

BLUEBIRD RESOURCES LTD.

A GEOPHYSICAL ASSESSMENT REPORT ON A GROUND MAGNETIC AND VLF ELECTROMAGNETIC

SURVEY ON THE
NORTH 40 PROPERTY NEAR
SALMO, BRITISH COLUMBIA

NELSON MINING DIVISION

UTM COORDINATES

ZONE
11 5446000 N
506000 E

NTS 82F/2W

LAT 49-10-08
LONG 116-55-04

BY

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORTS
DATE RECEIVED DEC 04 1995
<i>Amended</i> MAY 21 1996

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NOV 28 1995
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TRANS # _____

LLOYD GEOPHYSICS INC.

S. John A. Cornock, B.Sc.

and

John Lloyd, M.Sc., P.Eng.

GEOLOGICAL BRANCH
ASSESSMENT REPORT
OCTOBER, 1995

FILMED

24,151



Lloyd Geophysics

BLUEBIRD RESOURCES LTD.

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5446000 N

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Lat. 49°10'8"

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NTS 82F/2W

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OCTOBER, 1995



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SUMMARY

In the hope of locating fracture/shear zones within granodiorite which contain sulphidized quartz veins, Bluebird Resources Ltd. contracted Lloyd Geophysics Inc. to carry out a ground magnetic and VLF electromagnetic survey. The survey took place from October 13th to October 18th, 1995 on the North 40 property near Salmo, British Columbia.

The ground magnetic survey was not helpful in depicting these fracture/shear zones but did locate a more major fault having a strike of about 65°. The VLF data defined a number of conductors which are believed to represent these fracture/shear zones within the granitic rocks.

The conductors with the greatest potential are shown and priority ranked on the Compilation Map (Dwg. No. 95374-07). Due to the fact that the northeast-southwest trend of these conductors extends off the boundaries of the grid, the potential for expansion is good. Therefore it is recommended that additional surveying by magnetic and/or VLF methods be seriously considered when planning future programmes.

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1.0 INTRODUCTION

In the hope of locating fracture/shear zones within granodiorite which contain sulphidized quartz veins, Bluebird Resources Ltd. contracted Lloyd Geophysics Inc. to carry out a ground magnetic and VLF electromagnetic (VLF-EM) survey. The survey took place from October 13th to October 18th, 1995 on the North 40 property near Salmo, British Columbia.

2.0 PROPERTY LOCATION AND ACCESS

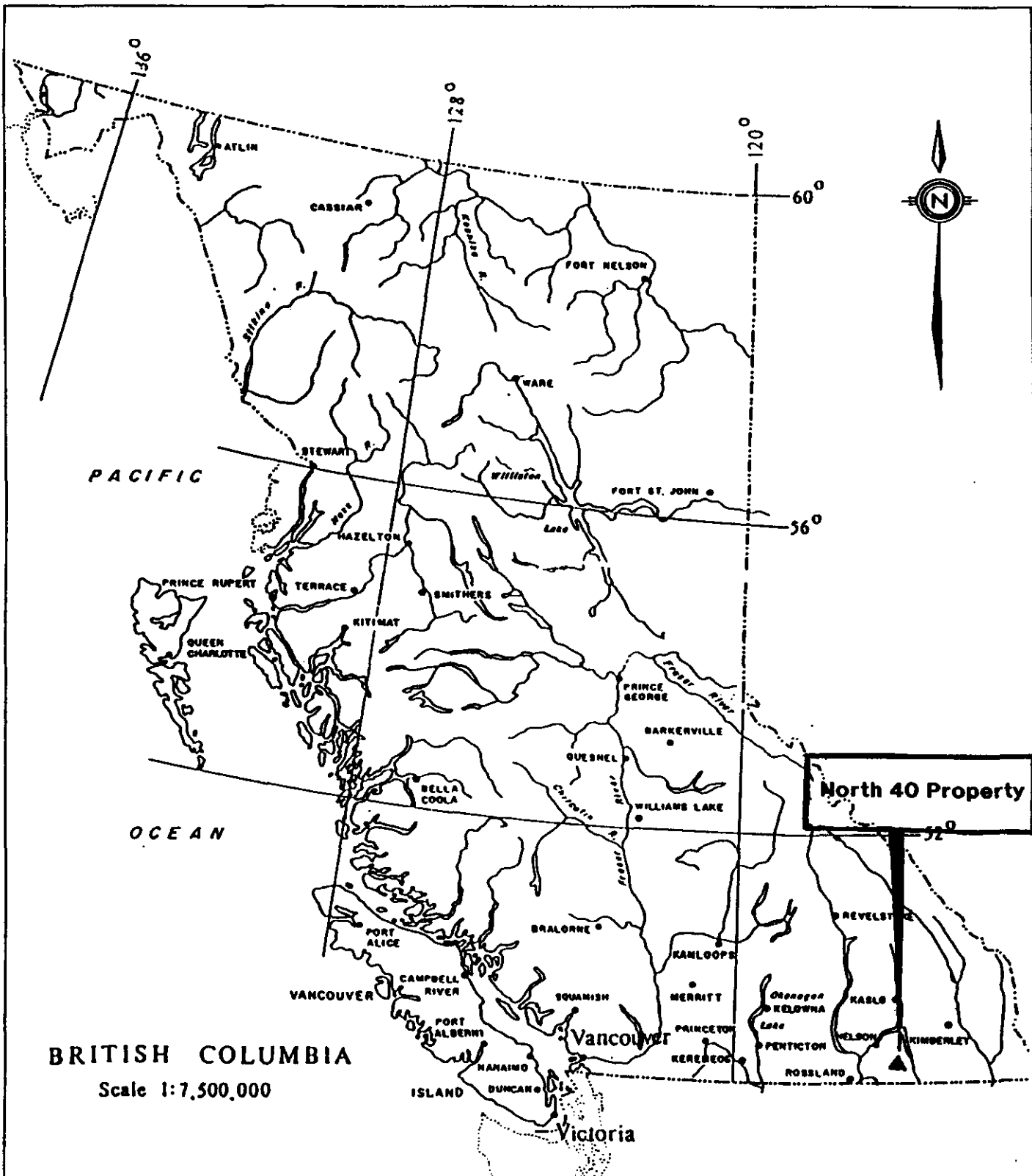
The property is located approximately 60 kilometres east of Salmo, British Columbia in the Nelson Mining Division, NTS 82F/2W at UTM coordinates 5446000N/506000E.

