TELKWA GOLD CORPORATION

REPORT ON

SEISMIC REFRACTION INVESTIGATION

DEL SANTO PROPERTY

SMITHERS, B.C.

by

Russell A. Hillman, P.Eng.

July, 1999

PROJECT FGI-462

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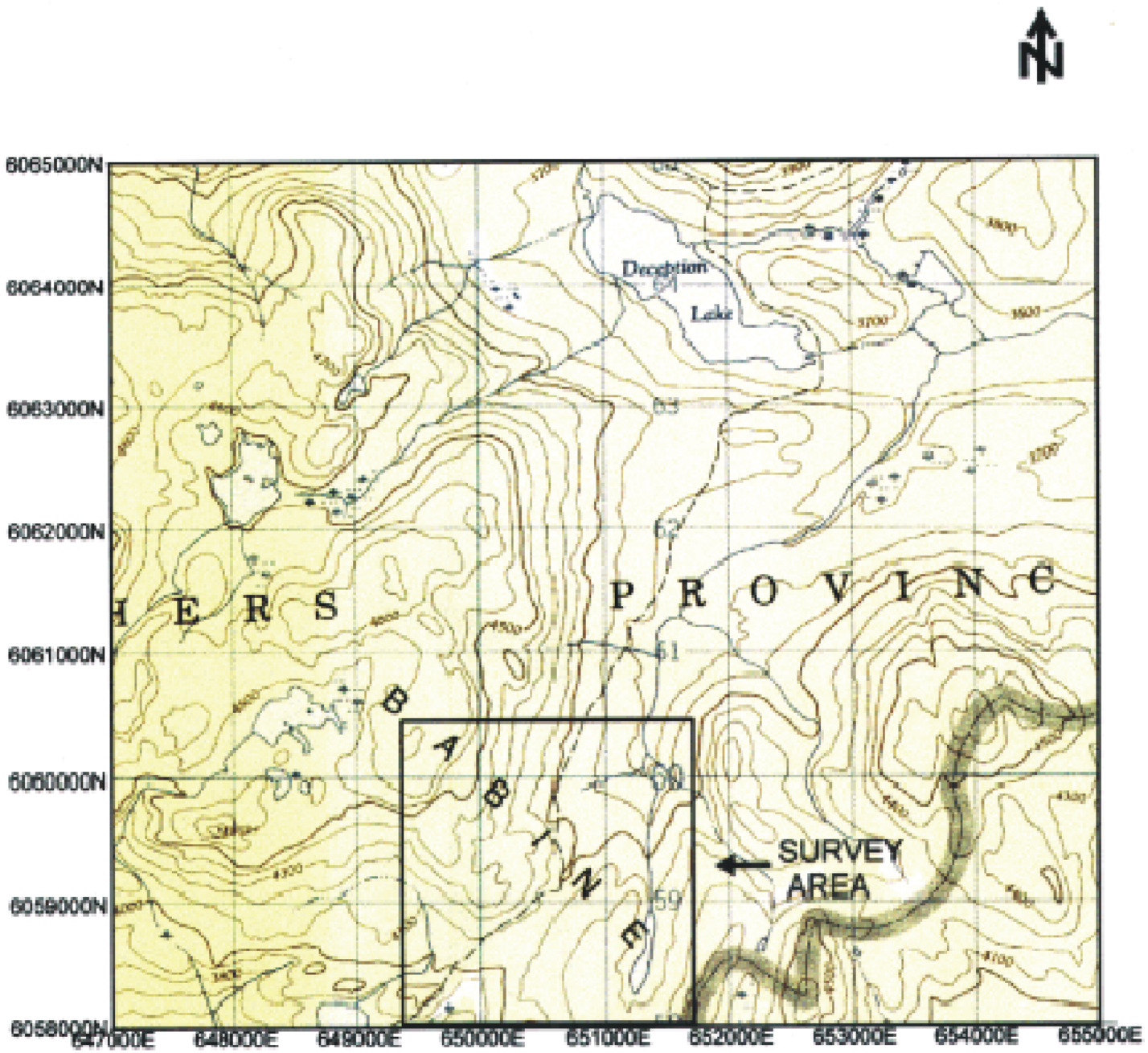
CONTENTS

ILLUSTRATIONS

1. INTRODUCTION

In the period July 12 to July 13, 1999, Frontier Geosciences Inc. carried out a seismic refraction investigation for Telkwa Gold Corporation on the Del Santo property near Smithers, B.C. A Survey Location Plan of the site area is shown at 1:50,000 scale in Figure 1. The survey was carried out across the axis of E.M. conductors identified in a previous MaxMin survey of the site area carried out by Frontier Geosciences Inc. in September, 1998. The seismic lines were surveyed east-west in order to intersect the apparent strike of the E.M. conductors at right angles. The locations of the seismic lines together with the E.M. conductors and Magnetic Intensity are illustrated at 1:2,500 scale in Figure 2, in the Appendix.

