SEISMIC TESTING REPORT

Lee Creek

Placer Disc Cook Claim #P30233

NTS 116B-01

Prepared for

Owner: Sylvain Montreuil
Box 1012
Dawson City, Yukon
YOB 1GO

and

Fieldsman: Scott Cone
Box 964
Dawson City, Yukon
YOB 1GO

~~~

Prepared by
Ted Sandor
RR1 Site 20 Comp 121
Whitehorse, Yukon
Y1A 4Z6
(Phone/Fax 667-6193 [403])

June 12, 1991
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This report has been examined by the Geological Evaluation Unit under Section 41 Yukon Placer Mining Act and is recommended as allowable representation work in the amount of $ 756.00

Chief Geologist, Exploration and Geological Services Division, Northern Affairs Program for Commissioner of Yukon Territory.

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ASSESSMENT REPORT

on June 12, 1991

Seismic Survey

on Lee Creek

Placer Disc Cook Claim #P30233

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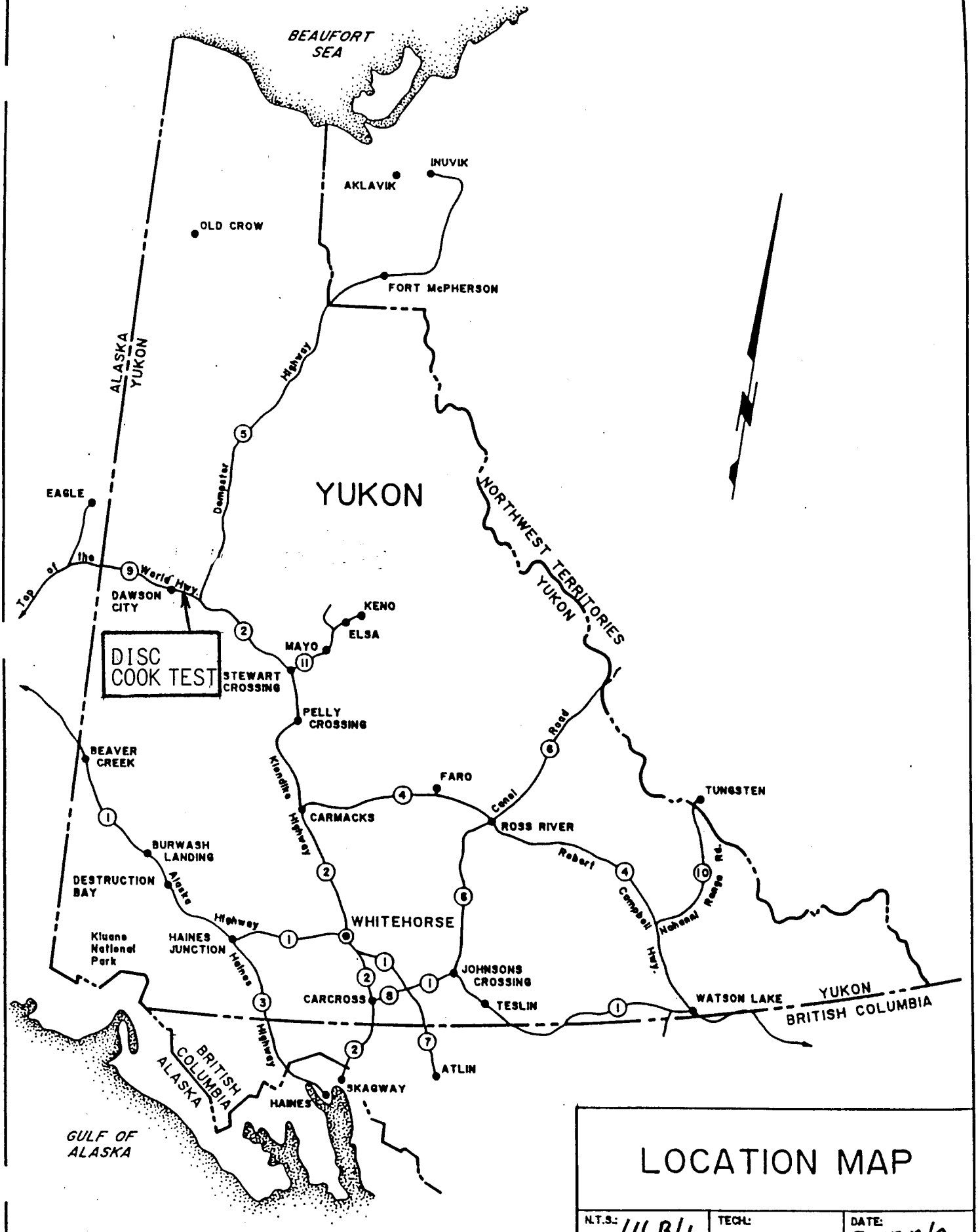
1. INTRODUCTION

On June 12, 1991, a seismic survey was conducted on the Disc Cook Placer Claim #P30233 for the owner Sylvain Montreuil by fieldsman Scott Cone.

Scott Cone, using a compass and hip chain, located three (3) test sites on the downstream side of the claim. Cross channel test locations were marked with flagging and labelled (see Fig. C)

The seismic consultant, Ted Sandor, processed field recordings and interpreted the data received.



LOCATION MAP

N.T.S.: 116B/1	TECH:	DATE: JUNE 12/91
SCALE: 1"=12.5mi.	DRAFTING: HANDESIGN	FIGURE: A

(Joins Medrick Creek 115-O/16)

LEE CREEK
YUKON TERRITORY

Compiled, 1960, by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF MINES AND TECHNICAL SURVEYS, from air photographs taken in 1951. Field surveys 1948 and 1955. Printed 1964.

Copies may be obtained from the Map Distribution Office, Department of Mines and Technical Surveys, Ottawa.