Access to the property is by truck east along Highway 3 from Salmo for approximately 60 kilometres and then north for about 10 kilometres along logging roads.

3.0 PROPERTY STATUS AND CLAIM HOLDINGS

The claim information listed below is supplied directly by Bluebird Resources Ltd.:

<u>Claim Name</u>	<u>Number</u>	<u># of Units</u>
NORTH 42	325570	20
NORTH 40	324215	20
SOUTH 40	333099	20
BLAZE	340604	15
ARK 1	340605	1
ARK 2	340606	1
ARK 3	340607	1
ARK 4	340608	1
ARK 5	340609	1



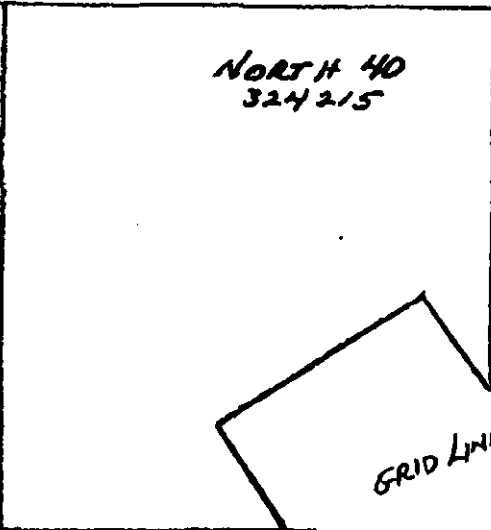
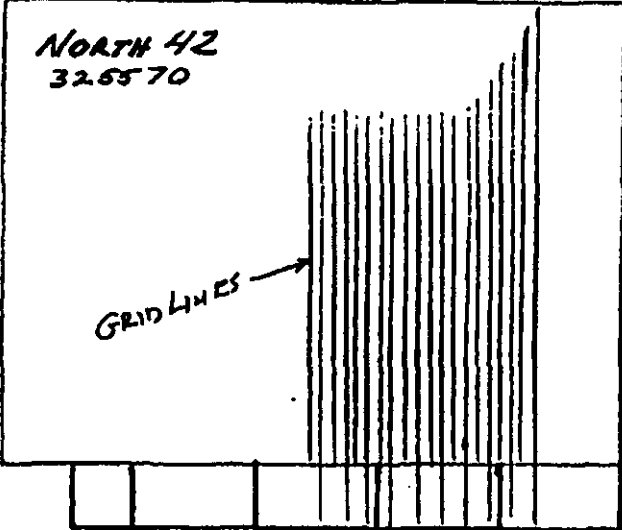
BRITISH COLUMBIA
Scale 1:7,500,000

North 40 Property

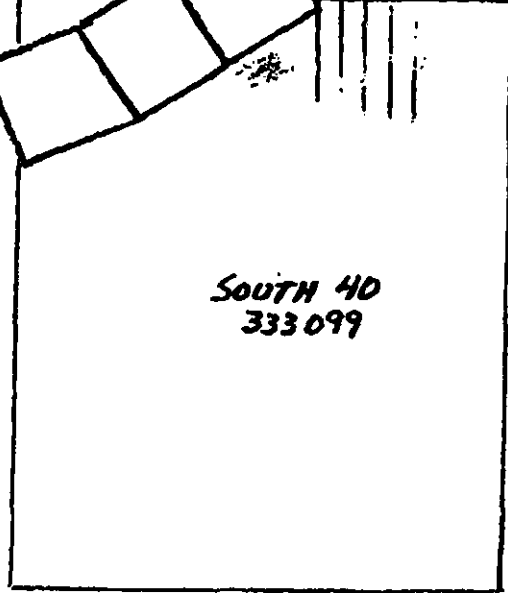
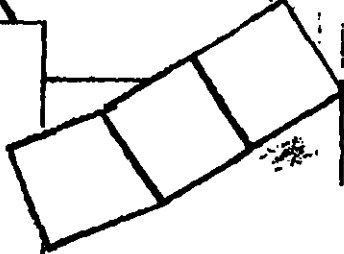
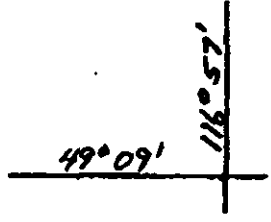
BLUEBIRD RESOURCES LTD.
North 40 Property
PROPERTY LOCATION



1131680
82F/2W



ARR 1 340605
ARR 2 340606
ARR 3 340607
ARR 4 340608
ARR 5 340609



BLUEBIRD RESOURCES LTD.
NORTH 40 GROUP



Lloyd Geophysics

4.0 GEOLOGY

The North 40 property is located in a geological region dominated by granitic intrusives of early to late Cretaceous age. The Mine stock granodiorite appears to underlie the North 40 prospect and also hosts the historic Bayonne gold and silver mine which lies directly to the south. To the west of the North 40 property lies the historic Spokane gold and silver mine. The mine is hosted within the similar granodiorites of the Wall stock.

