TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

25,117

GEOTRONICS

SUMMARY GEOPHYSICAL REPORT

ON A

SEISMIC REFRACTION STUDY

OVER A

PLACER GOLD PROPERTY

DOMINION CREEK

ATLIN AREA

ATLIN MINING DIVISION, BRITISH COLUMBIA

INTRODUCTION AND GENERAL REMARKS

This report discusses the results of seismic refraction surveying carried out at various spots across Dominion Creek, which is a tributary of Spruce Creek and which is located within the Atlin Placer Mining Camp of British Columbia. The work was done for William Dell'Orfano of Bedford, New Hampshire.

The main purpose of the seismic refraction line was to determine the depths to bedrock as well as to locate any possible buried channels that may exist and that may carry placer gold.

The work was carried out on August 21, 1996 by David G. Mark, geophysicist, with the assistance of Mike Brindley, geophysical technician. Archie Wiggins, who placed the seismic lines and also located the crew onto the property, also assisted.

This report also includes work done by Geotronics in 1986 which is the line labeled SL-5 within this report. The writer has also drawn in the Dominion Creek channel within the northern part of the property as defined by work done on the adjacent property.

INSTRUMENTATION

Two 12-channel seismographs, model 1210F, manufactured by E.G. & G. Geometrics of Sunnyvale, California, were used on the project. They were interfaced together to form a 24-

channel system. This instrument features signal enhancement by stacking repeated signals in a digital memory. A CRT (cathode ray tube) continuously displays the signal stored in the memory on all channels simultaneously, or on selected combinations of fewer channels. The stored signal can then be printed on a permanent paper recorded by a built-in electric writing oscillograph. The instrument also contains active signal filters on each amplifier.

For the 1996 work, two 12-channel geophone cables of 90 m length with 5/10 m geophone spacings were used as well as 8 cycle/sec marsh geophones. For the 1986 work, two 12-channel cables of 330 meters length with 30-meter spacings were used. The cables and geophones were manufactured by Mark Products of Houston, Texas.

The blasting was done by radio signal with one encoder and one decoder, series 200, manufactured by Input/Output of Houston, Texas. These were interfaced with Motorola portable FM radios.

FIELD PROCEDURE

The 'two-way, in-line shot' seismic method was used for all seismic lines. The technique consists of laying out 24 geophones in a straight line and recording arrival times from shots fired at either end of the spread. Arrival times from three additional shot points each located every 1/4 of the spread length within the middle of the spread were also recorded. This provided the layer depths and velocity variations along the spread, and also gave additional information about the deeper layers. Finally, for each spread, two additional off-end shots were fired, each at a distance of up to one-half the spread length from the nearest geophone so that all first arrivals were from the basement bedrock (or basal layer). This was felt necessary so that the refractions received from the other shot points could be correlated and assigned the correct layer number.

The seismic lines were carried out as follows and as shown on the survey plan, map G-1:

Line	Direction	Geophone Spacing	Line Length	No. Spreads
SL-1	110°E	5/10 meters	190 meters	1
SL-2	110°E	5/10 meters	190 meters	1
SL-3	110°E	6 meters	132 meters	1
SL-4	60°E	5/10 meters	190 meters	1
SL-5	225°E	30 meters	660 meters	1

Blaze orange flagging was placed at each of the geophone spots and each geophone was surveyed in with a hand-held clinometer.

The shots were placed in holes dug by a D-handled shovel about 0.3 to 0.6 m deep with the shot size ranging from approximately 0.1 to 2.5 kg.

COMPUTING METHOD

The seismic data were analyzed using an intercept-delay time technique. Implementation of this method requires reverse refraction emanating from a common layer (usually bedrock) for at least two detectors (geophones). This bedrock overlap is necessary in order to obtain a true refractor velocity and travel time in the overlying overburden independent of bedrock dip and/or surface irregularities. The off-end shot times are used to extrapolate the bedrock 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 bedrock below each detector.

The seismic interpretation for each of the five profiles is shown on the accompanying maps, G-2 to G-6, respectively, at a scale of 1:1000. Also, the seismic-mapped channel is shown on the survey plan, map G-1 which is drawn at a scale of 1:5000.