LOCATION MAP 116B/1
June 12,1991
Fig. B

SCALE 1:50,000 ÉCHELLE

Miles 1 0 1 2 3 Milles

Metres 1000 500 0 1000 2000 3000 4000 Mètres

Yards 1000 500 0 1000 2000 3000 4000 Verges

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES: 100 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer
Réseau géodésique nord-américain unifié (1927)
Projection transverse de Mercator

MAGNETIC DECLINATION 33°14′ EAST
AT CENTRE OF MAP 1964
Annual change (decreasing) 3.9′

DÉCLINAISON MAGNÉTIQUE AU CENTRE
DE LA FEUILLE EN 1964: 33°14′ EST
Variation annuelle (décroissante) 3.9′

CONVERSION SCALE FOR ELEVATIONS

Metres

Feet

NATIONAL
SYSTÈME DE RÉFÉRENCE CART(

Roads:	Routes:
all weather	toute saison
dry weather	période sèche
cart track	de terre
trail or portage	sentier ou portage
Railway, normal gauge, single track	Chemin de fer, voie unique (écartement normal) — siding / voie d'evitement — station / gare
Power transmission line	Ligne de transport d'énergie
Mine or Open cut	Mine ou fosse à ciel ouvert
Horizontal control point, with elevation	Point géodésique avec cote 454
Bench mark, with elevation	Repère de nivellement avec cote BM 157

Building	Bâtiment	Barn	
School	École	Post Office	
Church	Église	Cemetery	
Lighthouse	Phare		
River with bridge	Rivière avec pont		
Stream, intermittent or dry	Cours d'eau intermittent, ou à sec		
Lake intermittent, indefinite	Lac intermittent, rive imprécise		
Marsh or Swamp	Marais ou marécage		
Depression contours	Courbes de cuvette		

GRID ZONE DESIGNATION: 7 W

100,000 M. SQUARE IDENTIFICATION: 71 FB FA

TO GIVE A REFERENCE TO NEAREST 100 METRES

EXAMPLE STREAM JUNCTION

EASTING: Read number on grid line immediately to left of point 34; Estimate tenths of a square from this line eastward to point 7; 347

NORTHING: Read number on grid line immediately below point 15; Estimate tenths of a square from this line northward to point 3; 153

MAP REFERENCE 347153

ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 7

BLACK NUMBERED TICKS INDICATE THE 1000 METRE U.T.M. GRID

R-7

LEE

DAM

2000

3 SEISMIC TEST SHOTS

DISC COCK IV P30233

1 2 3

DAM

Creek

Laura

5 MILE

PL8512

FLEE

EEL

LEE

ELE

YB30029 YB30027 YB30025 YB30023 YB30021 YB30019 YB30017 YB23967 YB23966 YB23992 YB23994 YB04515

YB30028 YB30026 YB30024 YB30022 YB30020 YB30018 YB30016 YB23990 YB04517

YB23920 YB23918 YB23916 YB23914 YB23912 YB23910 YB23908 YB23212 YB23210 YB23208 YB04516 YB04514

YB23919 YB23917 YB23915 YB23913 YB23911 YB23909 YB23907 YB23211 YB23209 YB23207 YB04501

YB23352 YB23350 YB23348 YB23346 YB23344 YB23342 YB23340 YB23338 YB23336 YB23334 YB17701 YB17703 YB04500

YB23351 YB23349 YB23347 YB23345 YB23343 YB23341 YB23339 YB23337 YB23335 YB23333 YB17700 YB17705

YB23332 YB23330 YB23328 YB23326 YB23324 YB23322 YB23320 YB23318 YB23316 YB23314 YB17704 YB17707

YB23331 YB23329 YB23327 YB23325 YB23323 YB23321 YB23319 YB23317 YB23315 YB23313 YB17706

YB39528 YB39529 YB39526 YB39527 YB39524 YB39525 YB39522 YB39523 YB39520 YB39521 YB39518 YB39519 YB39516 YB39517

YB23354 YB23356 YB23355 YB23358 YB23357 YB23360 YB23359 YB23362 YB23361 YB23364 YB23363

YB23785 YB23786 YB23788 YB23789 YB23790 YB23836 YB17724 YB17725

116B-1

QUARTZ & PLACER

LATITUDE 64°00' TO 64° 15'
LONGITUDE 138° 00' TO 138° 30'

ISSUED UNDER THE AUTHORITY OF THE MINISTER
OF
INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

WORK DETAILED CLAIM MAP JUNE 12,1991
Fig. C SCALE 1:30,000 DRAFT. Ted Sandor

1000 0 1000 2000
METRES METRES

1500 0 1500 3000 4500 6000 7500 9000 10500
FEET FEET

30'

25'

JUNE 12.1991
Fig. D

MAP 1284A

GEOLOGY

DAWSON

YUKON TERRITORY

Scale 1:250,000

Miles 4 0 4 8 12 Miles

Kilometres 6 0 6 12 18 Kilometres

Magnetic declination 1970 varies from 31°33' easterly at centre of west edge to 33°17' easterly at centre of east edge. Mean annual change decreasing 3.7'

Elevations in feet above mean sea-level

Base-map at the same scale published by the Surveys and Mapping Branch in 1954, 1957 and 1958. Roads were revised by the Geological Survey of Canada for this edition

Any revisions or additional information known to the user would be welcomed by the Geological Survey of Canada

Copies of the topographical edition of this map may be obtained from the Map Distribution Office, Department of Energy, Mines and Resources, Ottawa

The following names have not been approved by the Canadian Permanent Committee on Geographical Names: Trace Hill, McCann Hill, Porcupine Hill, Woodchopper Creek, Monster River, East Blackstone River, Spotted Fawn Gulch

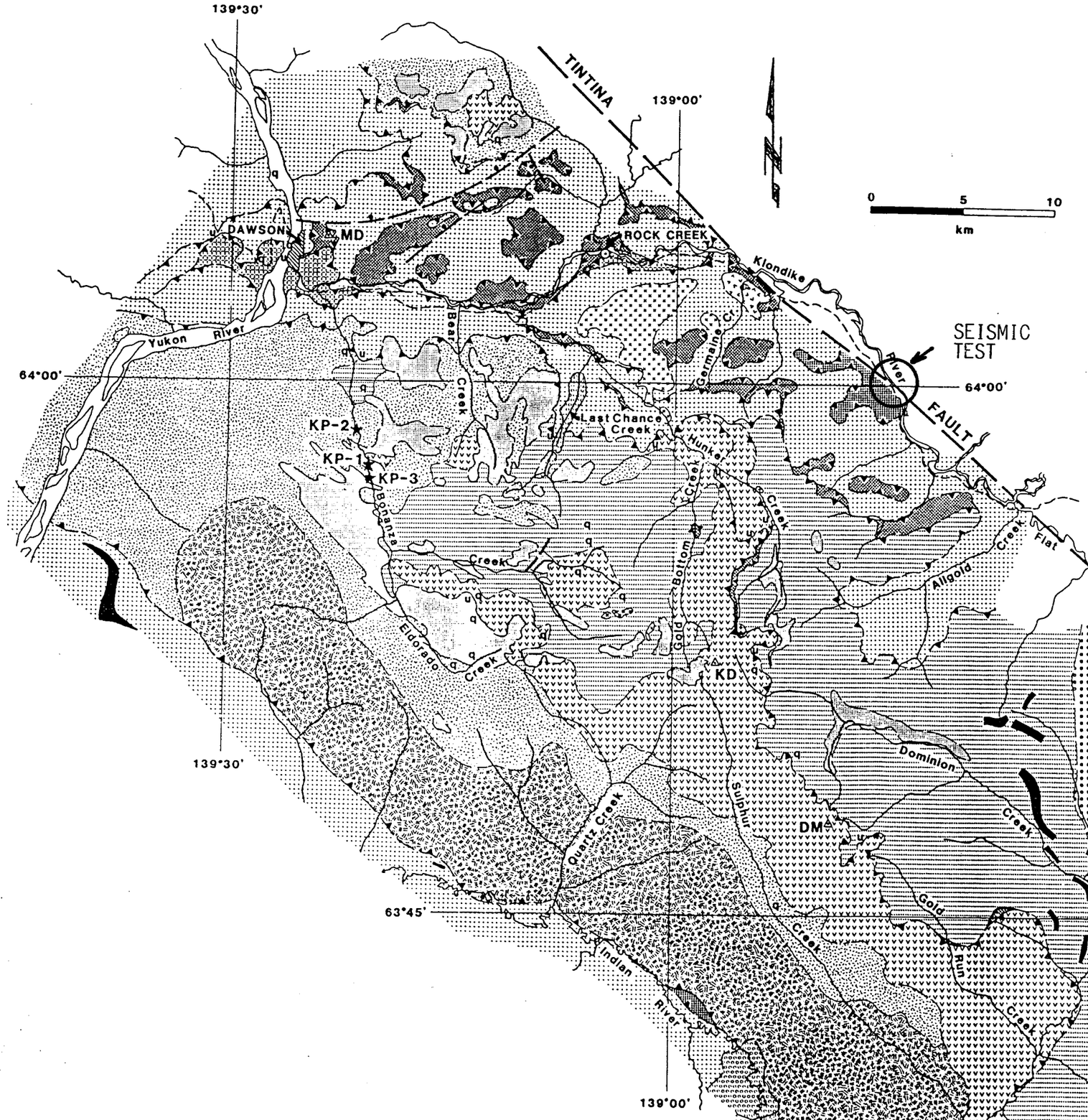
116 G-116 F(E 1/2)	116 H	106 E
116 B-116 G(E 1/2) 1284A	116 A 1283A	106 1282A
115-O-115 N(E 1/2) 711A	115 P 1143A	105 890A

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO GEOLOGICAL SURVEY OF CANADA MAPS

DAWSON
YUKON TERRITORY

SEISMIC TEST

Printed by the Surveys and Mapping Bra



LEGEND

- quartz-feldspar porphyry (Eocene)
- felsic lapilli tuff, includes sandstone and conglomerate
- plagioclase-phyric basalt, diabase, minor gabbro
- hornblende-biotite granodiorite (late Cretaceous-Paleocene)
- interbedded siltstone, sandstone, and andesitic flows (± sills)

SMT
- massive greenstone, minor diabase
- serpentinite, carbonatized serpentinite, talc-carbonate schist

YTT
- felsic schist (muscovite and quartz-muscovite schist)(Permian)(I, II)
- chloritic schist (quartz-chlorite (± actinolite, biotite, feldspar) schist locally includes minor metagabbro and amphibolite (I, II, III)
- foliated metagabbro (I)
- micaceous and chloritic quartzite and feldspathic quartzite (I, II)
- carbonaceous quartz-muscovite (± biotite) phyllite and schist, includes minor chloritic schist (I, II, III)
- medium-grained marble and calcite-muscovite-quartz schist (II, III)
- quartz-augen schist (quartz ± feldspar augen-bearing quartz-muscovite schist)(Permian) (I)
- biotite-bearing quartz monzonitic orthogneiss (Sulphur Creek orthogneiss)(Permian) (I)
- medium-grained quartz dioritic orthogneiss (II?)