The production from the Bayonne and Spokane mines occurred from mineralized quartz veins within fissures of the hosting granodiorite. The fissures have a northeast to easterly trend and are extensive in length and depth.

5.0 INSTRUMENT SPECIFICATIONS

5.1 Magnetometer Survey Equipment

The magnetometer equipment used was the Omni proton precession magnetometer system consisting of, for this project, 2 Omni Plus magnetometers manufactured by EDA Instruments Inc., Toronto, Canada.

The system is completely software/microprocessor controlled and measures and stores in memory

- a) the total field component of the earth's magnetic field and
- b) the vertical gradient of the earth's magnetic field across a fixed sensor head separation of 50 centimetres.

The instrument also identifies and stores in memory the location and time of each measurement and computes the statistical error of the reading and stores the decay and strength of the signal being measured.

Throughout each survey day, a similar base station magnetometer measures and stores in

memory the daily fluctuations of the earth's magnetic field. At the end of each survey day the field data is merged with the base station data and diurnal corrections are automatically applied to the field data.

5.2 VLF-EM Survey Equipment

The equipment used was the Omni Plus combined magnetometer/VLF-EM system manufactured by EDA Instruments Inc., Toronto, Canada.

The VLF-EM hardware of the Omni Plus system has the ability to measure both the VLF-EM magnetic and electric fields from up to 3 different transmitting stations. The system requires no operator orientation of the sensor head towards the transmitting stations. This is achieved by the utilization of 3 orthogonal sensor coils rather than the 2 sensor coils used in other systems.

6.0 SURVEY SPECIFICATIONS

The ground magnetic and VLF-EM data was gathered at 25 metre station intervals on lines 50 metres apart. Two VLF transmitting stations were used -- Jim Creek, Washington, U.S.A. (NLK 24.8 kHz) and Lualualei, Hawaii, U.S.A. (NPM 23.4 kHz).

7.0 DATA PROCESSING

The data collected was processed in the field at the end of each survey day using a portable Compaq 486 computer and a Fujitsu printer.

In our Vancouver office, the data was transferred to mylar using a Hewlett-Packard Design Jet 650 colour plotter.

8.0 DATA PRESENTATION

The data gathered on this project is presented on the following 7 maps:

1.	Total Field Magnetic Profiles	95374-01
2.	Total Field Magnetic Contours	95374-02
3.	VLF-EM Profiles (Hawaii)	95374-03
4.	VLF-EM Fraser Filter Contours (Hawaii)	95374-04
5.	VLF-EM Profiles (Jim Creek)	95374-05
6.	VLF-EM Fraser Filter Contours (Jim Creek)	95374 06
7.	Compilation Map	95374-07

9.0 DISCUSSION OF RESULTS

The ground magnetic survey on the North 40 property has outlined a number of areas which are only subtly different magnetically from one another. The values have a total range of only about 350nT but clearly outline an arcuate shaped magnetic high in the center of the property which extends off to the east (see Compilation Map, Dwg. No. 95374-07). Due to the fact that the range is so low, this data most likely represents a contact between the granodiorite and another intrusive body.

This data has also depicted a left-lateral fault which strikes at 65° and, based on the offset of the magnetic high, has resulted in a heave of approximately 175 metres (See Dwg. No. 95374-07).

The VLF electromagnetic data has defined a number of conductors across the property which have a general strike of 60°.

All of these conductors shown on the Compilation Map (Dwg. No.:95374-07) represent possible fracture/shear zones within the granitic rocks. The quality of each of these conductors has been evaluated and shown on the Compilation Map with the conductors shown as "Good VLF Conductors" representing those of highest priority - namely #1,2,3,4,5,6,9 and 11.

10.0 CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the ground magnetic data has been a useful tool in defining the varying grades of the granitic host rocks and in locating a possible fault. It was not, however useful in locating the fracture/shear zones.

The VLF-EM survey has clearly outlined a number of northeast trending conductors which represent possible fracture/shear zones. The conductors with the greatest potential are shown as "Good VLF Conductors" on the Compilation Map and should be given first priority in conjunction with geochemistry and geology when planning a trenching and/or drilling program.

Due to the fact that the northeast-southwest trend of these conductors extends off the boundaries of the grid, the potential for expansion is very good. Therefore, it is recommended that where land holdings permit additional surveying by magnetic and/or VLF methods be seriously considered when planning future programmes.

Respectfully submitted,
LLOYD GEOPHYSICS INC.



S. John A. Cornock, B.Sc.



John Lloyd, M.Sc., P.Eng.