The survey coverage of five separate lines was positioned to cross the axes of E.M. conductors A8, A5, A4, A1 and C1. Each seismic line was 115m in length. The purpose of the seismic survey was to determine the depths to bedrock for proposed trenching operations and to determine bedrock velocities that may provide more information on bedrock geology in the site area.



NOTE:

This figure is a segment of the NTS map sheet 93 L/10, "Quick"

TELKWA GOLD CORPORATION DEL SANTO PROPERTY, SMITHERS, B.C.		
GEOPHYSICAL SURVEY		
SURVEY LOCATION PLAN		
FRONTIER GEOSCIENCES INC.		
DATE: SEPTEMBER, 1998	SCALE: 1:50,000	FIG.1

2. THE SEISMIC REFRACTION SURVEY METHOD

2.1 Equipment

The seismic refraction investigation was carried out using a Geometrics, Model S-12, 24 channel, signal enhancement seismograph and Mark Products Ltd. 48 Hz geophones. Geophone intervals along the multicored seismic cable were maintained at 5 metres in order to obtain high resolution, subsurface information. Energy was provided by small explosive charges buried in hand-excavated shotholes along the seismic traverses. The electrical blasting caps in the charges were detonated with a Geometrics, HVB-1, high voltage, capacitor type blaster.

2.2 Survey Procedure

For each spread, the seismic cable was stretched out in a straight line and the geophones implanted. Seven separate "shots" were then initiated: one at either end of the 24 geophone array, three at intermediate locations along the seismic cable, and one off each end of the cable for basal layer information. Records of the seismic data for each detonation were inspected and filtered prior to digital storage for subsequent analysis. Data recorded during field surveying operations was generally of good to excellent quality.

Throughout the survey, notes were recorded regarding seismic line positions in relation to geological features and grid station positions. Elevations on the seismic lines were determined by inspection of 1:15,000 topographic mapping of the grid area.

3. SEISMIC REFRACTION ANALYSIS

3.1 Interpretation

Interpreted geological conditions at the site indicate generally thin to moderate thicknesses of overburden overlying the interpreted competent bedrock surface. In general, the velocity contrast between refractive layers was more than adequate for interpretation. Interpreted boundaries with distinct velocities are indicated by continuous coloured lines in the sections. The basal red line represents the interpreted competent bedrock surface.

3.2 Interpretive Method

The final interpretation of the seismic data was arrived at using the method of differences technique. This method utilizes the time taken to travel to a geophone from shotpoints located to either side of the geophone. Using the total time, a small vertical time is computed which represents the time taken to travel from the refractor up to the ground surface. This time is then multiplied by the velocity of each overburden layer to obtain the thickness of each layer at that point.

3.3 Limitations

The depths to subsurface boundaries derived from seismic refraction surveys are generally accepted as accurate to within fifteen percent of the true depths to the boundaries. In some cases, unusual geological conditions may produce false or misleading seismic arrivals with the result that computed depths to subsurface refractors may be less accurate. These conditions may be caused by a "hidden layer" situation or by a velocity inversion. The first condition is caused by the inability to detect the existence of layers because of insufficient velocity contrasts or layer thicknesses. A velocity inversion exists when an underlying layer has a lower velocity than the layer directly above it.

The results are interpretive in nature and are considered to be a reasonably accurate representation of existing subsurface conditions within the limitations of the seismic refraction method.

4. GEOPHYSICAL RESULTS

4.1 General

The results of the interpretations for seismic lines SL-1 through SL-5 are illustrated at 1:500 natural scale in Figures 3 through 7 respectively in the Appendix. Topographic information along the seismic sections was determined by chain and inclinometer and reference to 1:15,000 scale topographic mapping of the survey area.

4.2 Discussion

The results of the interpretations for seismic lines SL-1 through SL-5 indicate that three distinct velocity layers underlie the site area. The thin surficial layer with a velocity of 350 m/s is consistent with surface exposures and shothole intersections of loose sand and gravel or loose, weathered glacial till. Interpreted thicknesses for this layer range from 0.1 m to 4.4 m.

All five seismic sections indicate the presence of a generally thicker intermediate layer with a velocity of 2,000 m/s. Ranging up to 9.7 m in thickness, this layer is interpreted as dense glacial till.

The basal layer on seismic lines SL-1 through SL-5 with a velocity range of 3870 m/s to 6800 m/s is the interpreted competent bedrock surface. The interpreted bedrock surface on Seismic Line 1 at anomaly A8 indicates six separate velocity zones are present in the bedrock along this 115 m traverse. The presence of several bedrock velocity zones suggests a fault is present at this location. Subsequent trenching operations in August of 1999 confirmed the fault at this location.