- feldspar augen-bearing granitic orthogneiss (Mt. Burnham orthogneiss)(late Dev.-early Miss.)

- lithological contact (definite, approximate)
- thrust fault (definite, approximate)
- steep fault (definite, approximate)
- u altered ultramafic occurrence
- q quartz-feldspar porphyry occurrence
- highway

GEOCHRONOLOGY OF THE KLONDIKE DISTRICT, WEST CENTRAL.

J. K. MORTENSEN. REV. 1990

Fig. E

2. SURVEY

2.1 Location and Access

The Disc Cook Claim P#30233 is located just north of the mouth of Lee Creek where it drains from the north into the south Klondike River. Forty-five miles east of Dawson City by road.

Access to the test site was by 4x4 pickup. Testing was done on foot. (See access map)

2.2 Claim Information

Name	Placer Claim Number	Owner
Disc Cook	P 30233	Sylvain Montreuil

Claim Sheet 116B-1

3. PERSONNEL

Scott Cone surveyed, marked, measured, expedited and carried out the field work.

Ted Sandor supervised the quality, directed the data processing and prepared the report.

Flora Evans assisted with the word processing.

4. GEOLOGY

This property consists of Klondike River unconsolidated glacial and alluvial deposits. Lee Creek comes out of Road River Formation, mainly interbedded black chert and black argillite, also grey-green, olive-green, grey chert, grey-green argillite, minor quartzite, and chert pebble conglomerate. (See Geology maps D and E.)

5. INSTRUMENTATION

Directional Electret Microphone
800 OHMS 30 - 18,000 Hz Response

Panasonic Magnetic Tape Recorder Model #RQ-L335
Frequency Range: 180 - 7,000 Hz
Tape Speed: 4.8 cm/s (1-7/8 I.P.S.)
Track System: 2-track monaural, recording and playback
16 ga. shotgun, 1-1/8 oz. shot, #7-1/2 shot

Software:
Sound Filler St. Visual Sample Editor
Requires TOS in ROM

Akai Professional S700 Digital Sampler
12-Bit Sampling
Sampling Frequency: 4KHZ - 40 KHZ
Sampling Time: 8 Sec. - 08 Sec.
Frequency Response: 25 Hz - 16 KHz
Atari 520 St. Computer
Processor: MC6800, 32 Bit Internal,
16-Bit External Architecture
8 MHz clock frequency.
Memory: 524,288 Bytes of RAM; 196,608 Bytes of ROM
Keyboard: 94-key Intelligent keyboard, using 6301 Microprocessor
Storage Medium: 3-1/2 inch, Microfloppy disk;
Single-Side, Double Density;
135 Tracks per inch
Data Transfer
Speed: 250 Kilobits per second
Atari Sc. 1224 RGB Colour Monitor
Seikosha SP-1600 Dot Matrix Printer
Printing Method:Impact Dot Matrix Bidirectional Logic
Seeking Printing
Print Head: 9 Pins

6. THEORY

This report is intended as a guide to the application of seismic refraction and reflection techniques to shallow, subsurface exploration of engineering sites. Many civil engineers and geologists have some acquaintance with this basic geophysical tool, but few apply it frequently. The primary purpose of the report is to provide the reader with a working knowledge of the method, with a convenient reference, and further, with a basis to judge the applicability of the method and the results to his particular exploration problem.

Solid state electronics have improved the portability of engineering-type refraction and reflection instruments, but they operate fundamentally in the same way they did 50 years ago. The basic field practices and methods of interpreting the data have not changed with time, although specialized interpretational techniques have been proposed and developed for some difficult cases.

The conduct of refraction and reflection surveys and the interpretation of the data are well-established and reasonably straight forward, although they are not invariant. The user can change the field layout of his equipment and apply judgement and imagination in his handling of the raw data. In common with other indirect methods of subsurface exploration, there are no rigid inflexible approaches to making sense of the data, nor are there any handbooks that infallibly direct the engineer, geologist or geophysicist to the correct answer. The general case will require thought and care: ambiguities and uncertainties are not uncommon. Some foreknowledge of the site conditions and an understanding of what is geologically plausible will always assist in resolving the raw data into meaningful information.

Figure 1 shows a refraction survey. This method could be quite costly and require complicated data processing should multiple layers of soil and gravels be encountered.

