GEOPHYSICAL SURVEY REPORT

ON THE

NAT CLAIMS

OMINECA MINING DIVISION

Lat. 55° 21'N Long. 123° 43'W

NTS 93-O-5E

Property Owner: Ruanco Enterprises Ltd.
Operator: Placer Dome Inc.

R.W. Cannon, P.Eng.

November, 1988

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INTRODUCTION

The following report describes the magnetometer and VLF-EM surveys conducted by Placer Dome Inc. on the Nat claims during the period August 8-13, 1988. The property is located west of the Nation River and is directly west of MacKenzie, British Columbia. The survey covered 14.7 kms of line along 16 lines.

SUMMARY

The magnetometer survey proved useful in outlining the unaltered ultramafic rock unit. VLF-EM conductors were located in zones of low magnetic relief and are most likely faults. No correlation could be made between the soil geochemical results and the ground geophysics. Therefore, magnetometer and VLF surveys should only be used as an aid to geological mapping.

LOCATION AND ACCESS

The Nat claims are located in Central British Columbia, 38 kms due west of the town of MacKenzie. Access to the property is by ferry across Williston Lake from MacKenzie and then by two wheel drive along gravel logging roads for a distance of approximately 60 kilometres.

PROPERTY STATUS

The Nat claims are as follows:

NAME	NUMBER	EXPIRY DATE	RECORD NUMBERS
Nat 1-16	16	Dec. 21, 1988	9217-9232

PREVIOUS WORK

Prospecting, silt sampling and outcrop sampling was conducted by Ruanco Enterprises. This lead to the discovery of an altered and pyritized fault zone in outcrop. Rock samples taken from this area were anomalous for arsenic (up to 460 ppm), with some containing detectable gold up to 0.14 ppm. A silt sample from an east-west drainage across the northern projection of the fault returned 0.17 ppm gold.

PHYSIOGRAPHY

The property is located on an east facing side-hill which has a moderate gradient towards the Nation River. Several east-west drainages cut through the claim block. Small outcrops can be found in the sides of these gullies.

Forest cover on the grid consists of spruce, balsam, alder and lodgepole pine. Approximately 1/3 of the grid has been logged and a new growth of trees has already started.