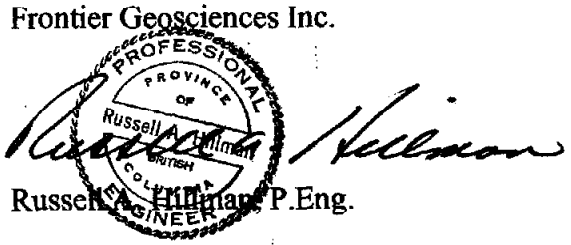
In contrast to SL-1, the bedrock velocity for Seismic Line 2 at anomaly A5 indicates a single velocity with a magnitude of 4750 m/s. This area has been mapped as mafic flows and tuffs.

The bedrock velocities for Seismic Line 3 show three velocity zones with a lower velocity zone of 3870 m/s separating similar velocities of 5130 m/s and 5330 m/s. The central, lower velocity zone is coincident with the position of E.M. conductor A4. There is a contact mapped in this area between mafic flows and tuffs, and tuffs and flows with cherty slates and siltstone.

Anomaly A1 was intersected by Seismic Line 4. A single velocity of 5000 m/s was identified for the bedrock at this location. This area is also mapped as mafic flows and tuffs.

Seismic Line 5 crossed the axis of E.M. conductor C1. A strong bedrock velocity contrast exists at this location with a 4830 m/s zone to the west and a lower 3900 m/s velocity zone occurring to the east. The contact between these two velocity zones is approximately at 1+30 E on grid line 3+80 S. Follow-up drilling at this location intersected a limited extent, easterly-dipping fault which is the apparent source of anomaly C1.

for: Frontier Geosciences Inc.



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Frontier Geosciences Inc.

237 St. Georges Ave., North Vancouver, B.C. V7L 4T4 · Tel: (604) 987-3037 · Fax (604) 984-3074

July 26, 1999

Telkwa Gold Corporation
P.O. Box 395
Smithers, B.C.
V0J 2N0

Attention: Mr. Will Tompson, P.Geo.

Dear Sir:

Our Invoice #99-39
Seismic Refraction Investigation
Del Santo Property
Smithers, B.C.
Our Project No. FGI-462

Mobilization / Demobilization - Vancouver to Smithers / return		$1,060.00
Air Fare		747.00
Crew Day Costs - July 12, July 13, 1999 - two days @ $710.00 per day		1,420.00
Data Processing and Report Preparation - five seismic spreads @ $270.00 per spread		1,350.00
	Total	$4,577.00
	GST (R120952601)	320.39
	Balance Due	$4,897.39

Thank you for this opportunity to be of service.

CERTIFICATE

I, RUSSELL ALEXANDER HILLMAN, resident of North Vancouver, British Columbia, hereby certify as follows:

1) I am a Consulting Geophysicist with business offices at 237 St. Georges Ave., in North Vancouver, B.C.

2) I graduated with a degree of Bachelor of Science, Geophysics, from the University of British Columbia.

3) I have practiced my profession for 29 years. I am a Professional Engineer in the Province of British Columbia.

