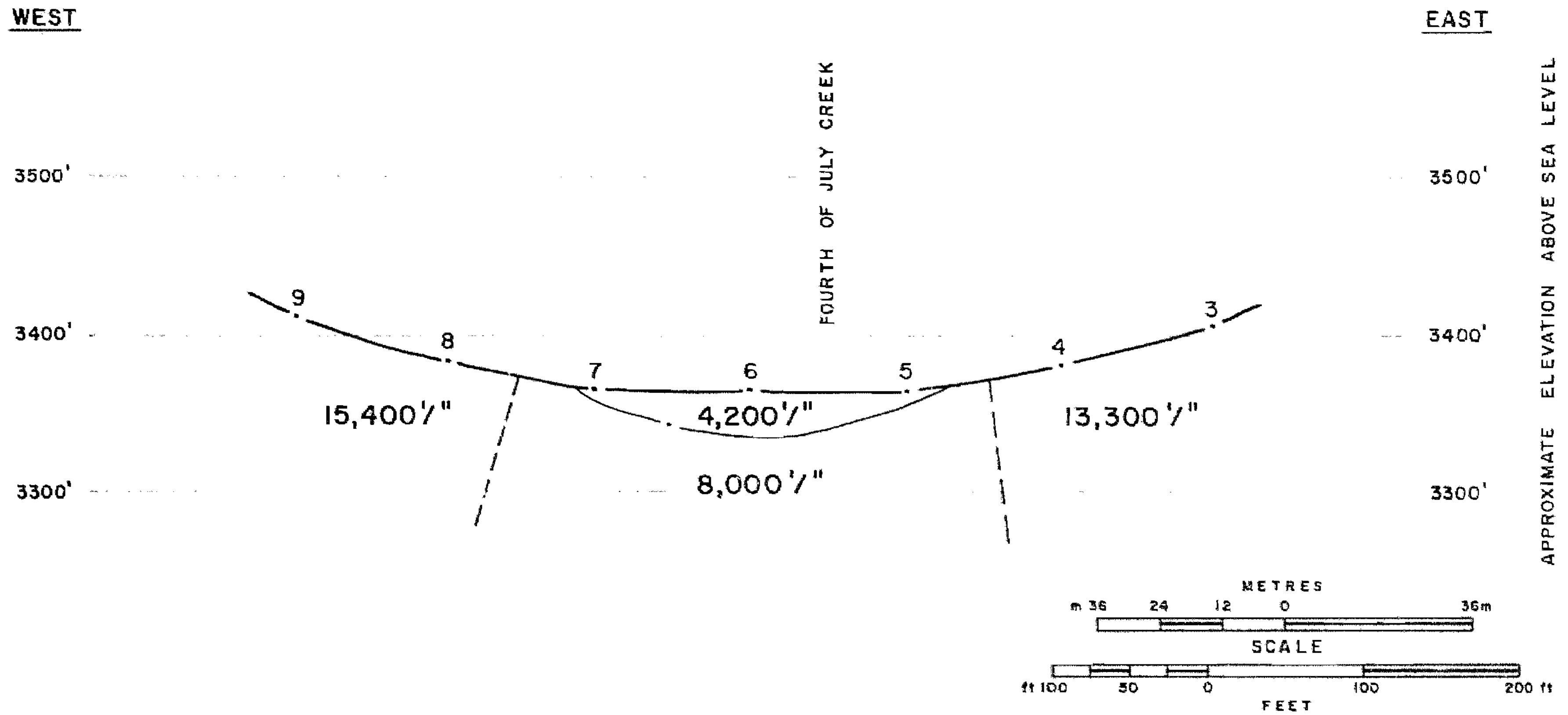
4	GEOPHONE LOCATIONS
	COMPUTED DEPTH POINT ON INFERRED LAYER BOUNDARY
4,000'/"	AVERAGE VELOCITY IN FEET PER SECOND

GEOTRONICS SURVEYS LTD.