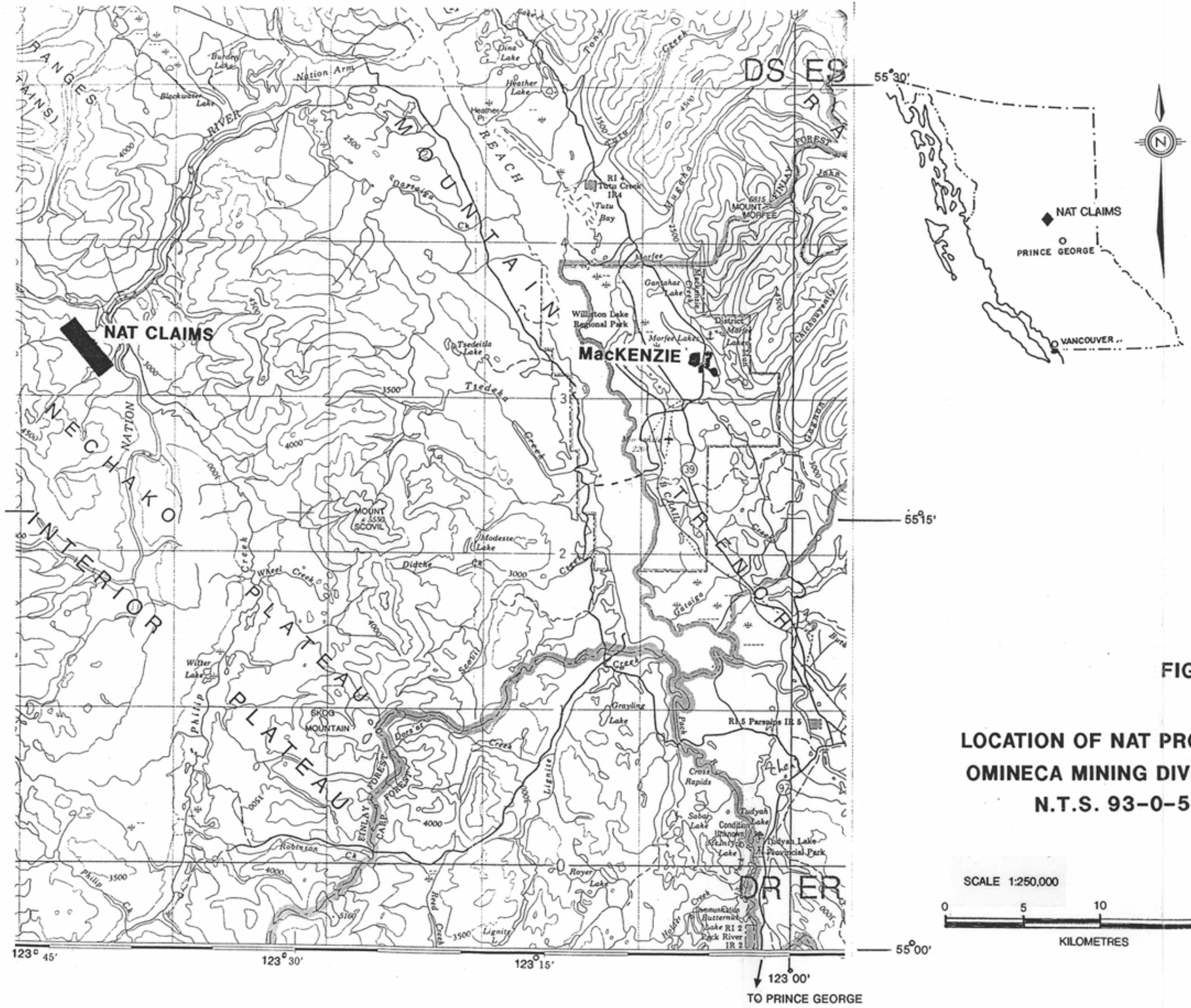


FIGURE 1

LOCATION OF NAT PROPERTY
OMINECA MINING DIVISION
N.T.S. 93-0-5

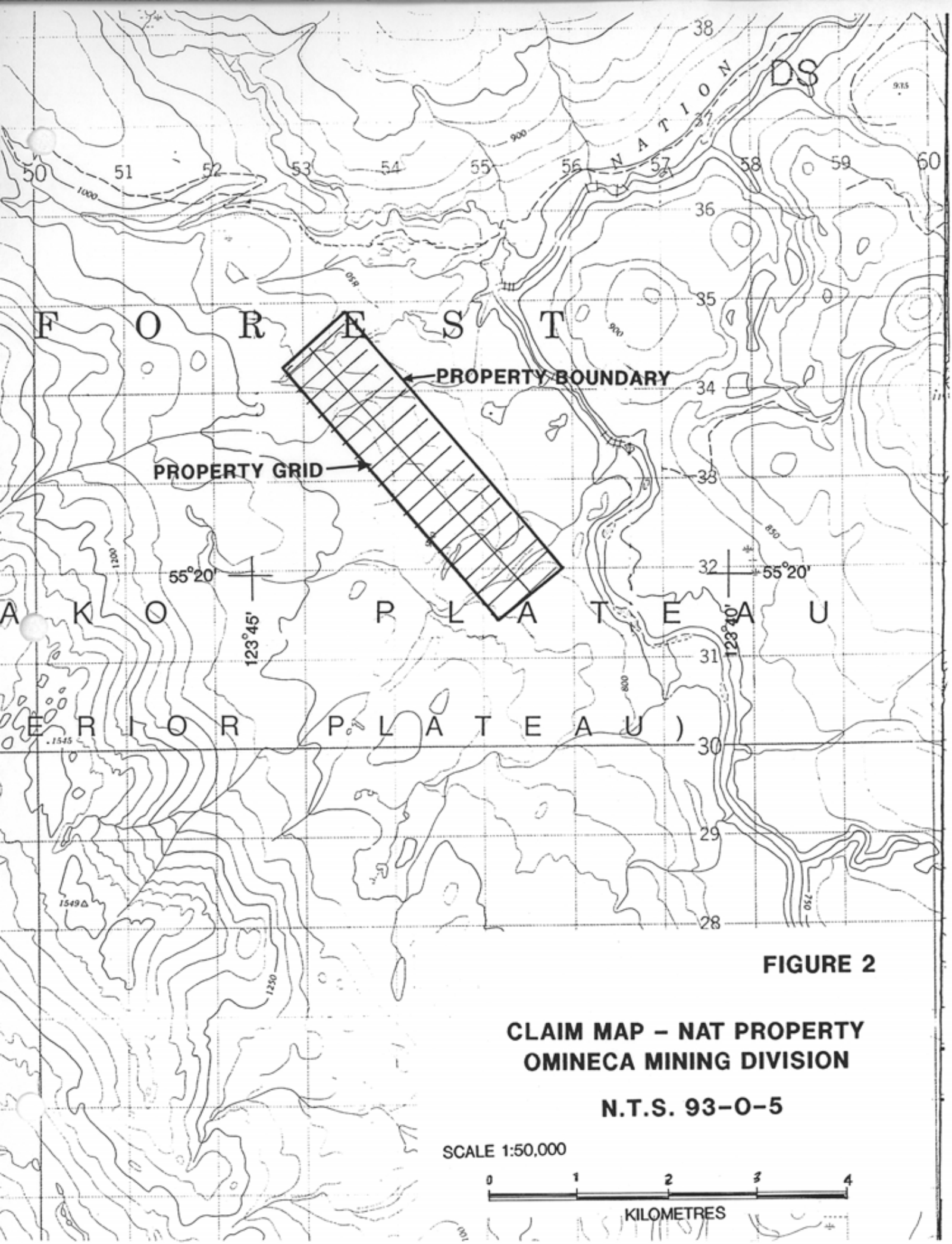


FIGURE 2

CLAIM MAP – NAT PROPERTY
OMINECA MINING DIVISION

N.T.S. 93–O–5

SCALE 1:50,000

0 1 2 3 4

KILOMETRES

GEOLOGY

The claims are underlain by argillites and phyllites of the Slide Mountain Group which are of Mississippian age. A 50 m wide, altered and mineralized, northwest trending fault zone is coincidental with a magnetic low shown on the government aeromagnetic survey map. Some ultramafic rocks occur within this fault and there are ultramafic rocks occurring on the west side of the property.

GEOPHYSICAL SURVEY

VLF-EM and magnetometer surveys were conducted along 14.7 kms of line. The VLF survey was conducted using the Seattle transmitting station NLK (24.8 kHz) with readings being taken at 20 m stations. The direction to the Seattle station was 175° azimuth and therefore readings were taken facing 085° azimuth.

Magnetometer readings were taken at 10 m intervals and corrections for drift and diurnal changes were made by use of a base station recording magnetometer.

INSTRUMENTATION AND PROCEDURES

The magnetometer survey was conducted using two Geometrics G-856A portable proton magnetometers (memory-mags). One was used in the field mode while the other was used in a base station mode. The internal clocks were synchronized before commencement of the survey and subsequent daily readings were dumped out to floppy disk in a Kaypro I portable computer. The data from the two magnetometers was merged and corrected for diurnal drift from an established base station value. The corrected results were plotted as field profiles and also stored on disk for eventual transfer to a Sun Microsystem work station for final plotting.