APPENDIX A

PERSONNEL EMPLOYED ON SURVEY

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Dates Worked</u>
J. Lloyd	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Oct 26/95
J. Cornock	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Oct 13-18/95 Oct 23-25/95

APPENDIX B

COST OF SURVEY AND REPORTING

Lloyd Geophysics Inc. contracted the acquisition of the ground magnetic and VLF-EM data on a per day basis. Mobilization/Demobilization, truck rental, living and travelling expenses, data processing, computer plotting, map reproduction and interpretation and report writing were additional costs. The breakdown of these costs is as follows:

Mobilization/Demobilization	\$ 1,200.00
Truck	632.43
Data Acquisition	2,900.00
Living and Travelling	381.21
Data Processing and Computer Plotting	715.00
Consumables	936.90
Interpretation and Report Writing	1,525.00
G.S.T.	580.34
	=====
Total Cost:	\$ 8870.88

APPENDIX C

CERTIFICATION OF AUTHORS

I, John Lloyd, of #455 - 409 Granville Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:

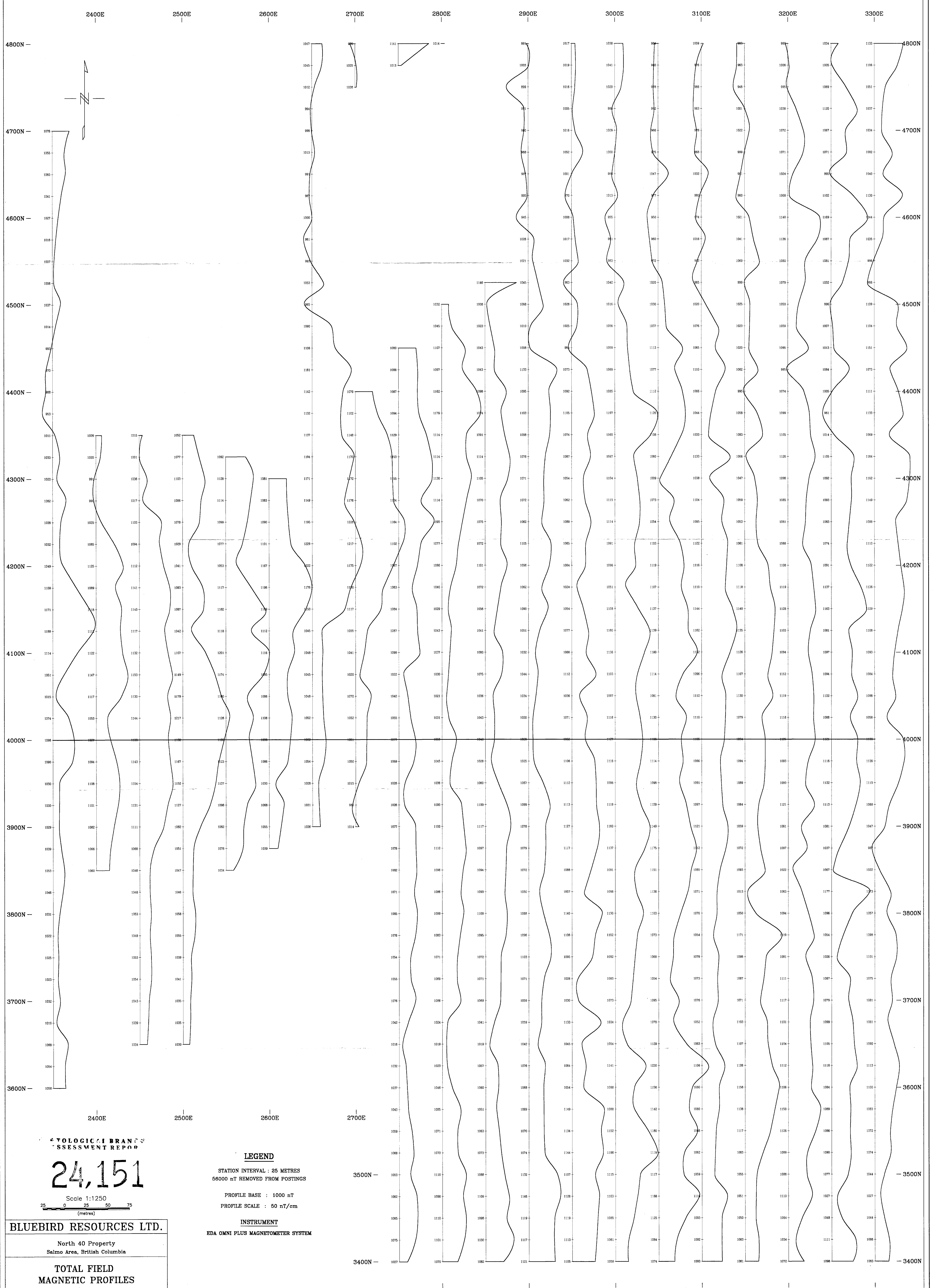
1. I graduated from the University of Liverpool, England in 1960 with a B.Sc. in Physics and Geology, Geophysics Option.
2. I obtained the diploma of the Imperial College of Science and Technology (D.I.C.), in Applied Geophysics from the Royal School of Mines, London University in 1961.
3. I obtained the degree of M.Sc. in Geophysics from the Royal School of Mines, London University in 1962.
4. I am a member in good standing of the Association of Professional Engineers in the Province of British Columbia, the Society of Exploration Geophysicists of America, the European Association of Exploration Geophysicists and the Canadian Institute of Mining and Metallurgy.
5. I have been practising my profession for over twenty-five years.

Vancouver, B.C.

I, John A. Cornock, of #455 - 409 Granville Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:

1. I graduated from the University of British Columbia in 1986 with a B.Sc. in Geology and a minor in Geophysics.
2. I am a member in good standing of the Society of Exploration Geophysicists of America, British Columbia Geophysical Society, British Columbia and Yukon Chamber of Mines and the Northwest Mining Association.
3. I have practiced my profession continuously since 1987.

Vancouver, B.C.