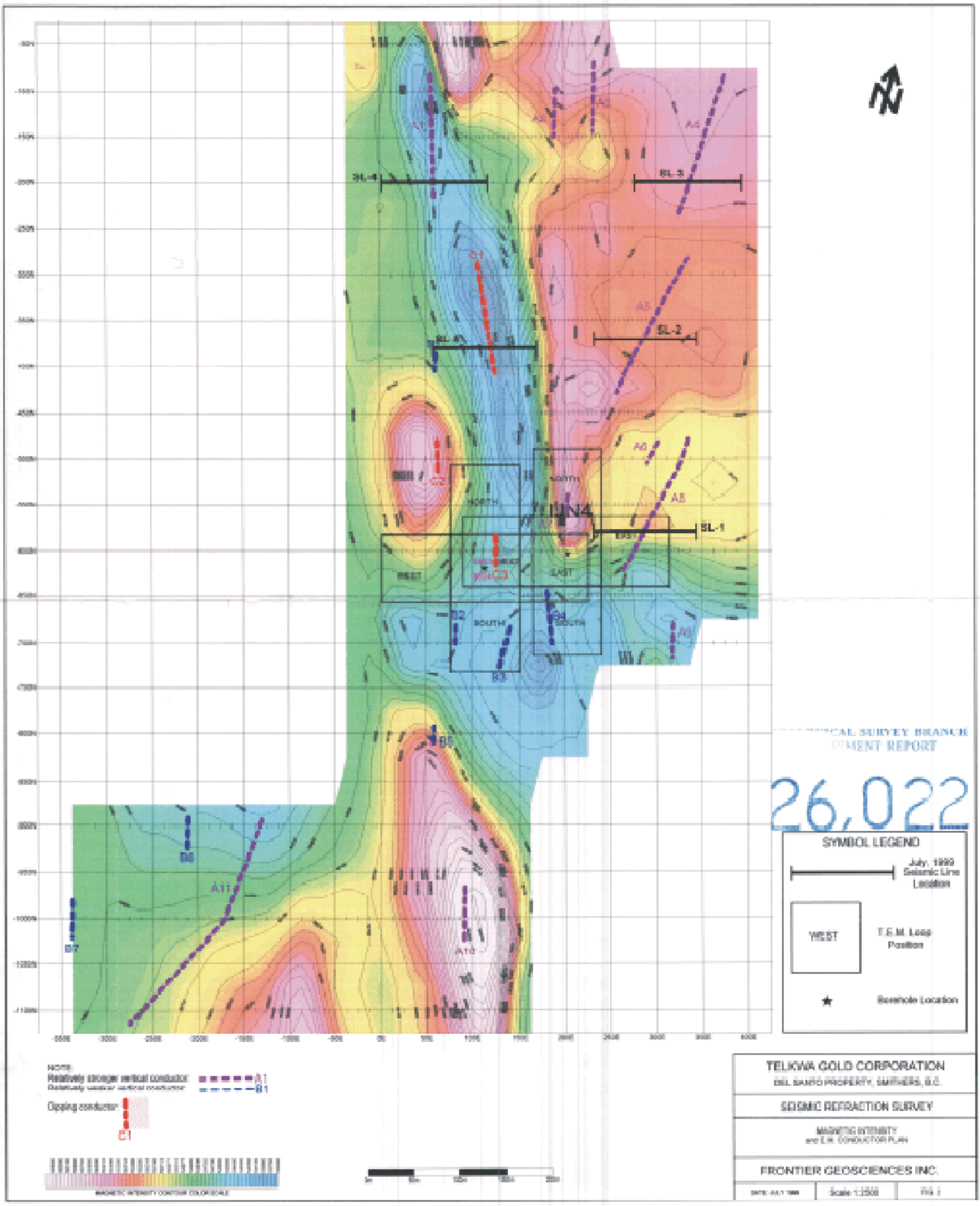
4) I am a member of good standing with the European Society of Exploration Geophysicists.

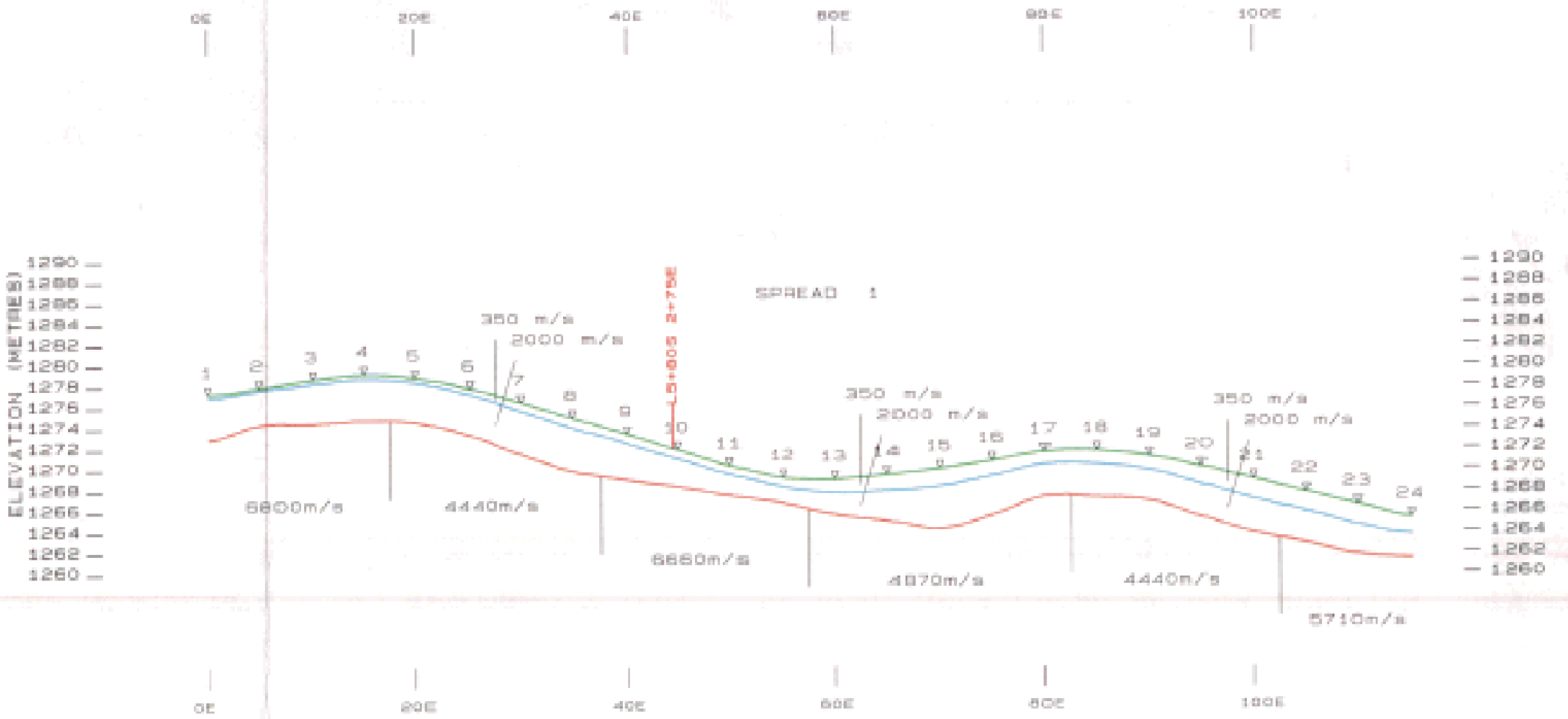
5) I have no direct, indirect, or contingent interest in the shares or business in the property of Telkwa Gold Corporation, nor do I intend to have any interest.