DISCUSSION OF RESULTS

A three- or four-layer case was encountered below each of the seismic lines. The following is a table of the velocity layers classified as to what they probably reflect.

Layer	Velocity (m/s)	Classification
1	350 - 640	Overburden: surficial, loose, dry sands, gravels, and/or tills
2	1,000 - 1,450	Overburden: partially water-saturated sands and gravels, possibly till
2, 3	2,000 - 2,500	Overburden: water-saturated, very hard and compact gravels and/or tills
3,4	3,160 - 3,600	Bedrock: possibly sediments, metasediments, or volcanics
3,4	4,700 - 5,370	Bedrock: possibly volcanics or metasediments (slates?)

The seismic-calculated depths along lines SL-1 to SL-4 are too deep for the size of spread used. It appeared from evidence in the area that the depths to bedrock were shallower than was evidently the case. Therefore, in carrying out the calculations, certain assumptions had to be made, such as, the bedrock velocity was the same across each spread. The result is the calculated depths are not definite, that is, the percentage error is much higher. For this reason, the buried bedrock surface has been dashed in. However, less affected by the assumptions that had to be made, but still affected, were the profiles of the buried bedrock surface.

On the other hand, SL-5 was carried out with a much longer spread with the result that the calculated depths to bedrock along its length are much more accurate.

The seismic calculated depths along each of the lines vary as follows:

1. 20 meters below G-5 to 78 meters below G-1
2. 27 meters below G-16 to 57 meters below G-1
3. 20 meters below G-23 to 46 meters below G-1
4. 50 meters below G-20 to 79 meters below G-6
5. 9 meters below G-2 to 85 meters below G-20.

A buried bedrock channel is shown to occur on SL-5 from G-14 to about G-21, which as indicated above is up to 85 meters deep. From other seismic work done in the area in previous years and as shown on the survey plan, this channel was found to run in a northeasterly direction towards the Spruce Creek channel which was successfully mined for its placer gold. In the opposite direction, lines SL-1 through to SL-4 show it to change direction dramatically where it runs in a more northeasterly direction. However, it must be pointed out that the location of the channel on these four lines is not as definite as that on SL-1 and to the north. Therefore, the buried channel is outlined as dashed lines. This is especially true of the northwestern boundary of the channel which is assumed to occur just to the northwest of SL-2 and SL-3. However, the writer considers the channel occurring in this general area to be quite probable from the seismic evidence. What is not so definite is the exact boundaries of the channel.

A second possible channel is shown to occur on lines SL-1 through to SL-4 to the southeast of the main channel. This channel is considered to be less possible than the main one partly because it occurs at a higher elevation. However, one of the reasons the writer has indicated it as a possible channel is the lower accuracy of the seismic-calculated depths on these lines. That is, each of the profiles indicate a bench to occur that, if the profile was more accurate, may actually be a raised channel.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D.G. MARK
GEOSCIENTIST

David G. Mark, P.Geo.
Geophysicist

February 1997

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify that:

I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

I further certify that:

1. I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices at #405 - 535 Howe Street, Vancouver, British Columbia.

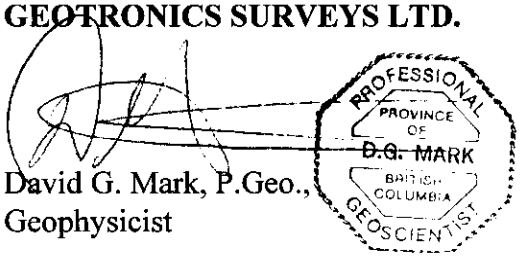
2. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.

3. I have been practicing my profession for the past 29 years, and have been active in mining exploration and geotechnical work for the past 32 years.

4. This report is compiled from data obtained from a seismic refraction survey carried out under my direct supervision on August 21, 1996.

5. I have no interest in the property discussed within this report, nor any other properties belonging to William Dell 'Orfano, nor will I receive any interest as a result of writing this report.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.