6. THEORY CONTINUED

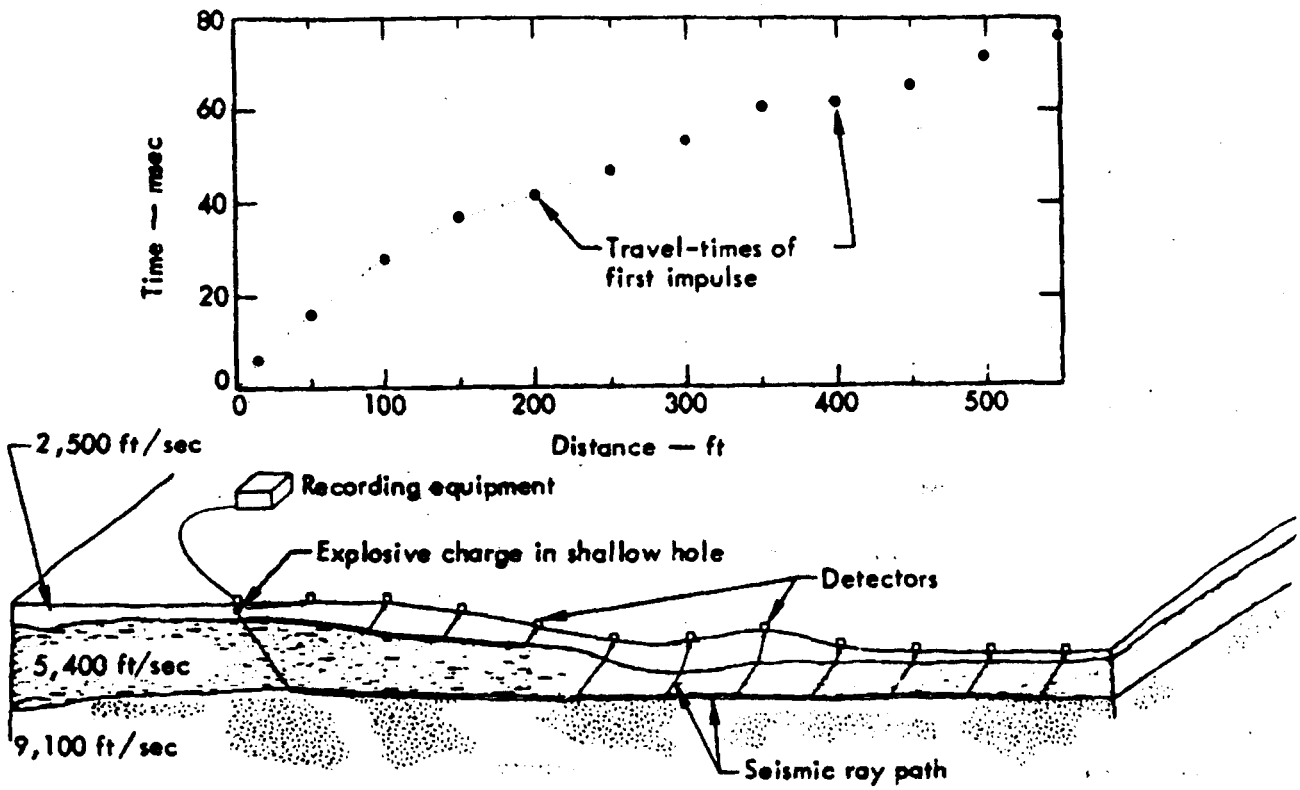


Figure 1. Schematic of seismic refraction survey

Figure 2 represents a refraction survey.

There is a definite relation between reflected and refracted energy which could be observed in Figure 2B. Using this principle and Tables A1 and A2 calculation is simplified, for the sound in a reflected survey only has to go down, turn around at point of geophone or microphone without going along the higher velocity layers and then back up. Seismic waves will bounce off of most surface with a lot of amplitude but not necessarily with a wide range of frequencies. The reflected seismic waves returning to the geophone with the strongest amplitude and frequencies should come from the layer with the highest velocity change which, in most cases, should be bedrock (solid rock) or from a gravel layer directly beneath an organic surface cover.

6. THEORY CONTINUED

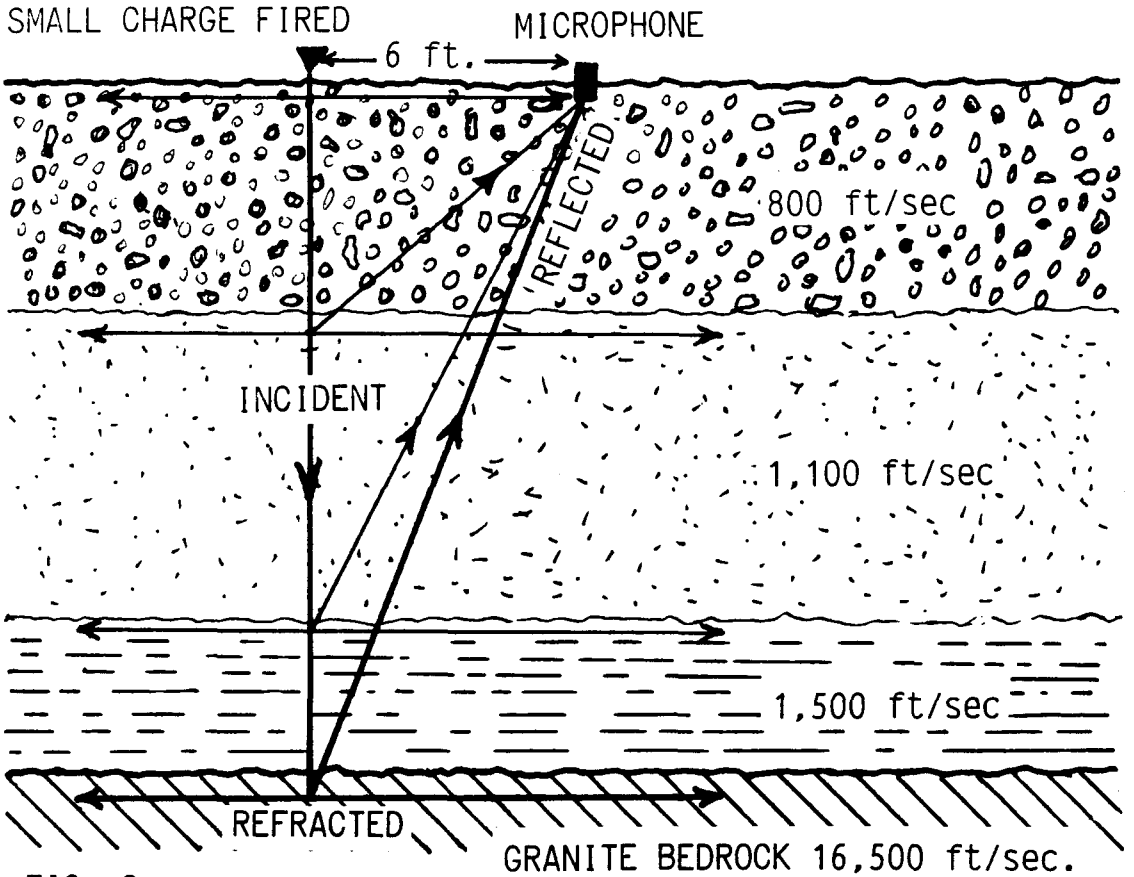


FIG. 2

The thicker line representing the reflected seismic wave from the bedrock to the microphone should be the wave with the highest amplitudes and the widest range of frequencies in Figure 2. The six foot distance from microphone to charge is to prevent damage to the delicate recording equipment. The error of this footage can usually be made up by averaging the total of the velocities a little higher to simplify interpretation. In this case "1,200 ft/sec." will be close enough.

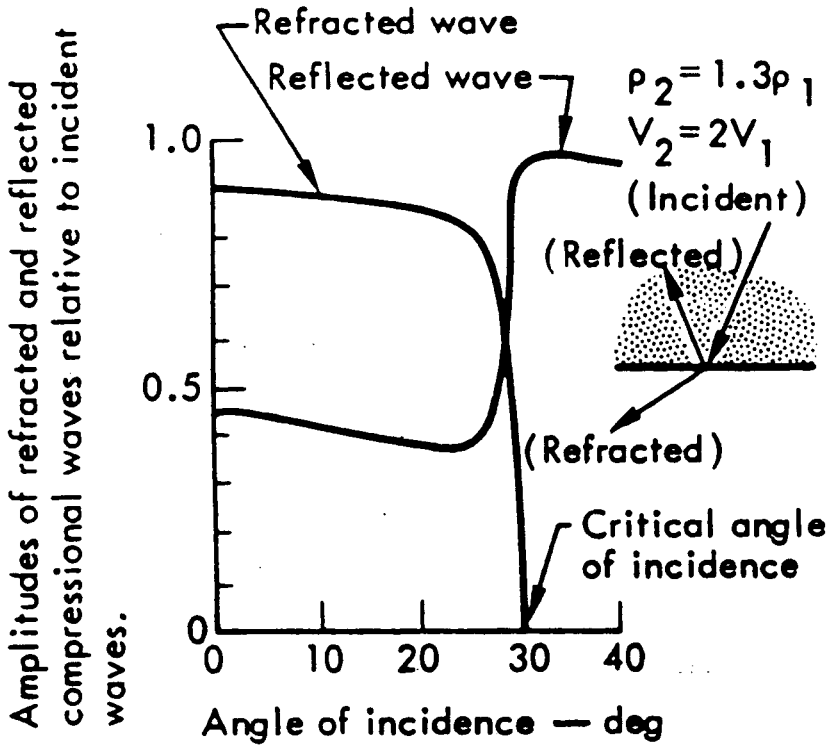


Fig. 2b. Amplitudes of reflected and refracted compressional waves relative to incident waves as a function of angle of incidence.