6) I supervised and interpreted the results of a seismic refraction survey carried out on the property of Telkwa Gold Corporation near Smithers, B.C. in the period July 12, 1999 to July 13, 1999.

DATED at North Vancouver, Province of British Columbia
this 7th day of September, 1999.

Russell A. Hillman, P.Eng.





SEISMIC LINE SL-1

NOTES:
VERTICAL SCALE 1: 500
HORIZONTAL SCALE 1: 500
INSTRUMENT: GEOMETRICS S-12

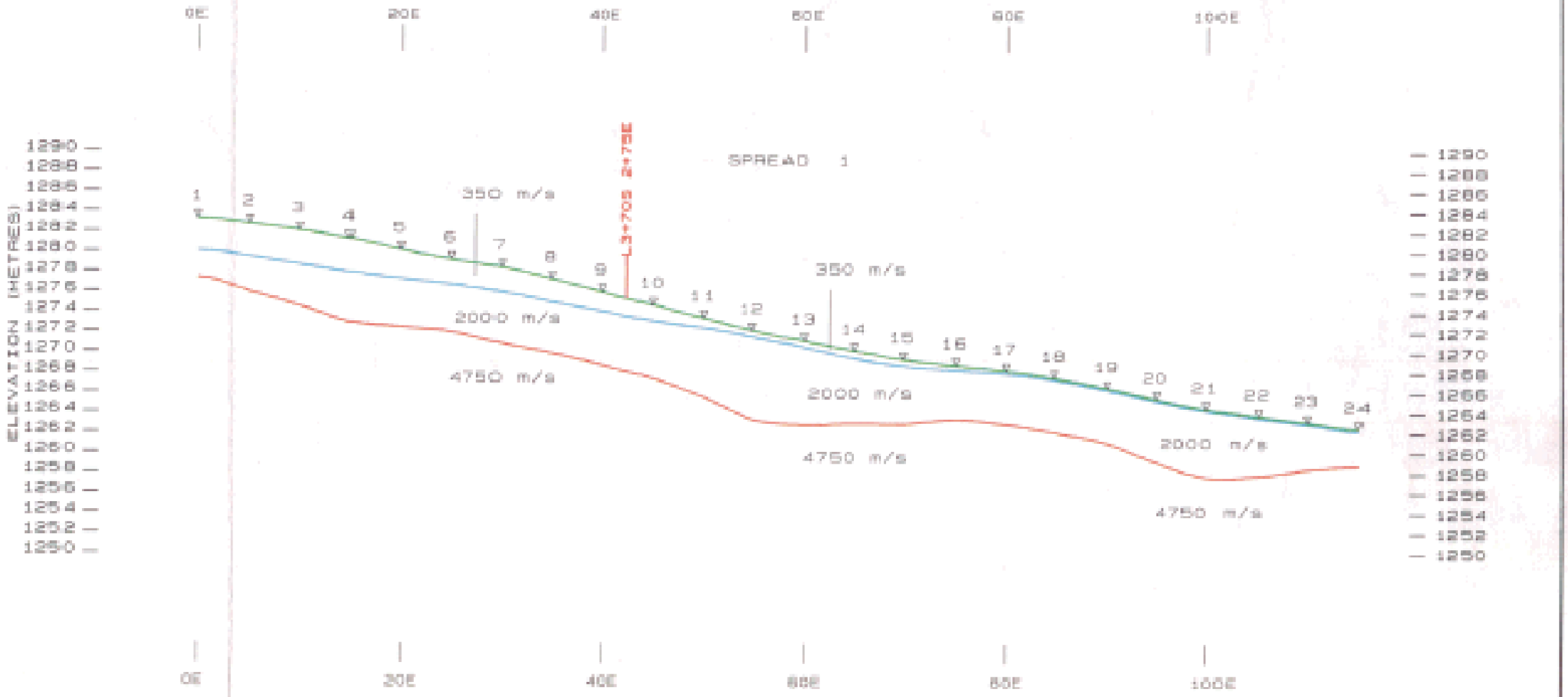
TELKWA GOLD CORPORATION
DEL SANTO PROPERTY, SMITHERS, B.C.