David G. Mark, P.Geo.,
Geophysicist

July, 1997

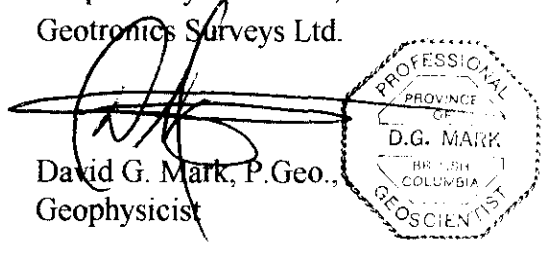
GEOTRONICS

AFFIDAVIT OF EXPENSES

A seismic refraction survey was carried out on the West Dominion #1 and West Dominion #2 placer claims, which is part of the Dominion Creek Placer Gold Property which occurs on Dominion Creek, a tributary of Spruce Creek, within the Atlin placer mining area, on August 21st, 1996, to the value of the following:

Field:		
Mob-demob (Share)	$ 350.00	
Linecutting, 1 day @ $500/day	500.00	
3-man crew, including room and board; truck rental and gas; and instrumentation, 12 hours @ $160/hour	1,920.00	
Explosives, 1 case @ $200/case	200.00	
Seismocaps, 32 @ $5.00/cap	160.00	
SUB-TOTAL	$2,760.00	$3,130.00
Data Reduction & Report:		
Senior geophysicist, 6 hr. @ $50/hr.	300.00	
Geophysical technician, 43 hours @ $35/hour	1,505.00	
Printing, photocopying, compilation	150.00	
SUB-TOTAL	$1,955.00	$1,955.00
GRAND TOTAL		**$5,085.00**

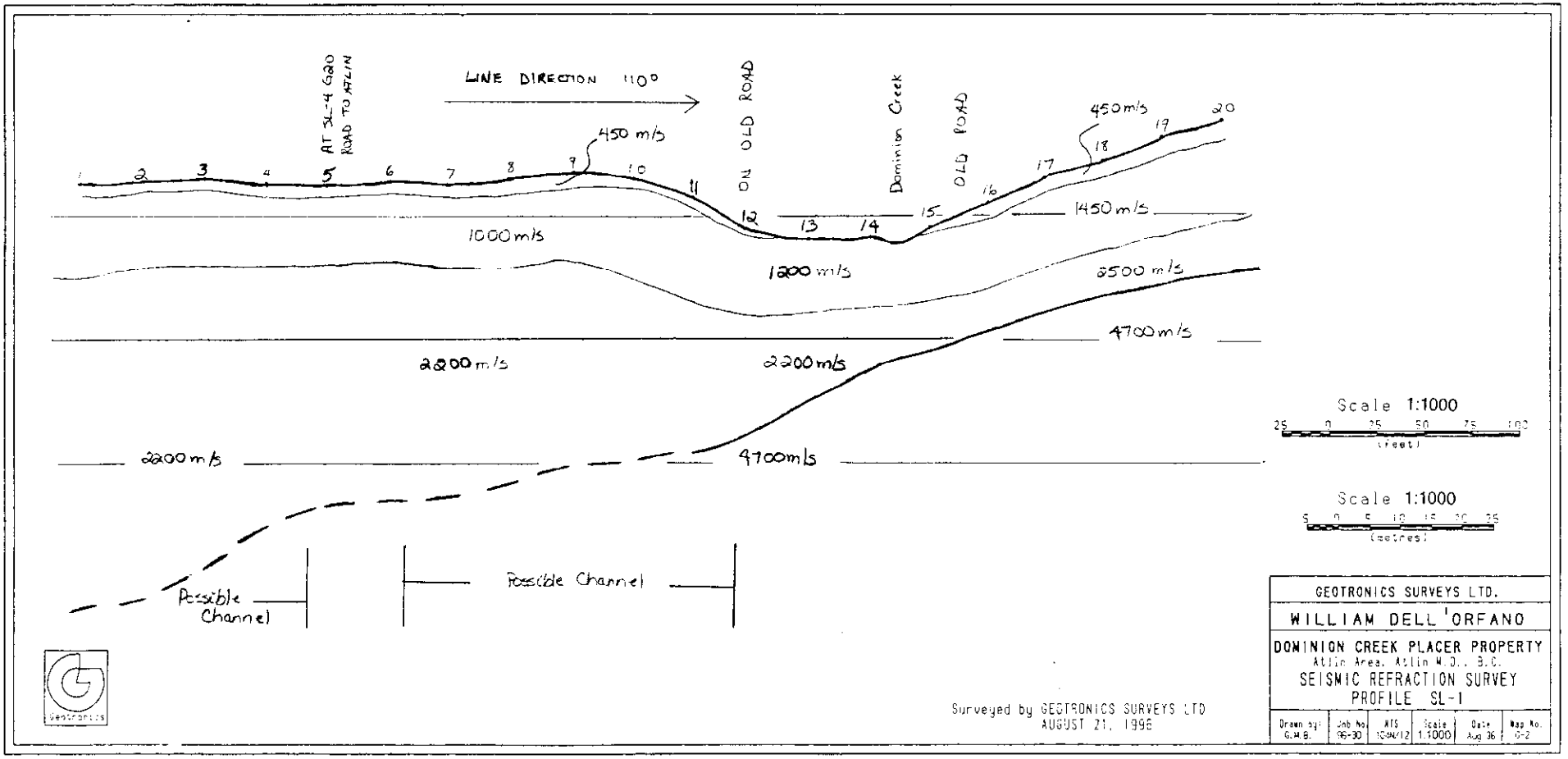
Respectfully submitted,
Geotronics Surveys Ltd.