It may seem anomalous in Figure 2b that the sum of the amplitudes of the reflected and refracted pulses is greater than that of the incident wave (i.e., greater than 1.0). However, the energy of a pulse is proportional to the square of its amplitude, and the sum of the energies of the reflected and refracted waves is equal to the energy of the incident wave.

7. METHOD

After the grid pattern is established on a given claim by the owner or party in charge, we mark each test with flagging. We clean loose debris to allow firm soil contact with the microphone. We then cover the microphone to lessen the surface noise. A small charge is fired (usually a 16 gauge shotgun) to generate a seismic wave six feet from the microphone. The wave going into the ground and the reflected signal coming out is recorded on a magnetic tape recorder. We also do a field test on a nearby area with similar conditions where bedrock depth is known by drilling or excavation to determine the velocity of the gravels.

8. DATA PROCESSING AND PRESENTATION

The recording is sent back to base camp and is transferred into the Akai S700 Digital Sampler by means of a coaxal cable with 6.3 mm phone plug jack. The Akai is coupled with the Atari 520 St. computer with Midi Interface. Other peripherals are connected with various other interface connections.

The seismic recording is now analyzed in various formats and then the best choice is printed out on a Seikosha SP-1600 Dot Matrix Printer. A report on the testing and the interpretation of the data is made out to finalize the survey, along with copies of the original Fourier Transform for 3-D wave form analysis.

9. INTERPRETATION

In tests conducted in the past on Hunker Creek and on the Klondike River we determined that those frozen gravels had a velocity of 1,500 ft/sec (1.5 ft/ms). Based on this calculation the following formula is used:

> Reflected milliseconds x 1.5 divided by 2 = feet to bedrock or the layer to be of interest.

Test 1

Seventeen milliseconds shows up in the enlarged 2D form. The 3D has too many surface disturbances for a clear view. Bedrock should be under 13 feet.

Test 2

Seventeen milliseconds shows up more clearly in the 3D format. Solid bedrock should be under 13 feet.

Test 3

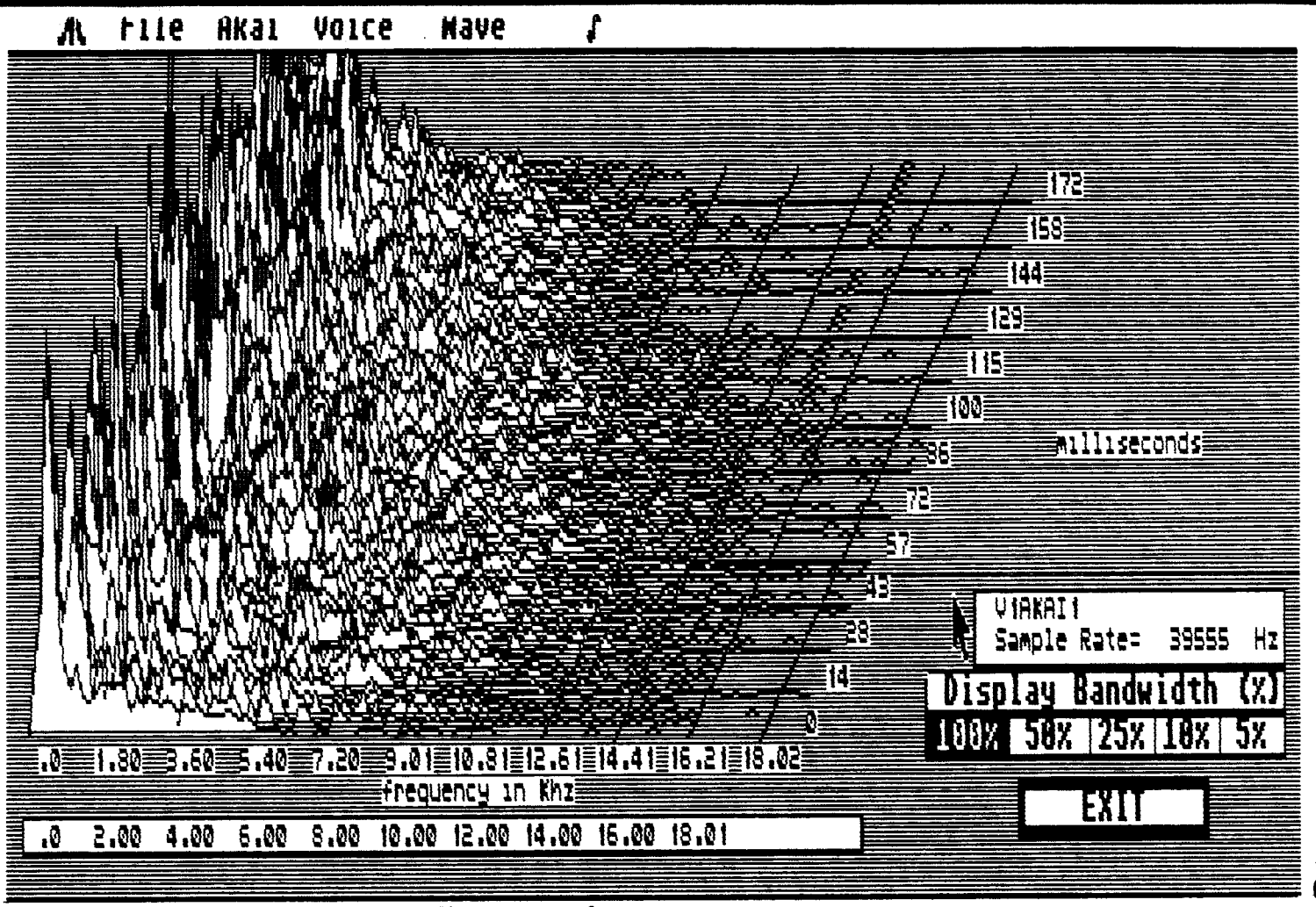
Twenty milliseconds show clearest in the 3D format. Solid bedrock should be under 15 feet. Bedrock seems to have the same contour as the surface terrain.