SEISMIC REFRACTION SURVEY

INTERPRETED DEPTH SECTION SL-1

FRONTIER GEOSCIENCES INC.

DATE: JULY 1999 | Fig. 3



SEISMIC LINE SL-2

NOTES:
VERTICAL SCALE 1: 500
HORIZONTAL SCALE 1: 500
INSTRUMENT: GEOMETRICS S-12

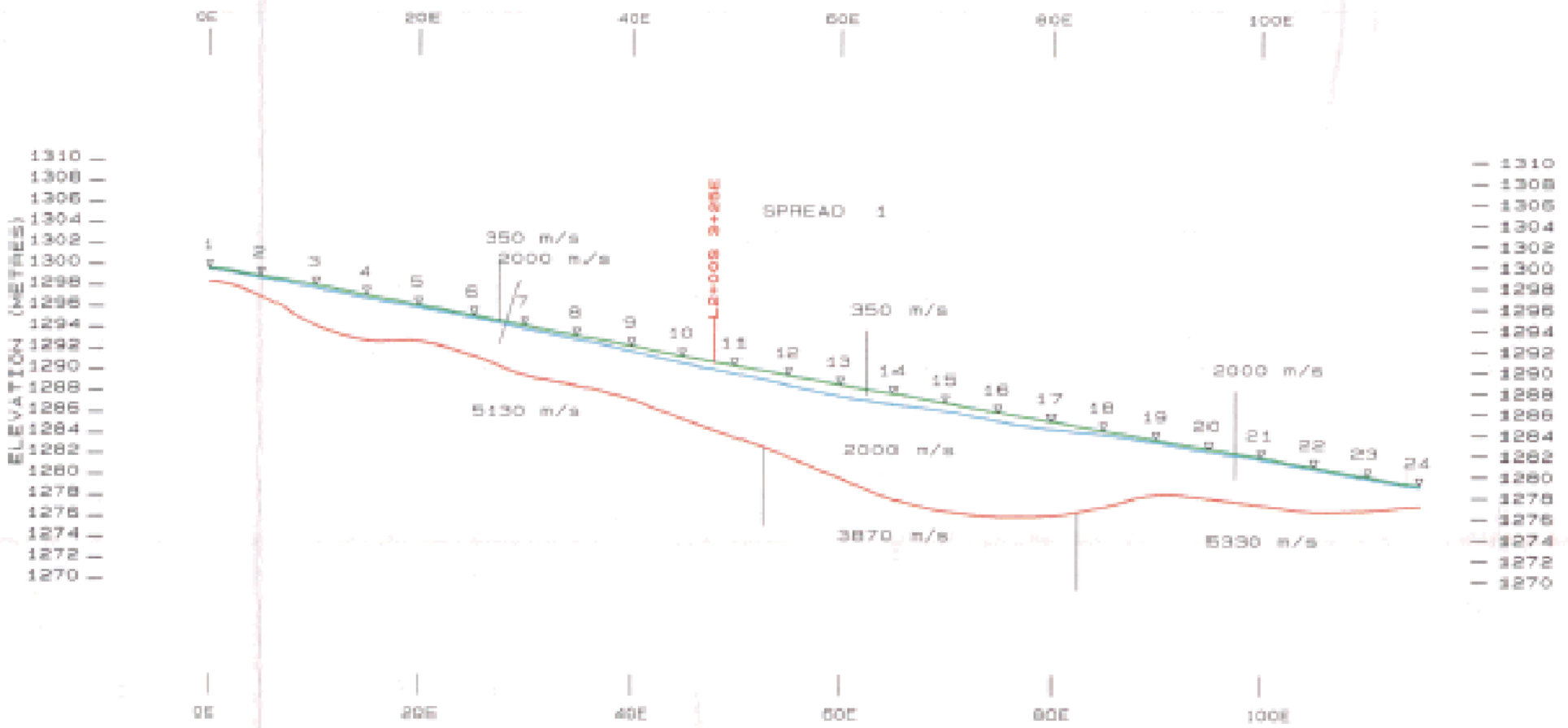
TELKWA GOLD CORPORATION
DEL SANTO PROPERTY, SMITHERS, B.C.