David G. Mark, P.Geo.,
Geophysicist

July, 1997

GEOTRONICS



Surveyed by GEOTRONICS SURVEYS LTD
AUGUST 21, 1996

GEOTRONICS SURVEYS LTD.

WILLIAM DELL 'ORFANO

DOMINION CREEK PLACER PROPERTY
Atlin Area, Atlin M.D., B.C.
SEISMIC REFRACTION SURVEY
PROFILE SL-1

Drawn by:	Job No.	NTS	Scale	Date	Map No.
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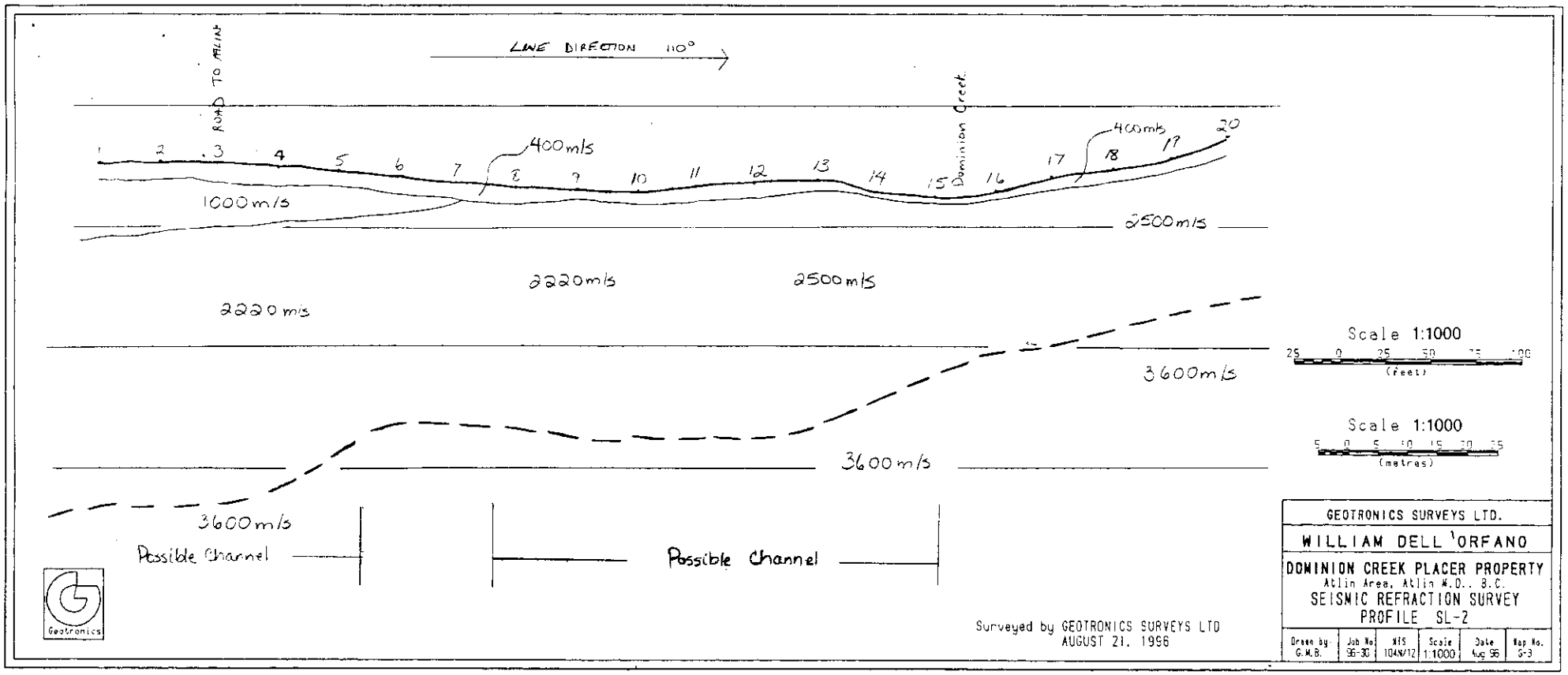
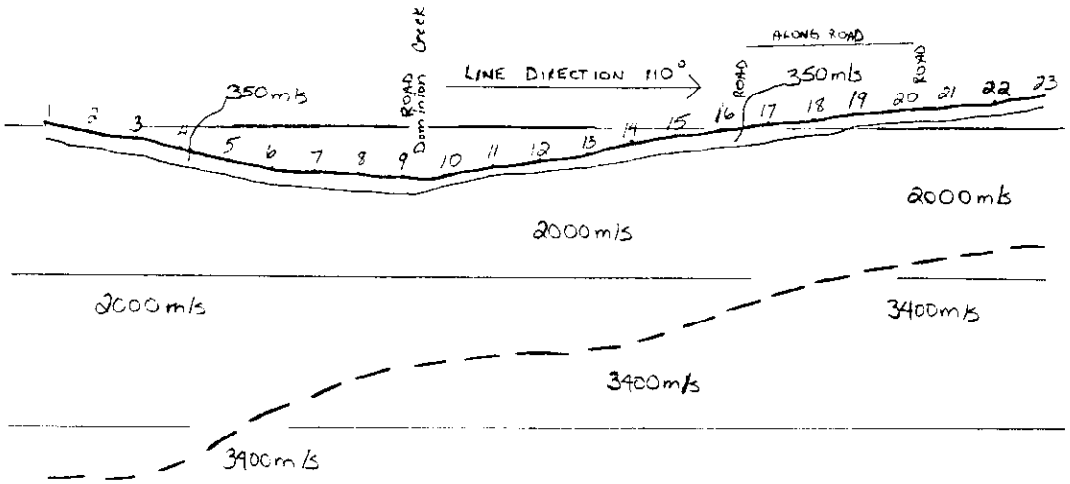

LINE DIRECTION 110°
ROAD TO ATLIN
Dominion Creek
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
400m/s
400m/s
1000m/s
2500m/s
2220m/s
2220m/s
2500m/s
3600m/s
3600m/s
3600m/s
Possible Channel
Possible Channel
Scale 1:1000
25 0 25 50 75 100
(feet)
Scale 1:1000
5 0 5 10 15 20 25
(metres)
Surveyed by GEOTRONICS SURVEYS LTD
AUGUST 21, 1996
GEOTRONICS SURVEYS LTD.
WILLIAM DELL ORFANO
DOMINION CREEK PLACER PROPERTY
Atlin Area, Atlin M.D., B.C.
SEISMIC REFRACTION SURVEY
PROFILE SL-2
Drawn by: G.M.B.
Job No: 96-30
NTS: 104N/12
Scale: 1:1000
Date: Aug 96
Map No.: S-3