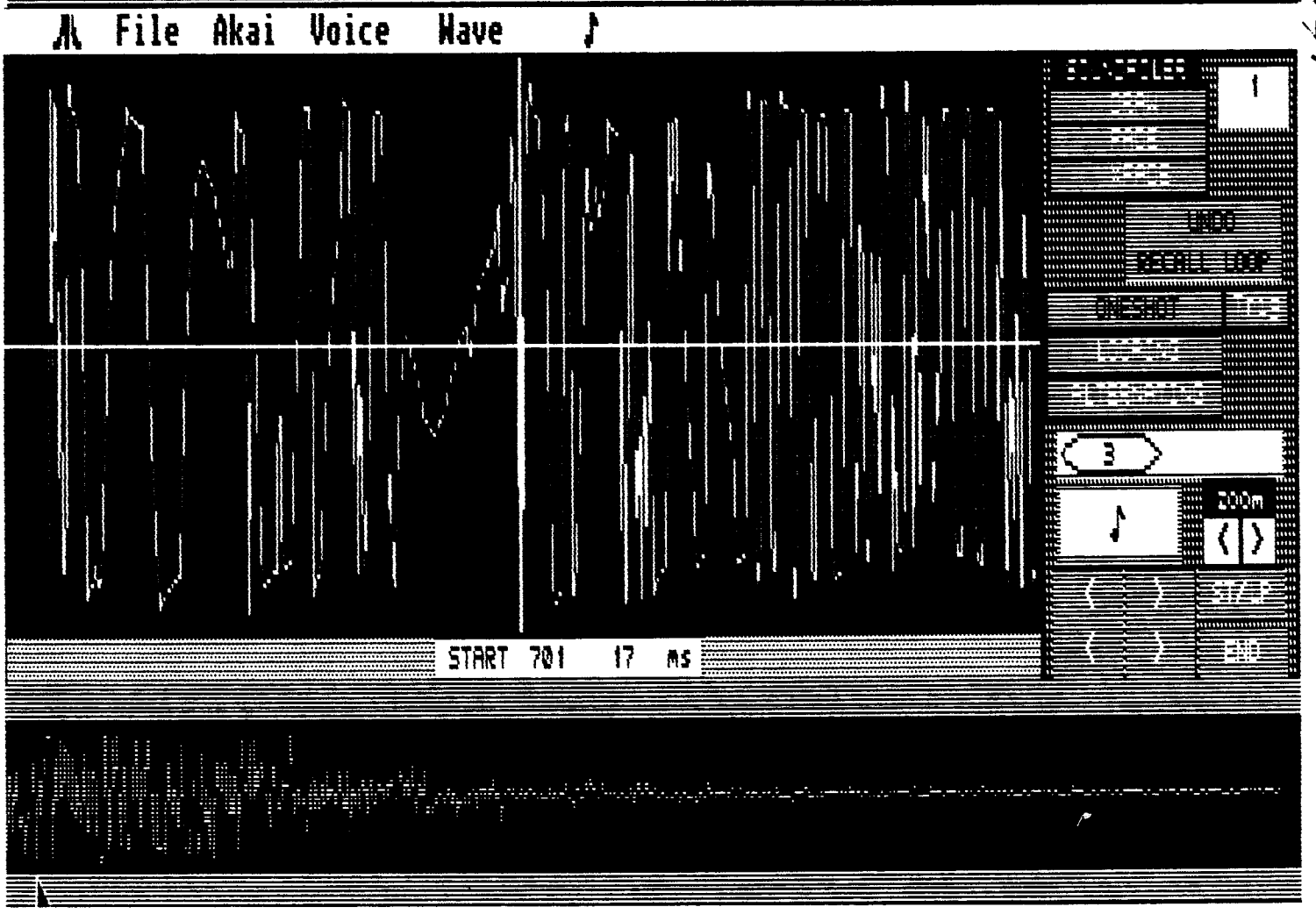
10. CONCLUSION

For the many varying soil conditions in different geographical locations could alter the final results. For this fact, an actual excavation on one of the test sites is strongly recommended. The most shallow reading test site is the best suited for this purpose. More accurate results can be achieved in this manner.

11. RECOMMENDATION

This type of reflected seismic testing is ideal in shallow placer ground. Without drilling or excavating near the test sites to establish velocity, the contour of the subsurface profile could still be charted in a cross test of a given valley. Old stream beds are possible to locate this way, giving a target area for a drill. A re-analysis of the seismic data after a drill log can make these tests surprisingly accurate. A tighter grid pattern in the future may be of great value in a drilling or mining strategy program.


File Akai Voice Wave
172
158
144
129
115
100
86
72
57
43
28
14
0
milliseconds
VIAKAI1
Sample Rate= 39555 Hz
Display Bandwidth (%)
100% 50% 25% 10% 5%
EXIT
.0 1.80 3.60 5.40 7.20 9.01 10.81 12.61 14.41 16.21 18.02
frequency in Khz
.0 2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.01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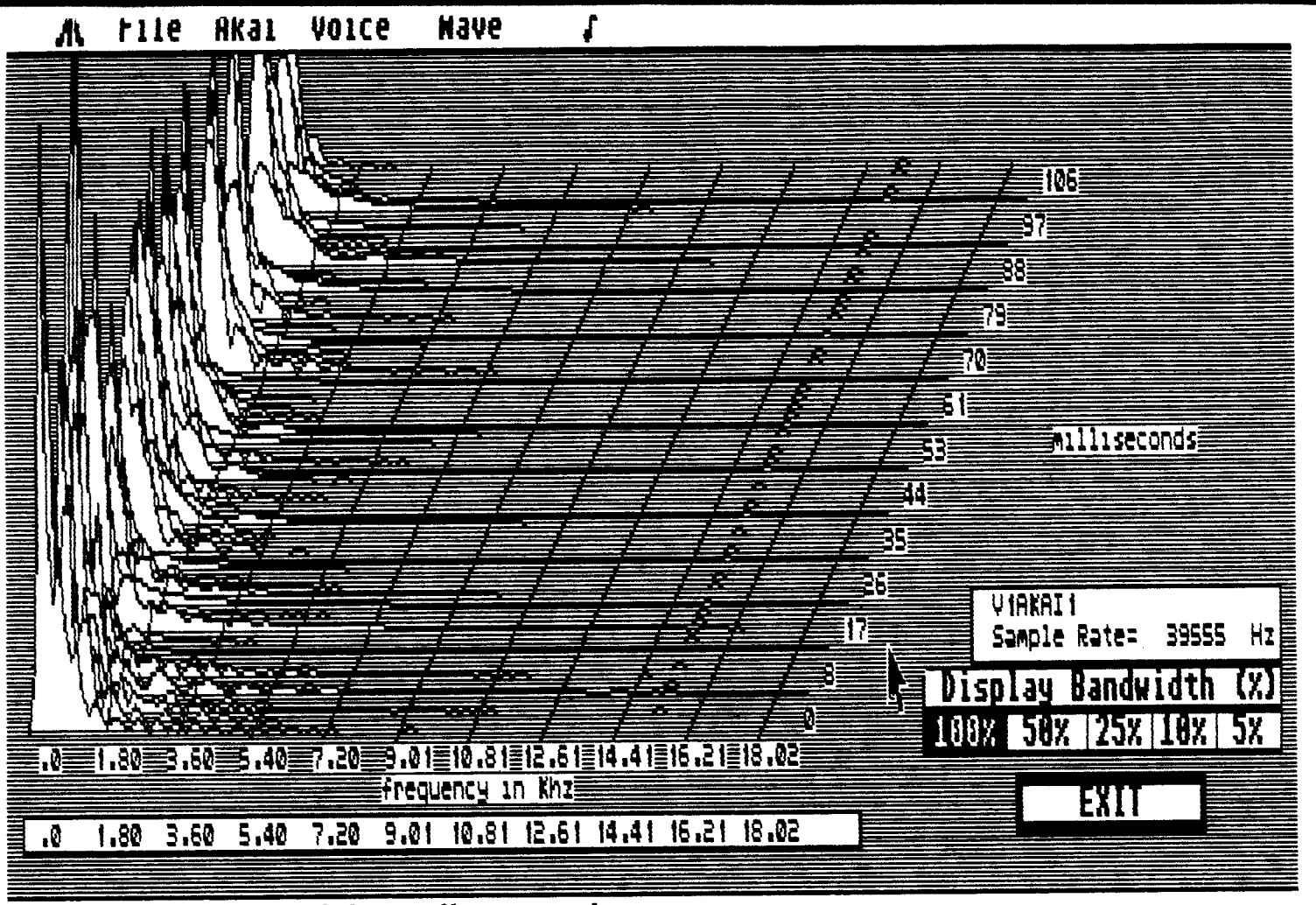
SELECTFILES
1
UNDO
RECALL LOOP
ONE-SHOT
3
200m
START 701 17 ms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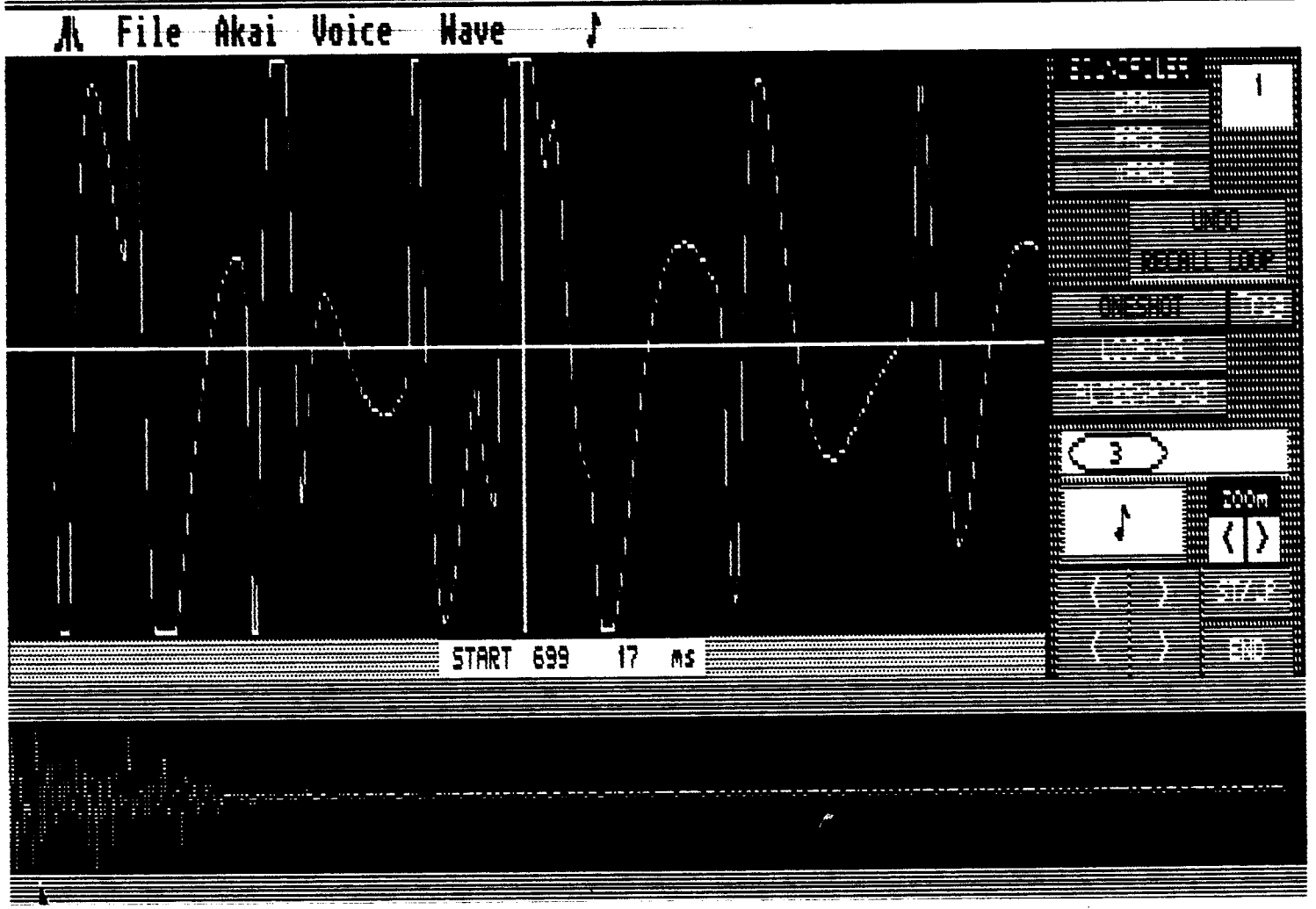
106
97
88
79
70
61
53
44
35
26
17
8
0
Milliseconds
.0 1.80 3.60 5.40 7.20 9.01 10.81 12.61 14.41 16.21 18.02
Frequency in Khz