The VLF-EM survey employed a Geonics EM-16 which used the Seattle transmitting station. VLF readings were also entered onto floppy disk in a Kaypro I computer; and field profiles of In-phase, Quadrature and Fraser Filter data were plotted. The stored data was transferred to a Sun Microsystems work station for final processing and plotting.

SURVEY RESULTS

The magnetometer survey results were plotted as plan maps of stacked profiles, contoured data and posted data at scales of 1:5000 (see plates in folder at back of report).

The VLF-EM survey results were plotted as stacked In-phase, Quadrature and Fraser Filter profiles on a plan map at a scale of 1:5000. Plan maps of posted In-phase and Quadrature values as well as a plan of the contoured Fraser Filter were also plotted.

The Fraser Filter data was calculated as per the method put forth by D.C. Fraser (1969, Contouring of VLF-EM data: Geophysics, v. 34, p. 958-967). See plates in the folder at the back of report.

DISCUSSION OF RESULTS

The magnetometer survey revealed the western portion of the claim group to be underlain by a magnetic rock unit which has been identified on line 4000 N as ultramafic. The eastern margin of this magnetic unit is located as listed:

L 3200 N, 2120 E	L 3400 N, 2200 E	L 3600 N, 2200 E
L 3800 N, 2150 E	L 4000 N, 2090 E	L 4200 N, 2130 E
L 4400 N, 2100 E		

The contact is marked by a VLF conductor on lines 3200 N through 4000 N.