DU PONT OF CANADA EXPLORATION LIMITED
FOURTH OF JULY GOLDFIELDS LTD OPTION
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SEISMIC REFRACTION STUDY
LINE SL - G

DRAWN BY:	DATE:	JOB No.:	SCALE:	FIG No.:
K.L.J.	JULY '76	76 - 26	1" = 100'	7



LEGEND

4 GEOPHONE LOCATIONS

COMPUTED DEPTH POINT ON INFERRED LAYER BOUNDARY

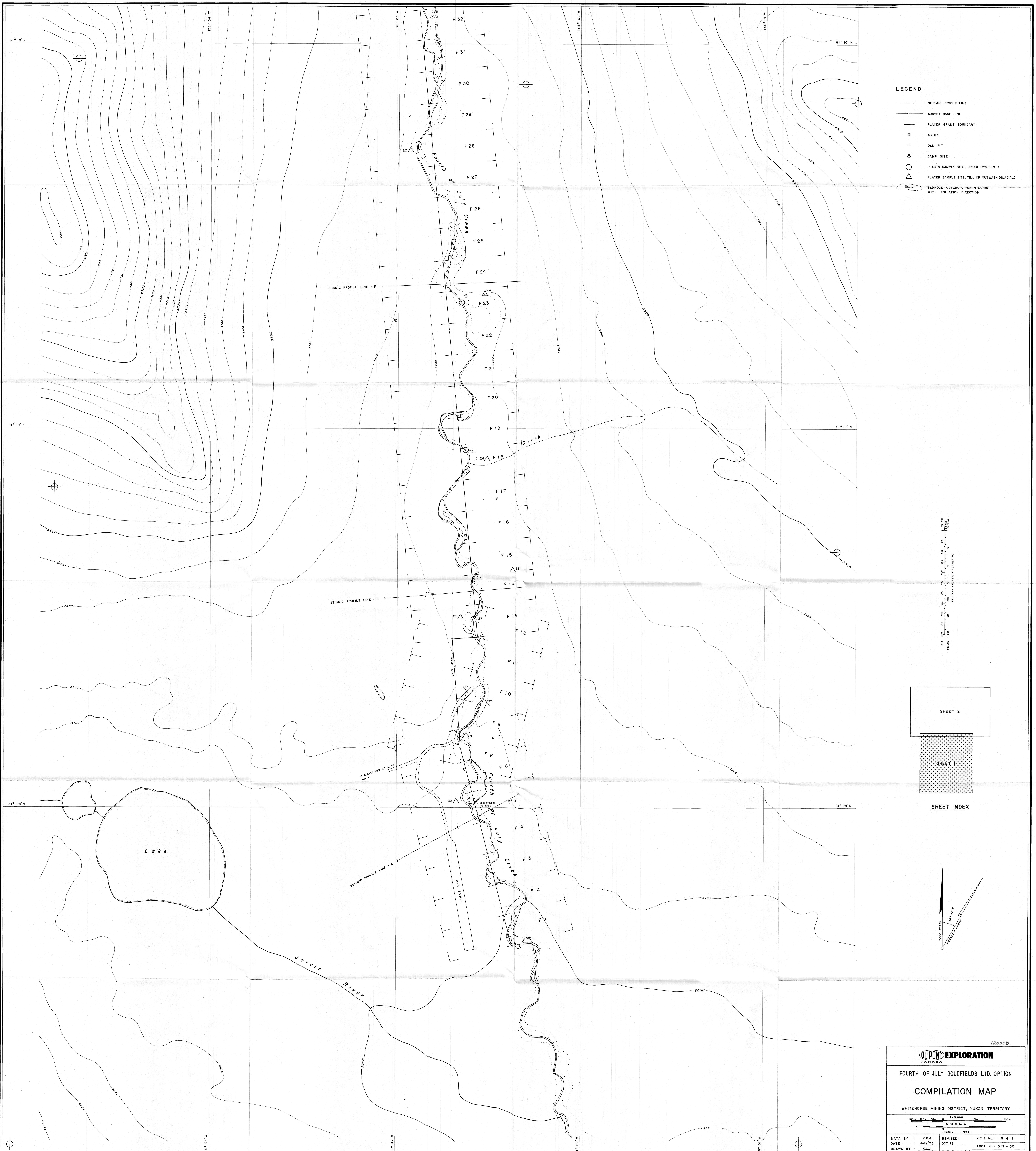
4,000'/" AVERAGE VELOCITY IN FEET PER SECOND

GEOTRONICS SURVEYS LTD.