.0 1.80 3.60 5.40 7.20 9.01 10.81 12.61 14.41 16.21 18.02
AKAI
Sample Rate= 39555 Hz
Display Bandwidth (%)
100% 50% 25% 10% 5%
EXIT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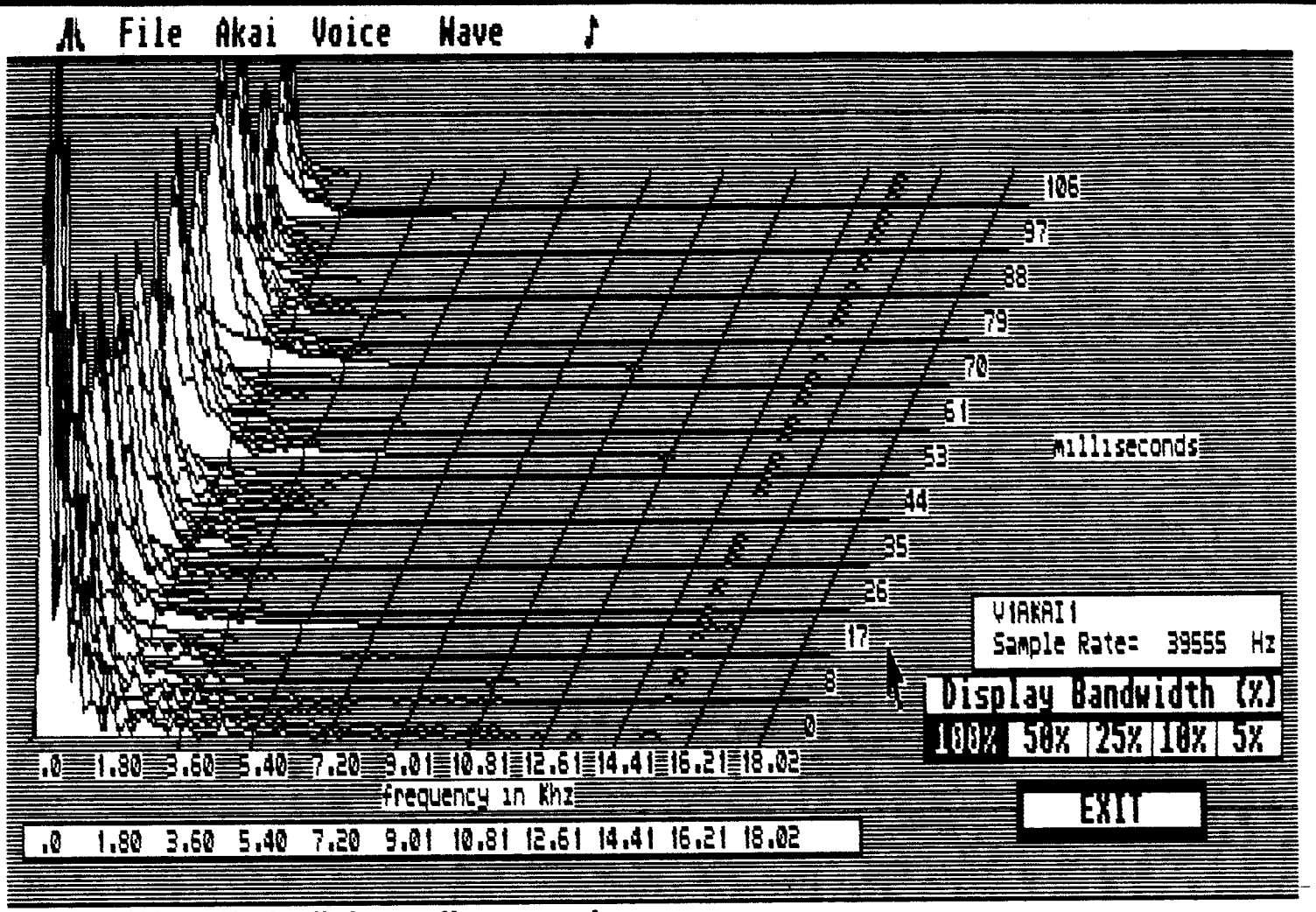
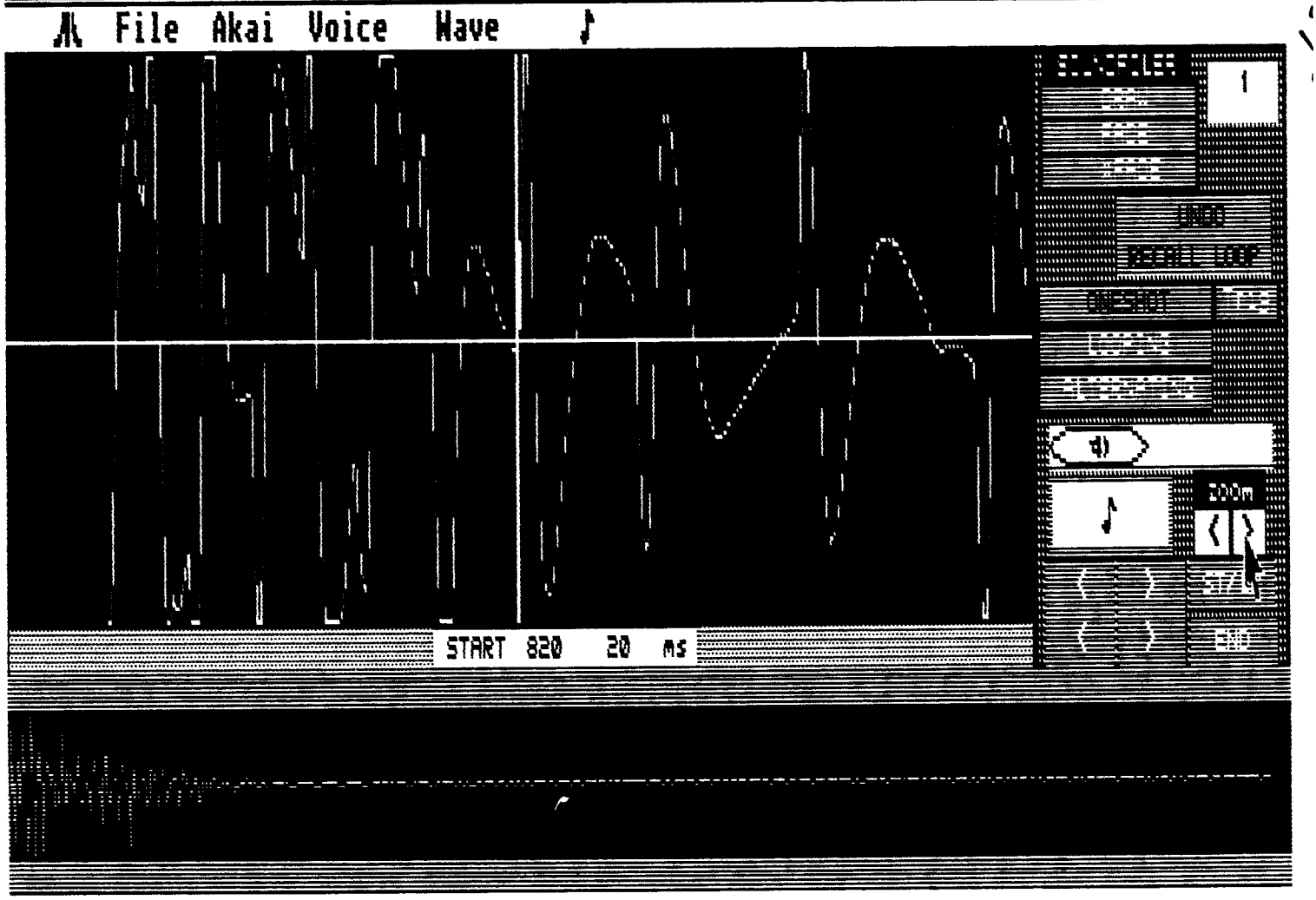
START 699 17 ms


File Akai Voice Wave
106
97
88
79
70
61
53
44
35
26
17
8
0
Milliseconds
.0 1.80 3.60 5.40 7.20 9.01 10.81 12.61 14.41 16.21 18.02
Frequency in Khz
AKAI1
Sample Rate= 39555 Hz
Display Bandwidth (%)
100% 50% 25% 10% 5%
EXIT
.0 1.80 3.60 5.40 7.20 9.01 10.81 12.61 14.41 16.21 18.02


File Akai Voice Wave
1
LOOP
RECALL LOOP
ONESHOT
START 820 20 ms

12. STATEMENT OF ASSESSMENT COSTS

For seismic survey conducted on Lee Creek, Disc Cook Placer Claim P30233.

Seismic Test

$250 per test x 3 shots = $750

Includes:

Seismic consultant
Assistant for field and expediting
Computer and printer time
Computer and program time
Computer down-loading (off-loading/Data Dumping)
Seismic Interpretation
Equipment - atv, axe, hip chain with thread, flagging tape, marker etc.
Transportation
Food and camping supplies
Accommodations (hotel, tent or camper)
Test shots where applicable (for calibration)

Report Preparation

Report writing, drafting,
map and figure preparation,
photocopying and binding = $300

Total Cost $1,050

CERTIFICATION

I, Ted Sandor, of Whitehorse, Yukon Territory certify that:

1. I hold a Gas and Arc Welding diploma from Northern Alberta Institute of Technology, Edmonton, Alberta, and have been practising continuously since mid seventies in Ardco Industries on oil field and seismic related equipment.