TOLOGICAL BRANCH
ASSESSMENT REPORT

24,151

Scale 1:1250
0 25 50 75
(metres)

LEGEND

STATION INTERVAL : 25 METRES
56000 nT REMOVED FROM POSTINGS

PROFILE BASE : 1000 nT
PROFILE SCALE : 50 nT/cm

INSTRUMENT
EDA OMNI PLUS MAGNETOMETER SYSTEM

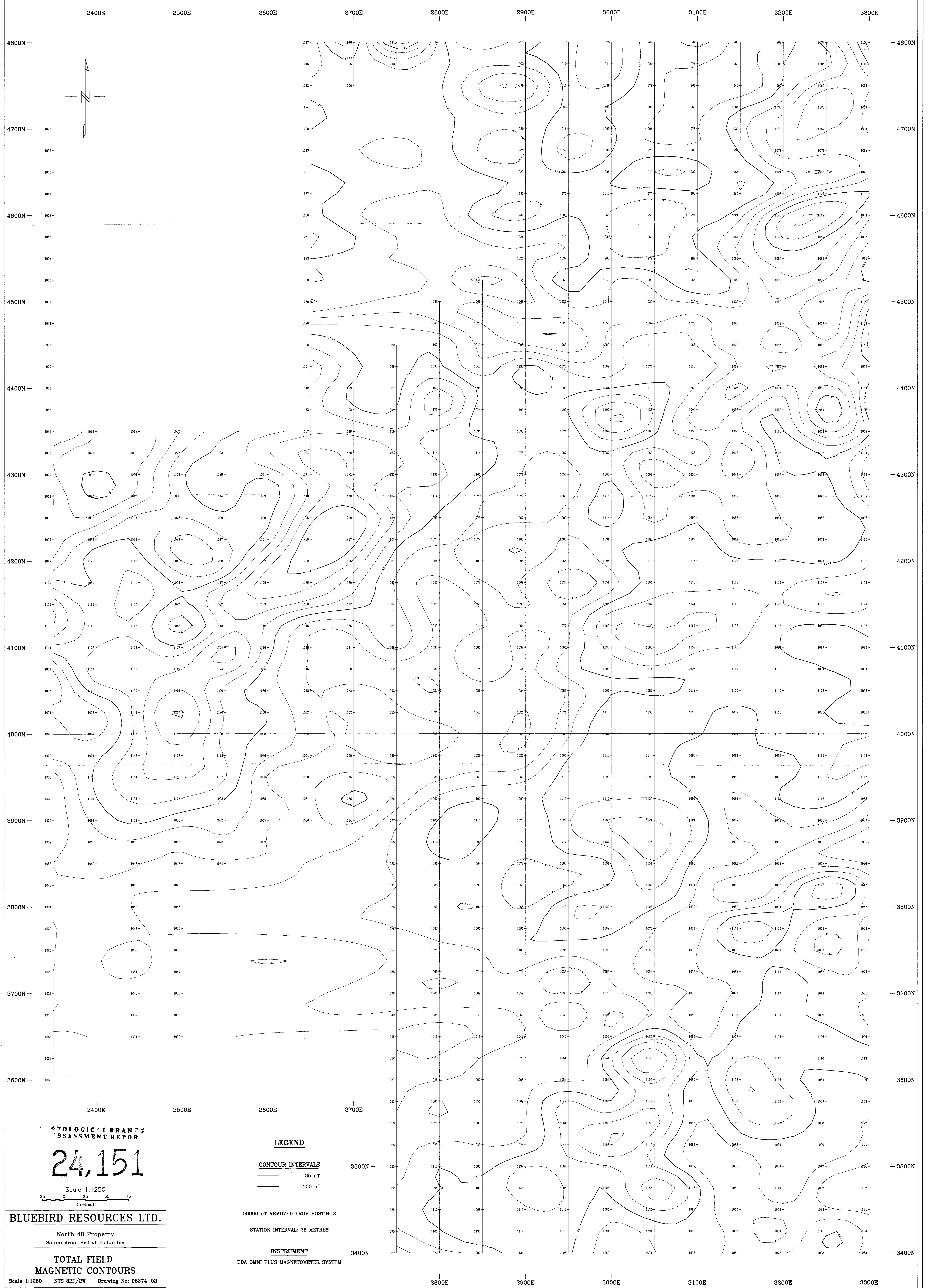
BLUEBIRD RESOURCES LTD.

North 40 Property
Selmo Area, British Columbia

**TOTAL FIELD
MAGNETIC PROFILES**

Scale 1:1250 NTS 82F/2W Drawing No: 95374-01

LLOYD GEOPHYSICS INC.



TOLOGICAL BRANCH
ASSESSMENT REPORT

24,151

Scale 1:1250
25 0 25 50 75
(metres)