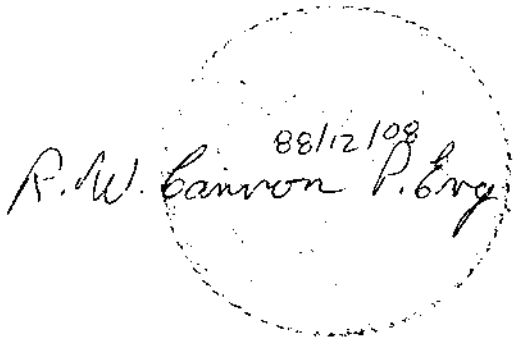
A dyke like magnetic body was detected on lines 4000 N, 2550 E through 5000 N, 2200 E. This anomaly is also bounded on the east by a VLF conductor.

VLF-EM conductors detected by the geophysical survey have predominantly north-south and north-northwest strikes. These conductors appear to have been disrupted by east-west structures. The VLF conductor which was detected between L 2600 N, 2560 E and L 3200 N, 2460 E has carbonitized and silicified ultramafic rock mapped along both sides. The VLF conductors are, in the most part, coincident with magnetic lows and are therefore most likely faults.

There appears to be no direct correlation between the geochemical anomalies and the geophysical results.

CONCLUSIONS AND RECOMMENDATIONS

It was concluded that the magnetic highs could be used to map the unaltered ultramafics and that the VLF conductors were expressions of fault zones which could possibly be mineralized. It is recommended that magnetic and VLF-EM surveys should be used to aid geological mapping in areas of sparse outcrop.



STATEMENT OF EXPENDITURES ON THE NAT CLAIMS

Salaries and Benefits	
R. Cannon 6 days @ $375.00	$2250.00
H. Goddard 6 days @ $250.00	$1500.00
Airfares- Van. to P. George Return	
2 X $350.00	$ 700.00
Room and Board	
2 X 6 X $90.00/day	$1080.00
Vehicle Rental and Gas	$ 600.00
Equipment Rental	
2 G-856 Magnetometers @ $300.00/wk	$ 600.00
1 EM-16 VLF Unit @ $250.00/wk	$ 250.00
1 Kaypro I Computer @ $150.00/wk	$ 150.00
Report, maps, drafting	
4 Days @ $375.00	$1500.00
Total Expenditures	$8630.00

STATEMENT OF QUALIFICATIONS

I, Richard W. Cannon, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a graduate of the University of British Columbia where I received a B. A. Sc. in Geological Engineering (Geophysics Option) in May 1966.

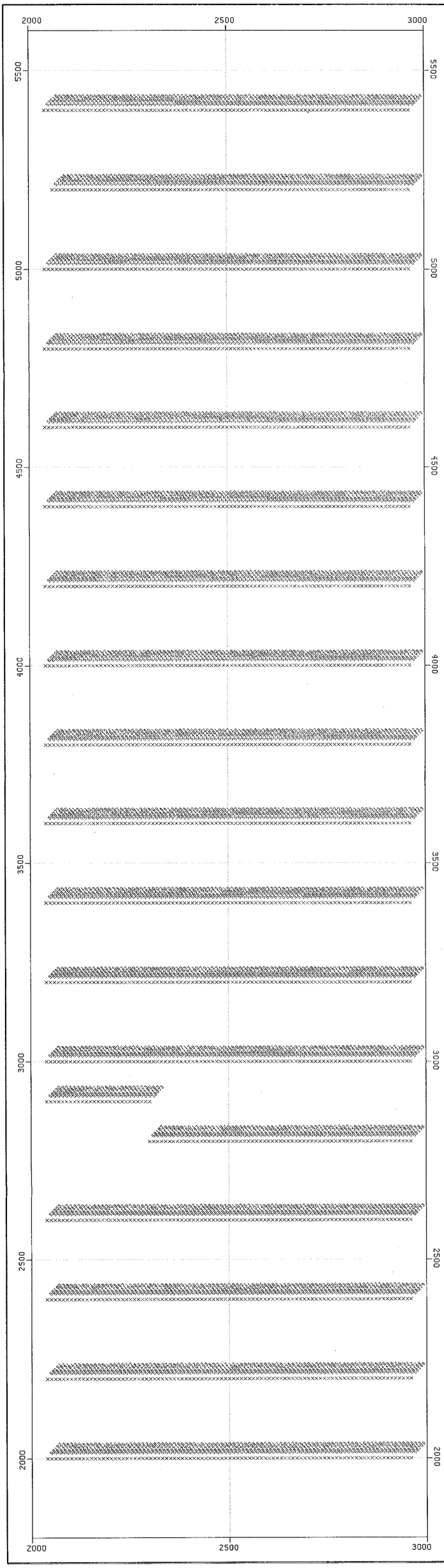
2. I am a member of the Association of Professional Engineers of British Columbia and have been so since 1968. Registration No. 6742.