2. I am a journeyman welder, licensed to practise in Alberta. The geophysical technology came from extensive field work in the oil patch, and the very need to satisfy my own mining strategy since 1978.

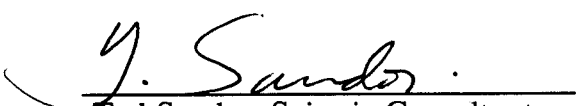
3. The geophysical field work was conducted with assistance that may change from test to test. The report preparation and interpretation is done by me personally to keep up the highest quality of this report.

4. I have based conclusions and recommendations contained in this report on my knowledge of geophysics, my previous experience and the results of the field work conducted on the property.

5. Directly or indirectly I hold no interest in this property other than professional fees, nor do I expect any interest in the property or any other of the owner's holdings.

6. The accuracy of the final results depends more on the calibration of the recording device and the computers then on the qualification of the operator.

Whitehorse, Yukon Territory
June 12, 1991



Ted Sandor, Seismic Consultant

13. REFERENCES

1. M.B. Dobrin, Introduction to Geophysical Prospecting (McGraw-Hill, New York. 1960)

2. J.J. Jakosky, Exploration Geophysics. (Trija Publishing Co., Newport Beach, California. 1957)

3. Technical Report E-73-4 Seismic Refraction Exploration for Engineering Site Investigations. Bruce B. Redpath (May, 1973)

4. 1984 Open File, R.L. Debicki, Bedrock Geology and Mineralization of the Klondike Area (West), 1150/14,15 and 116B/2,3.

5. J.K. Mortensen, Geochemistry of the Klondike District, West Central Revised, 1990.