LEGEND

CONTOUR INTERVALS
 — 25 nT
 — 100 nT

56000 nT REMOVED FROM POSTINGS
 STATION INTERVAL: 25 METRES

INSTRUMENT
 EDA OMNI PLUS MAGNETOMETER SYSTEM

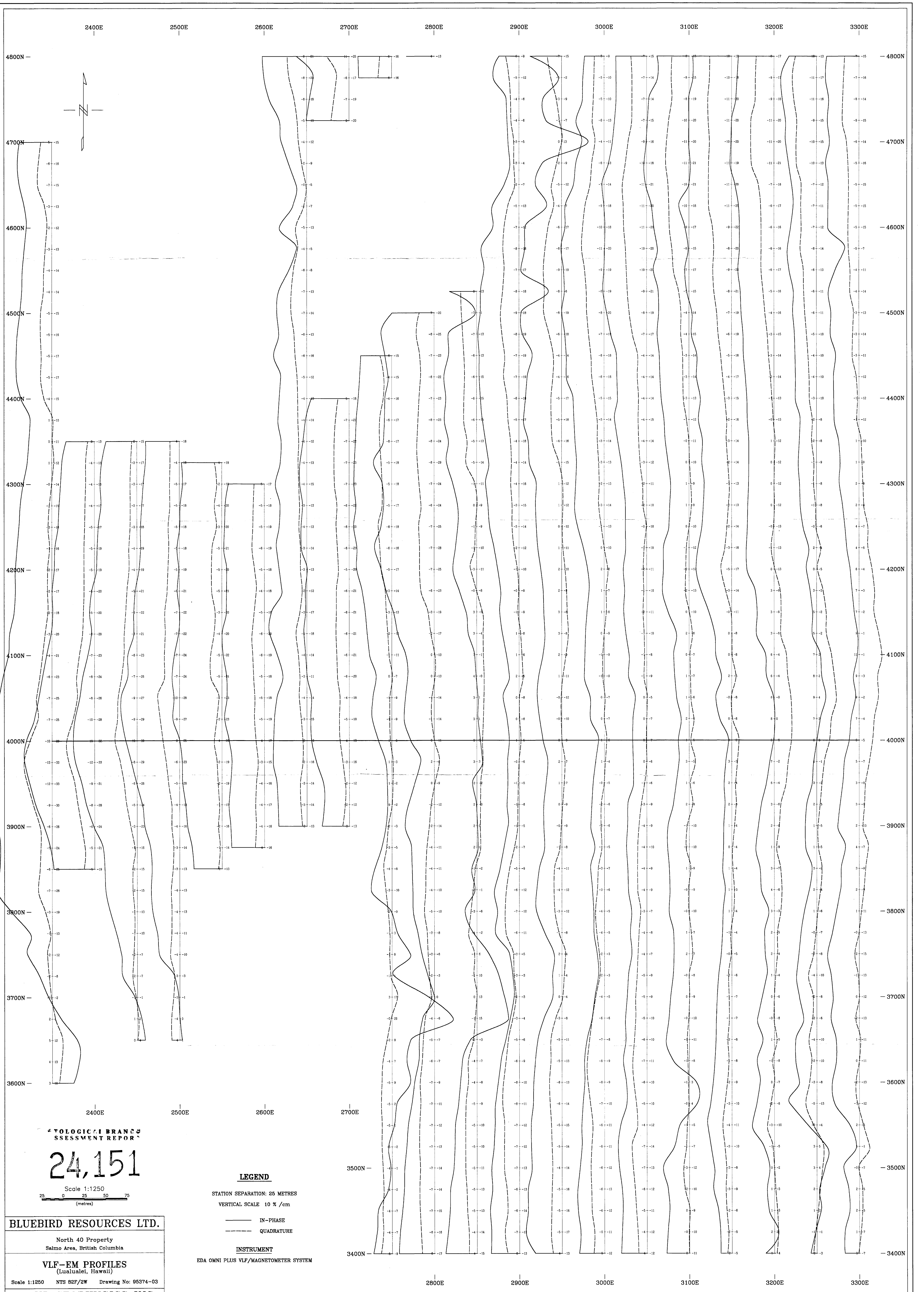
BLUEBIRD RESOURCES LTD.

North 40 Property
 Salmo Area, British Columbia

**TOTAL FIELD
 MAGNETIC CONTOURS**

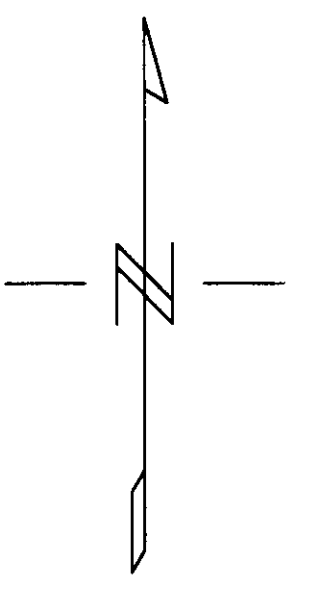
Scale 1:1250 NTS 82F/2W Drawing No: 95374-02

LLOYD GEOPHYSICS INC.



2400E 2500E 2600E 2700E 2800E 2900E 3000E 3100E 3200E 3300E

4800N 4700N 4600N 4500N 4400N 4300N 4200N 4100N 4000N 3900N 3800N 3700N 3600N 3500N 3400N



TOLOGICAL BRANCH
ASSESSMENT REPORT

24,151

Scale 1:1250
25 0 25 50 75
(metres)