3. I am a member of the Canadian Institute of Mining and Metallurgy, Society of Exploration Geophysicists, and the B. C. Geophysical Society.

4. I have practiced my profession since 1966.

R. W. Cannon 88/12/08 P. Eng

R. W. Cannon, P. Eng.



NAT CLAIMS
POSTED MAGNETIC DATA

UNITS = NANOTESLAS

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

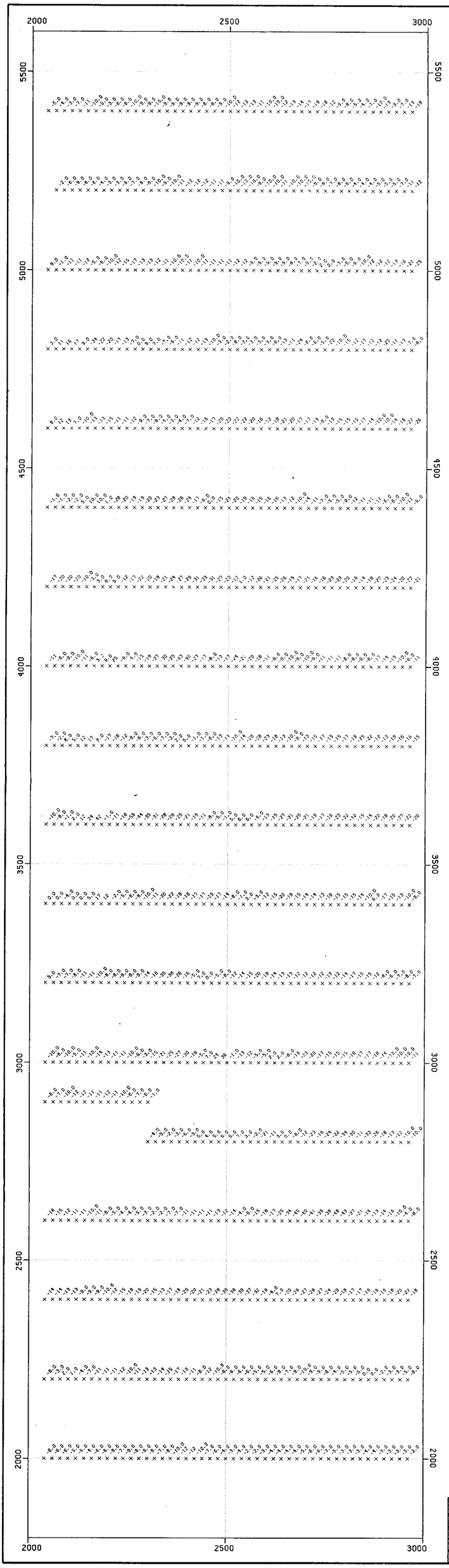
	FIELD	FILE
× POINTS:	MAG	NAT.MAGS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,181
Part 1 of 2

0 200 400 600
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS
DATE 88:09:26	POSTED MAGNETIC DATA
SCALE 1:5000	
NO.	PLATE 01