Scale 1:1000

25 0 25 50 75 100
(Feet)

Scale 1:1000

5 0 5 10 15 20 25
(metres)

Geotronics

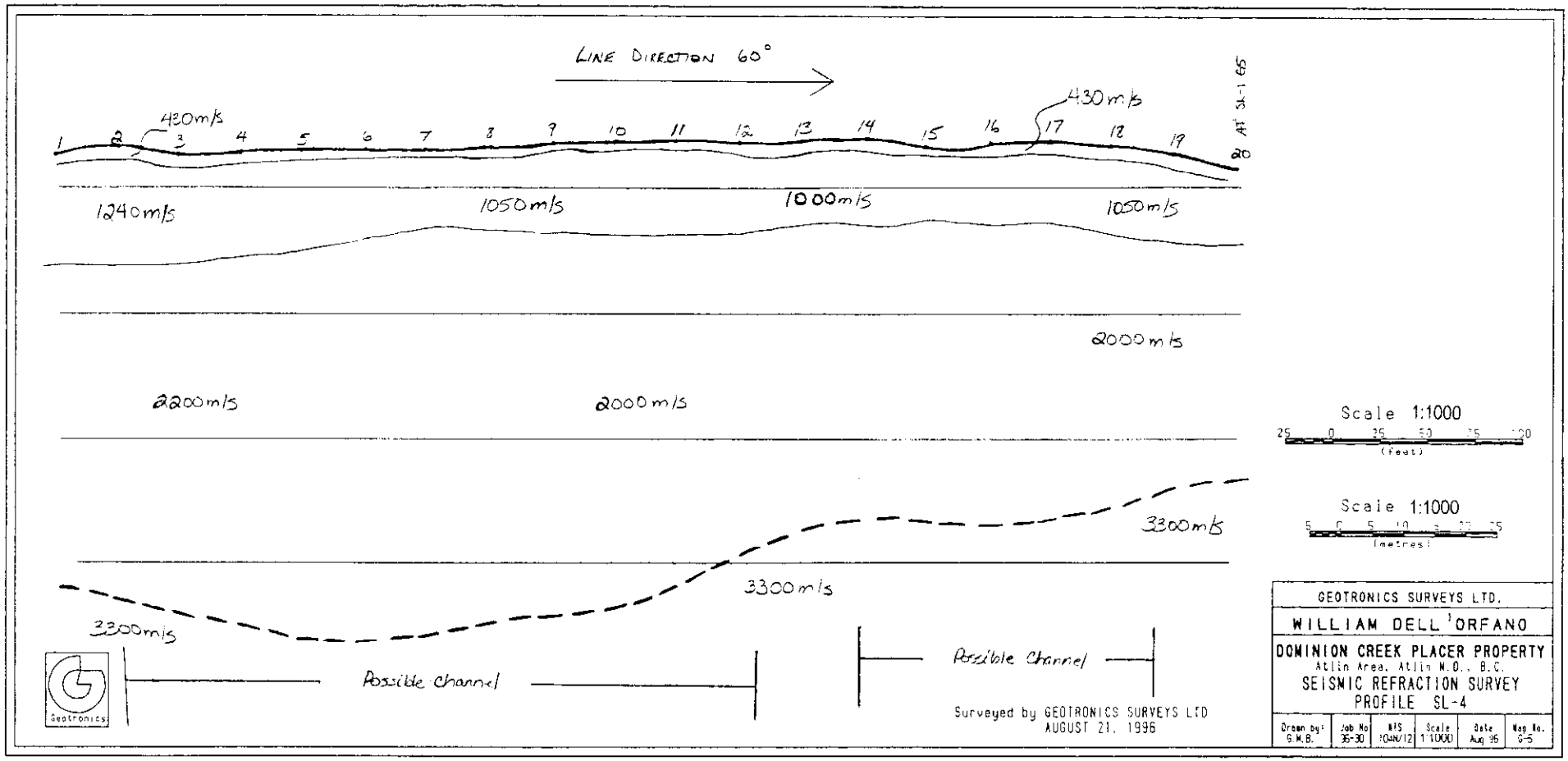
Surveyed by GEOTRONICS SURVEYS LTD
AUGUST 21, 1996