LEGEND

STATION SEPARATION: 25 METRES

VERTICAL SCALE 10 % / cm

— IN-PHASE
- - - QUADRATURE

INSTRUMENT

EDA OMNI PLUS VLF/MAGNETOMETER SYSTEM

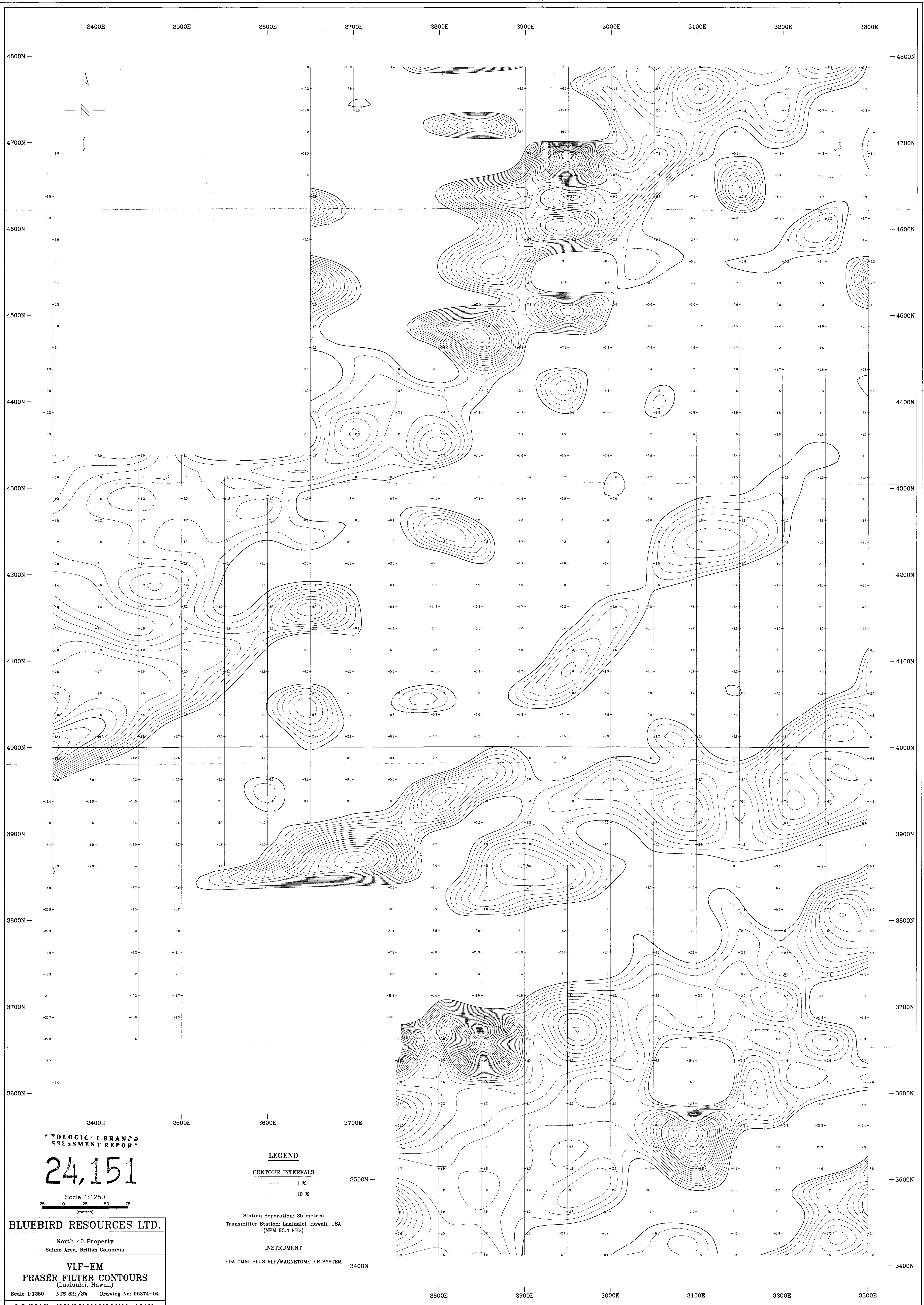
BLUEBIRD RESOURCES LTD.

North 40 Property
Salmo Area, British Columbia

VLF-EM PROFILES
(Luulualei, Hawaii)

Scale 1:1250 NTS 82F/2W Drawing No. 95374-03

LLOYD GEOPHYSICS INC.



TOLOGICAL BRANCH
ASSESSMENT REPORT

24,151

Scale 1:1250
0 25 50 75
(metres)

BLUEBIRD RESOURCES LTD.

North 40 Property
Salmo Area, British Columbia

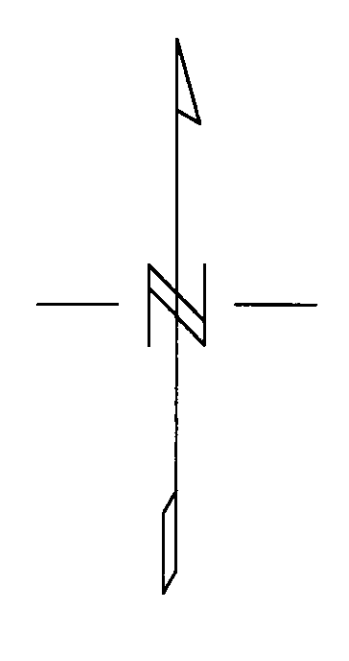
**VLF-EM
FRASER FILTER CONTOURS**
(Luaiualei, Hawaii)

Scale 1:1250 NTS 82P/2W Drawing No: 95374-04
LLOYD GEOPHYSICS INC.