NAT CLAIMS
POSTED IN-PHASE DATA

UNITS = % OF PRIMARY FIELD

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

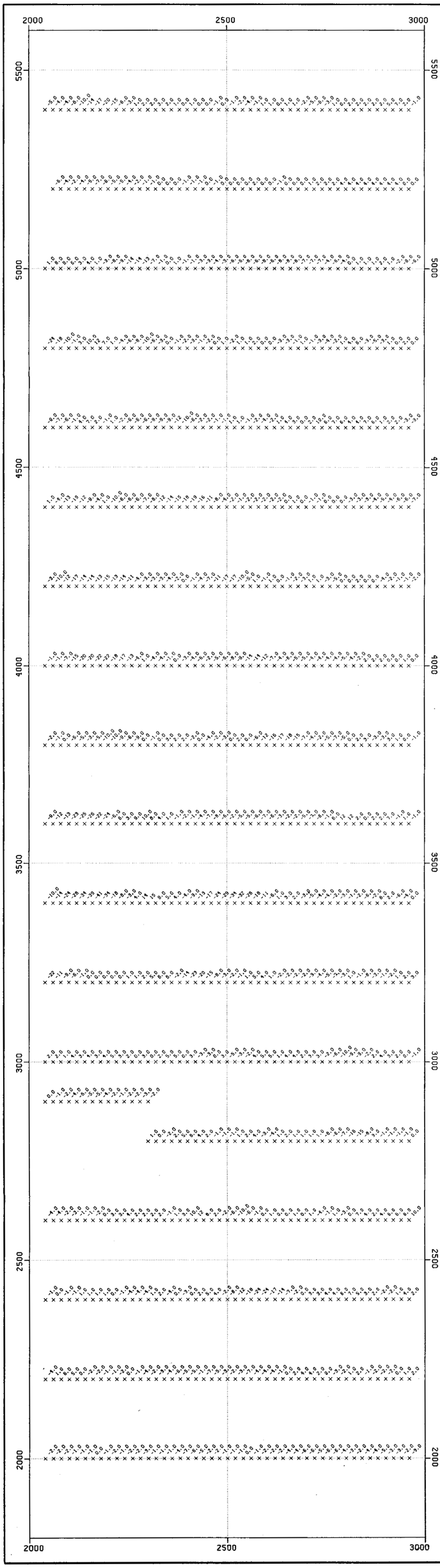
	FIELD	FILE
× POINTS:	IP	NAT.IPS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,181
Part 1 of 2

0 200 400 600
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS
DATE 88:09:26	POSTED IN-PHASE DATA
SCALE 1:5000	
NO.	PLATE 02



NAT CLAIMS
POSTED QUADRATURE DATA

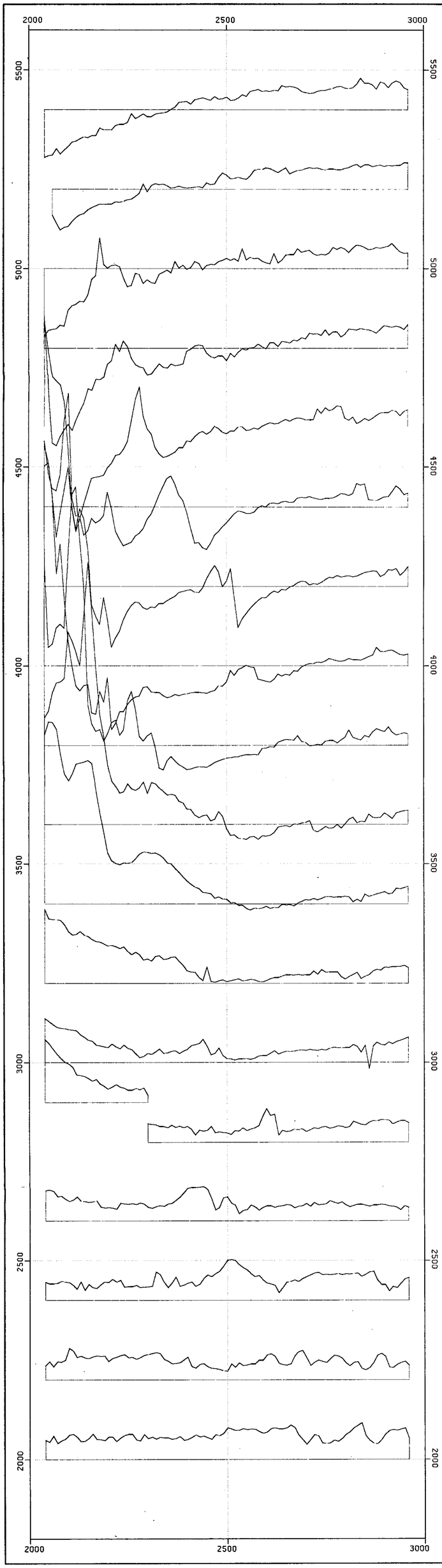
UNITS = % OF PRIMARY FIELD

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

	FIELD	FILE
× POINTS:	QD	NAT.DQF

0 200 400 600
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS
DATE 88:09:26	POSTED QUADRATURE DATA
SCALE 1:5000	
	NO. PLATE 03