SEISMIC REFRACTION SURVEY

INTERPRETED DEPTH SECTION SL-2

FRONTIER GEOSCIENCES INC.

DATE: JULY 1999 | Fig. 4



NOTES:
VERTICAL SCALE 1: 500
HORIZONTAL SCALE 1: 500
INSTRUMENT: GEOMETRICS S-12

SEISMIC LINE SL-3

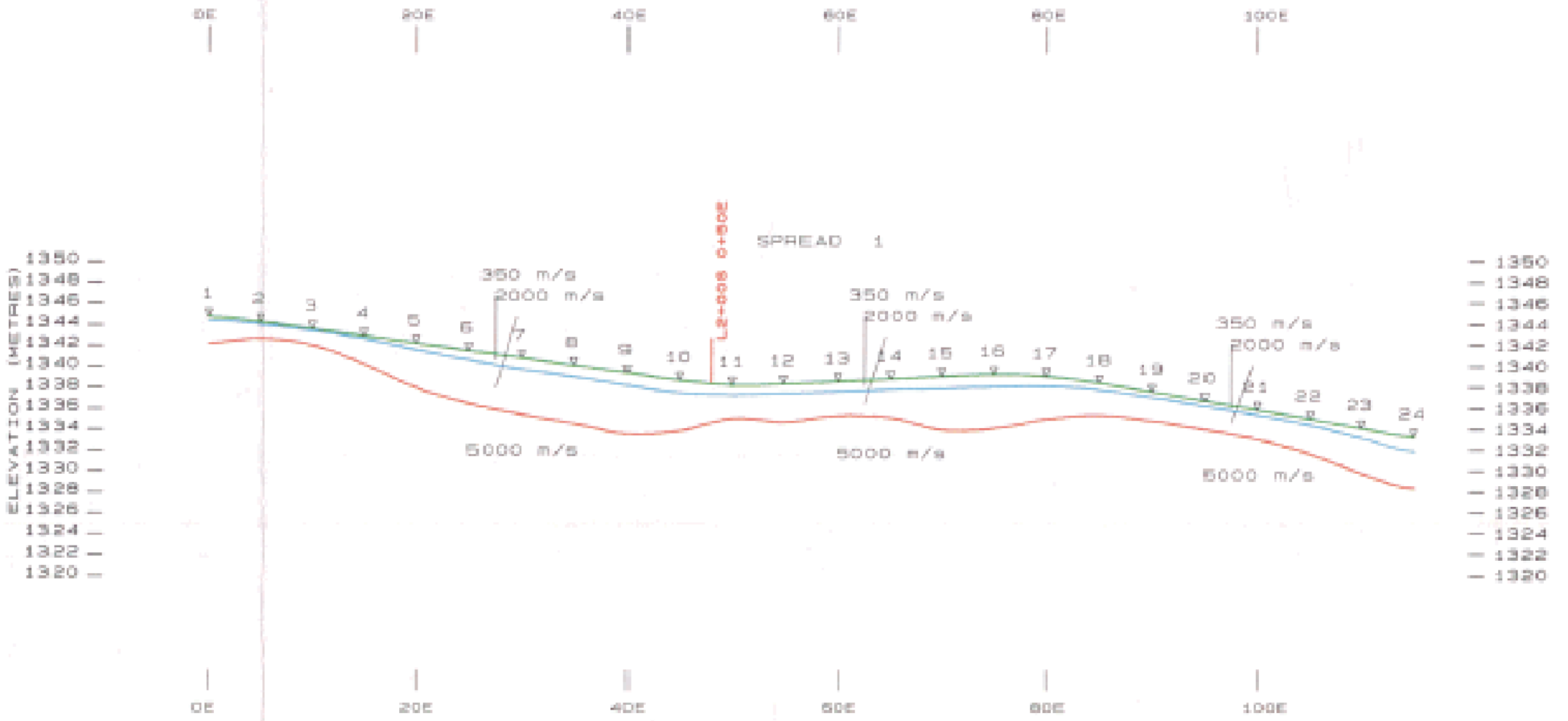
TELKWA GOLD CORPORATION
DEL SANTO PROPERTY, SMITHERS, B.C.

SEISMIC REFRACTION SURVEY

INTERPRETED DEPTH SECTION SL-3

FRONTIER GEOSCIENCES INC.