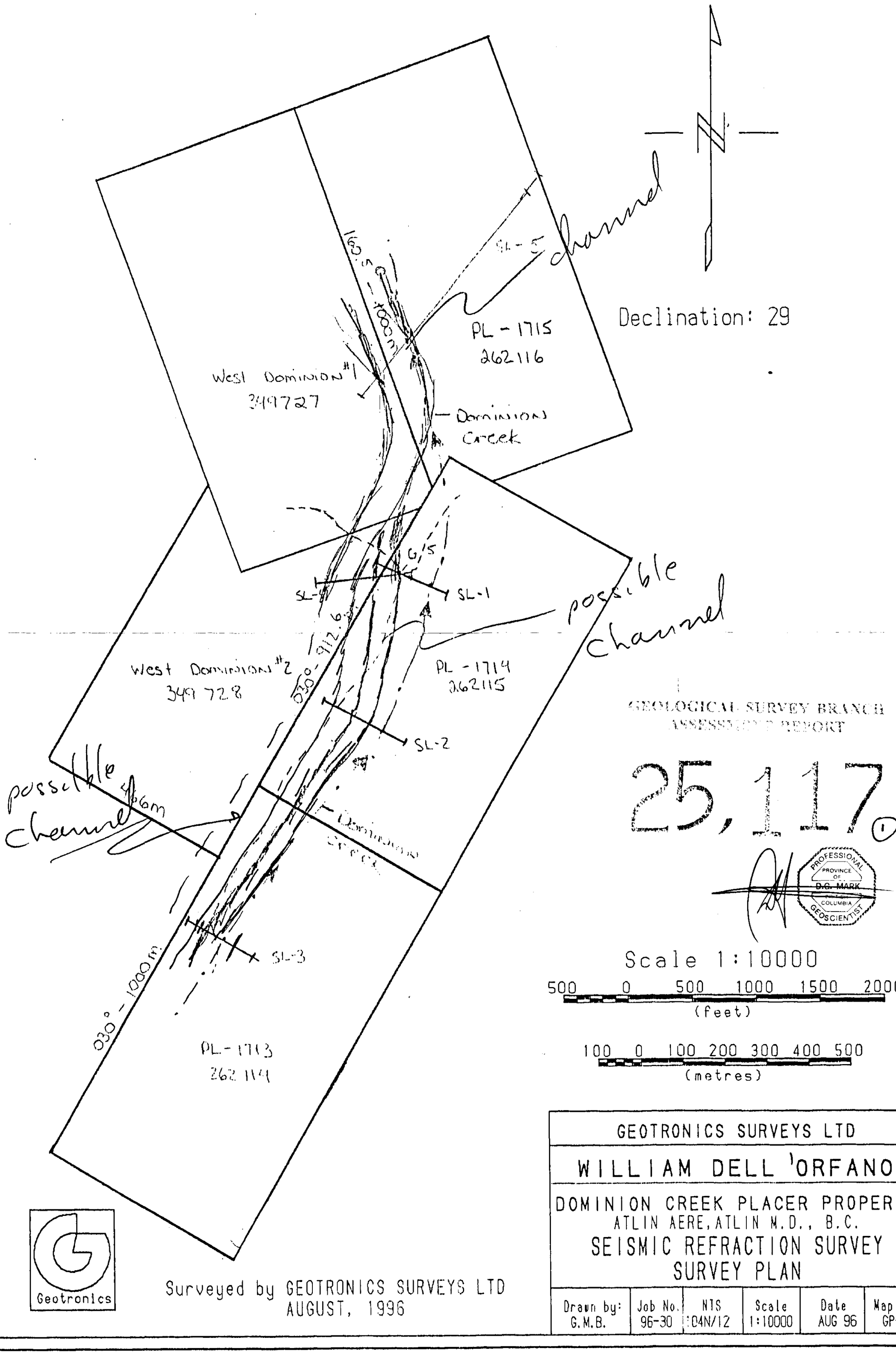
GEOTRONICS SURVEYS LTD.