NAT CLAIMS MAGNETOMETER SURVEY
STACKED PROFILES

UNITS = NANOTESLAS

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

	FIELD	FILE
PROFILES:	MAG	NAT.MAGS
SCALE:		200 UNITS / CM
BASE LEVEL:		58000

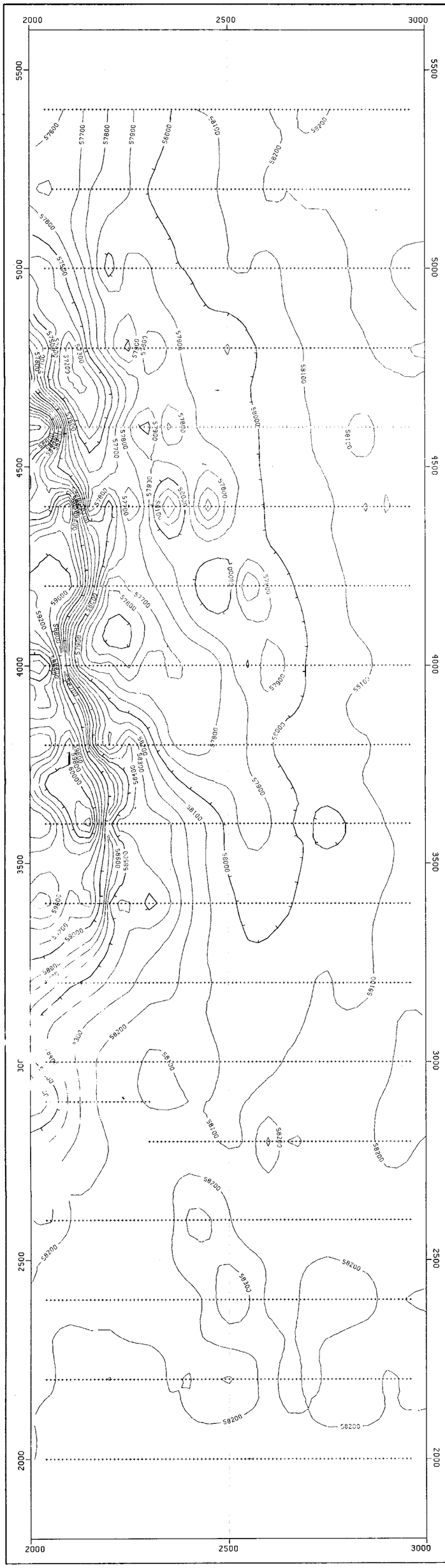
0 125 250 375 500
METRES

PLACER DOME INC.

DRAWN	RWC
DATE	88:08:13
SCALE	1:5000

NAT CLAIMS MAGNETOMETER SURVEY
STACKED PROFILES

NO. PLATE 04



NAT CLAIMS
CONTOURED MAGNETOMETER DATA

UNITS = NANOTESLAS

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

	FIELD	FILE
+ CONTOURS:	MAG	NAT.MAGS

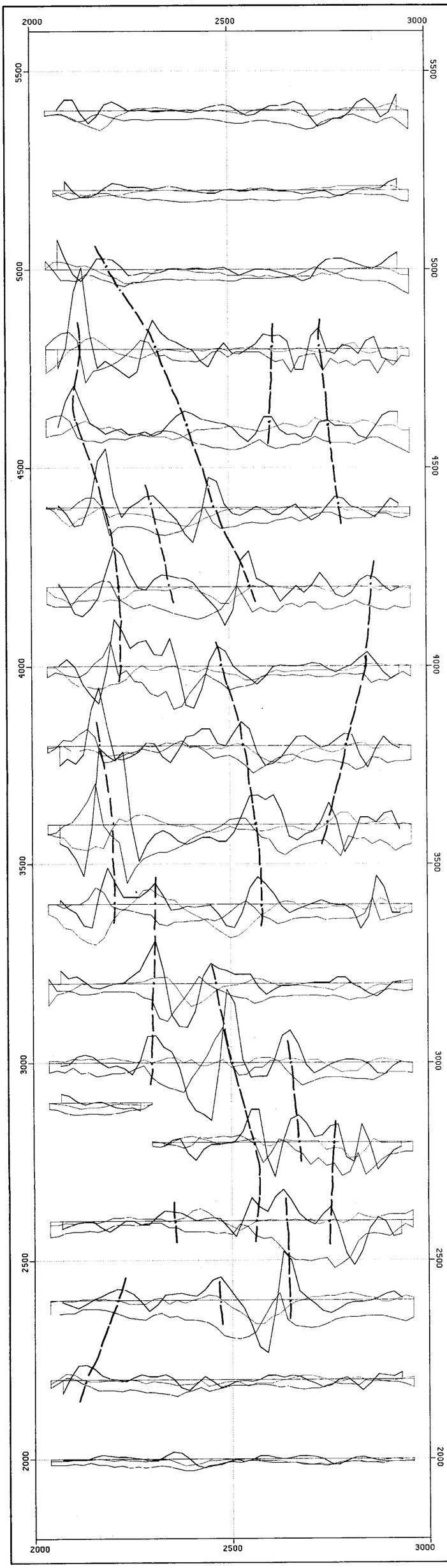
GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,181