DATE: JULY 1989 | Fig. 5



NOTES:
VERTICAL SCALE 1: 500
HORIZONTAL SCALE 1: 500
INSTRUMENT: GEOMETRICS S-12

SEISMIC LINE SL-4

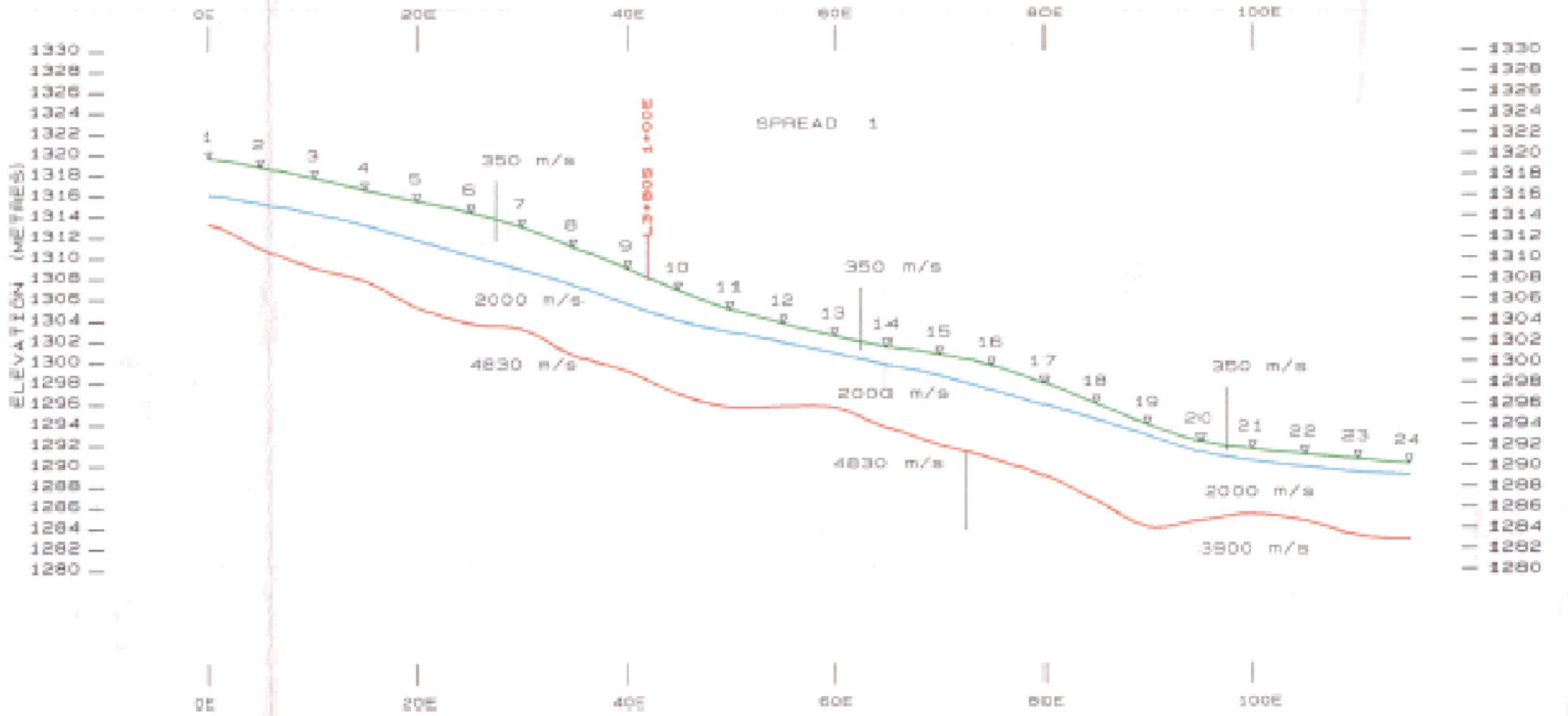
TELKWA GOLD CORPORATION
DEL SANTO PROPERTY, SMITHERS, B.C.

SEISMIC REFRACTION SURVEY

INTERPRETED DEPTH SECTION SL-4

FRONTIER GEOSCIENCES INC.

DATE: JULY 1999 | Fig. 6



NOTES:
VERTICAL SCALE 1: 500
HORIZONTAL SCALE 1: 500
INSTRUMENT: GEOMETRICS S-12

SEISMIC LINE SL-5

TELKWA GOLD CORPORATION
DEL SANTO PROPERTY, SMITHERS, B.C.

SEISMIC REFRACTION SURVEY

INTERPRETED DEPTH SECTION SL-5

FRONTIER GEOSCIENCES INC.

DATE: JULY 1999 | Fig. 7