DU PONT OF CANADA EXPLORATION LIMITED
FOURTH OF JULY GOLDFIELDS LTD OPTION
WHITEHORSE MINING DISTRICT, YUKON TERRITORY

SEISMIC REFRACTION STUDY
LINE SL - H

DRAWN BY:	DATE:	JOB No:	SCALE:	FIG No:
K.L.J.	JULY '76	76-26	1" = 100'	8



LEGEND
SEISMIC PROFILE LINE
SURVEY BASE LINE
PLACER GRANT BOUNDARY
CABIN
OLD PIT
CAMP SITE
PLACER SAMPLE SITE, CREEK (PRESENT)
PLACER SAMPLE SITE, TILL OR OUTWASH (GLACIAL)
BEDROCK OUTCROP, YUKON SCHIST, WITH FOLIATION DIRECTION
Fourth of July Creek
Creek
Lake
Jarvis River
SEISMIC PROFILE LINE - F
SEISMIC PROFILE LINE - B
SEISMIC PROFILE LINE - A
AIR STRIP
BASE LINE
SHEET 2
SHEET 1
SHEET INDEX
61° 10' N
61° 09' N
61° 08' N
120008
DU PONT EXPLORATION
CANADA
FOURTH OF JULY GOLDFIELDS LTD. OPTION
COMPILATION MAP
WHITEHORSE MINING DISTRICT, YUKON TERRITORY
1 : 5,000
SCALE
1 INCH = FEET
DATA BY : C.B.G.
DATE : July '76
DRAWN BY : K.L.J.
DATE : July '76
REVISED : OCT. '76
N.T.S. No.: 115 G 1
ACCT No.: 317 - 00
DRWG No.: F. 76 - 9

SHEET 1 OF 2

Fourth of July Creek
Twelfth of July Creek
Snyder Creek
Alie Creek
Creek
SEISMIC PROFILE LINE - G
SEISMIC PROFILE LINE - H
SEISMIC PROFILE LINE - C
SEISMIC PROFILE LINE - E
SEISMIC PROFILE LINE - D
PL. 3354
PL 3167*
* APPLICATION MADE FOR CONVERSION TO GRANTS, AUGUST 1976.
61° 12' N
61° 11' N
61° 10' N
F 31
F 32
F 33
F 34
LEGEND
SEISMIC PROFILE LINE
SURVEY BASE LINE
PLACER GRANT BOUNDARY
CABIN
OLD PIT
CAMP SITE
TAILINGS
PLACER SAMPLE SITE, CREEK (PRESENT)
PLACER SAMPLE SITE, TILL OR OUTWASH (GLACIAL)
BEDROCK OUTCROP, YUKON SCHIST, WITH FOLIATION DIRECTION
CONVERSION SCALE FOR ELEVATIONS
SHEET 2
SHEET 1
SHEET INDEX
120008
DU PONT EXPLORATION
CANADA
FOURTH OF JULY GOLDFIELDS LTD. OPTION
COMPILATION MAP
WHITEHORSE MINING DISTRICT, YUKON TERRITORY
1 : 5,000
150m 100m 50m 0 150m 300m
SCALE
1 INCH = FEET
DATA BY : C.B.G.
DATE : July '76
DRAWN BY : K.L.J.
DATE : July '76
REVISED : OCT. '76
N.T.S. No.: 115 G 1
ACCT No.: 317 - 00
DRWG No.: F. 76 - 10

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