Part 1 of 2

0 125 250 375 500
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS
DATE 88:08:13	CONTOURED MAGNETOMETER DATA
SCALE 1:5000	
	NO. PLATE 05



NAT CLAIMS VLF SURVEY
STACKED PROFILES (SEATTLE TX)

LIGHT LINE - QUADRATURE
MEDIUM LINE - IN-PHASE
DARK LINE - FRASER FILTER

SEATTLE STN AT 175 AZ.

UNITS = % OF PRIMARY FIELD

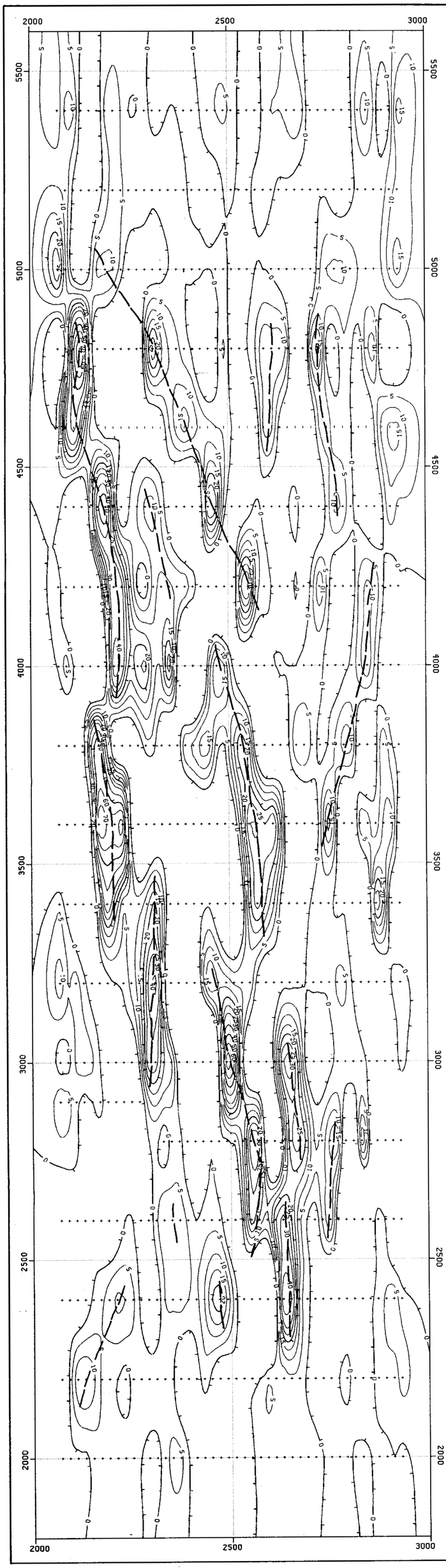
VLF CONDUCTORS

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

	FIELD	FILE
PROFILES: IP		NAT.IPS
SCALE:	20.0 UNITS / CM	
BASE LEVEL:	0.0	
PROFILES: QD		NAT.QDS
SCALE:	20.0 UNITS / CM	
BASE LEVEL:	0.0	
PROFILES: FF		NAT.FFS
SCALE:	20.0 UNITS / CM	
BASE LEVEL:	0.0	

0 125 250 375 500
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS VLF SURVEY
DATE 88:08:13	STACKED PROFILES (SEATTLE TX)
SCALE 1:5000	
	NO. PLATE 08



VLF CONDUCTORS

DATA PLOTTED ON THIS MAP:
DIRECTORY: /PLACER1_1E/EXPL/NAT/GP

	FIELD	FILE
+ CONTOURS:	FF	NAT.FFS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,181
Part 1 of 2

0 125 250 375 500
METRES

PLACER DOME INC.	
DRAWN RWC	NAT CLAIMS VLF SURVEY
DATE 88:08:13	CONTOURED FRASER FILTER DATA
SCALE 1:5000	
	NO. PLATE 07