WILLIAM DELL / ORFANO

DOMINION CREEK PLACER PROPERTY
Atlin Area, Atlin M.D., B.C.
SEISMIC REFRACTION SURVEY
PROFILE SL-3

Drawn by:	Job No.	NTS	Scale	Date	Map No.
G.M.B.	96-30	104N/12	1:1000	Aug 96	G-4


LINE DIRECTION 60°
430m/s
430m/s
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
AT SL-1 65
1240m/s
1050m/s
1000m/s
1050m/s
2000m/s
2200m/s
2000m/s
3300m/s
3300m/s
3300m/s
Possible Channel
Possible Channel
Surveyed by GEOTRONICS SURVEYS LTD
AUGUST 21, 1996
Scale 1:1000
(Feet)
Scale 1:1000
(metres)
GEOTRONICS SURVEYS LTD.
WILLIAM DELL ORFANO
DOMINION CREEK PLACER PROPERTY
Atlin Area, Atlin M.D., B.C.
SEISMIC REFRACTION SURVEY
PROFILE SL-4
Drawn by: G.M.B.
Job No: 96-30
NTS: 104N/12
Scale: 1:1000
Date: Aug 96
Map No.: G-5



GEOTRONICS SURVEYS LTD

WILLIAM DELL 1 ORFANO

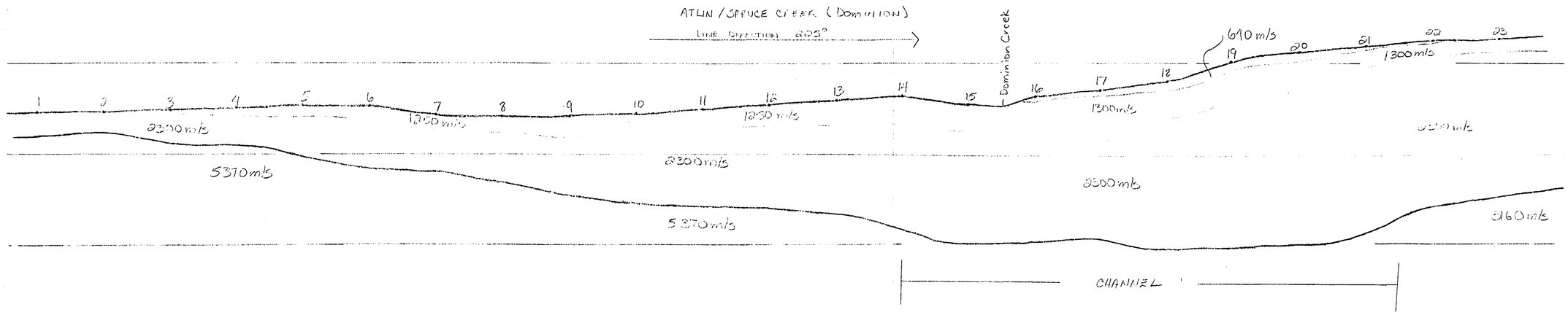
DOMINION CREEK PLACER PROPERTY
ATLIN AERE, ATLIN M.D., B.C.

SEISMIC REFRACTION SURVEY
SURVEY PLAN

Drawn by:	Job No.	NTS	Scale	Date	Map No.
G.M.B.	96-30	104N/12	1:10000	AUG 96	GP-1

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,117



Surveyed by GEOTRONICS SURVEYS LTD
1986

Scale 1:1000
50 0 50 100 150 200
(feet)

Scale 1:1000
10 0 10 20 30 40 50
(metres)

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WILLIAM DELL 'ORFANO

DOMINION CREEK PLACER PROPERTY
Atlin Area, Atlin M.D., B.C.
SEISMIC REFRACTION SURVEY
PROFILE SL-5

Drawn by:	Job No.	NTS	Scale	Date	Map No.
D.G.W.	96-30	104N/12	1:1000	Aug 96	G-6