LEGEND
CONTOUR INTERVALS
1 %
10 %

Station Separation: 25 metres
Transmitter Station: Luaiualei, Hawaii, USA
(NFM 23.4 kHz)

INSTRUMENT
EDA OMNI PLUS VLF/MAGNETOMETER SYSTEM

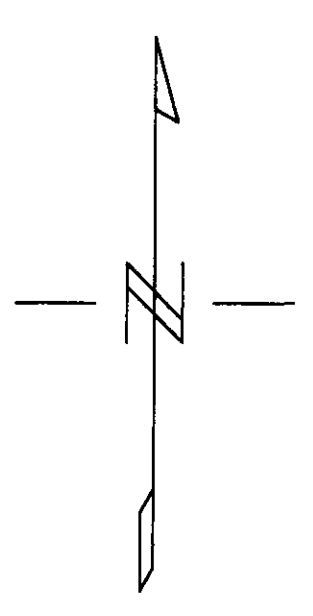
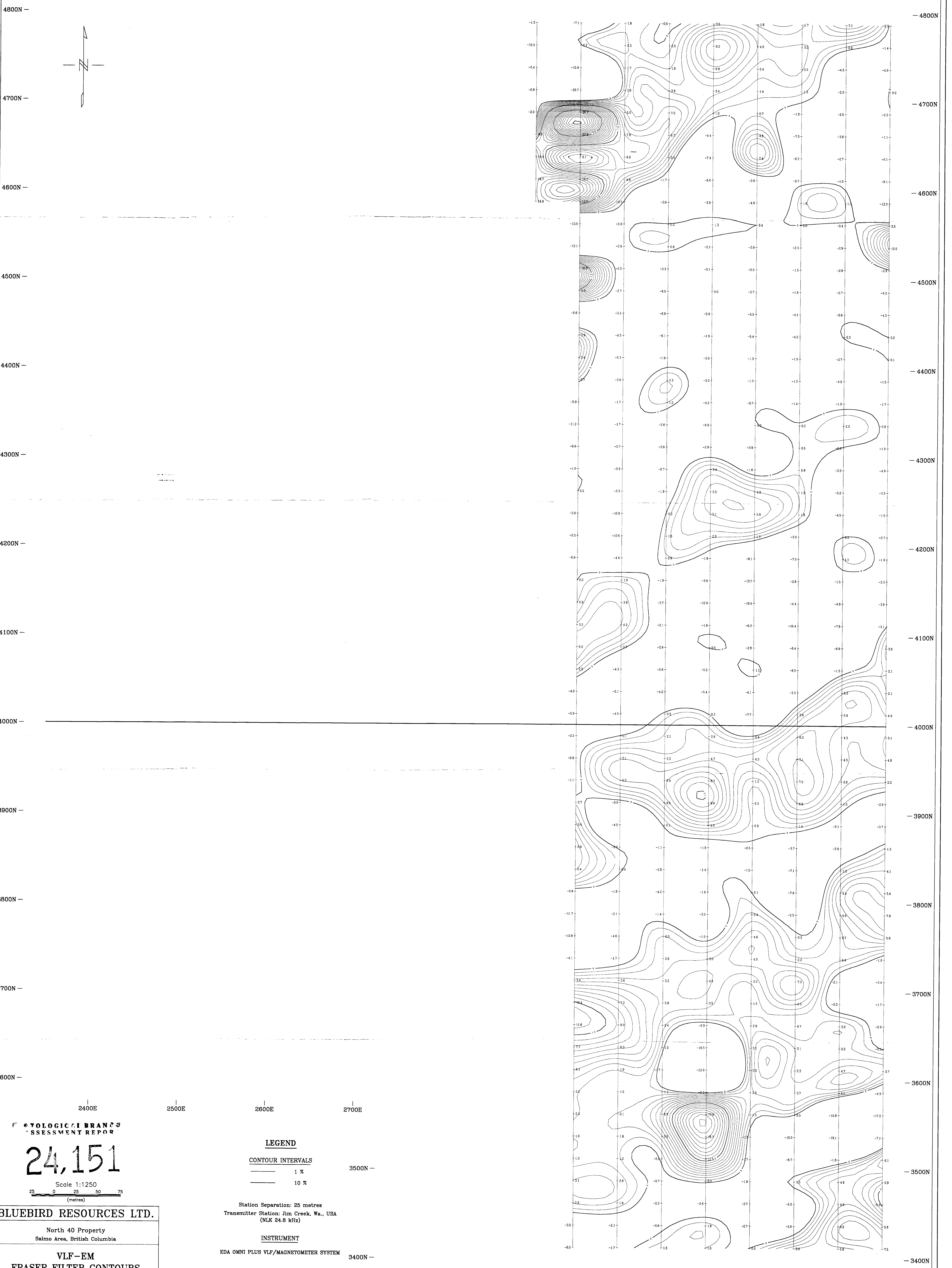


GEOLOGICAL BRANCH
 ASSESSMENT REPORT
24,151
 Scale 1:1250
 25 0 25 50 75
 (metres)

BLUEBIRD RESOURCES LTD.
 North 40 Property
 Salmo Area, British Columbia
VLF-EM PROFILES
 (Jim Creek, Wa., USA)
 Scale 1:1250 NTS B2P/2W Drawing No. 95374-05
LLOYD GEOPHYSICS INC.

LEGEND
 STATION SEPARATION: 25 METRES
 VERTICAL SCALE 10 % /cm
 ——— IN-PHASE
 - - - - QUADRATURE
INSTRUMENT
 EDA OMNI PLUS VLF/MAGNETOMETER SYSTEM

2400E 2500E 2600E 2700E 2800E 2900E 3000E 3100E 3200E 3300E



2400E 2500E 2600E 2700E

24,151

Scale 1:1250
0 25 50 75
(metres)

BLUEBIRD RESOURCES LTD.

North 40 Property
Salmo Area, British Columbia

VLF-EM
FRASER FILTER CONTOURS
(Jim Creek, Wa., USA)

Scale 1:1250 NTS 82F/2W Drawing No: 95374-06

LLOYD GEOPHYSICS INC.

LEGEND

CONTOUR INTERVALS

1 %

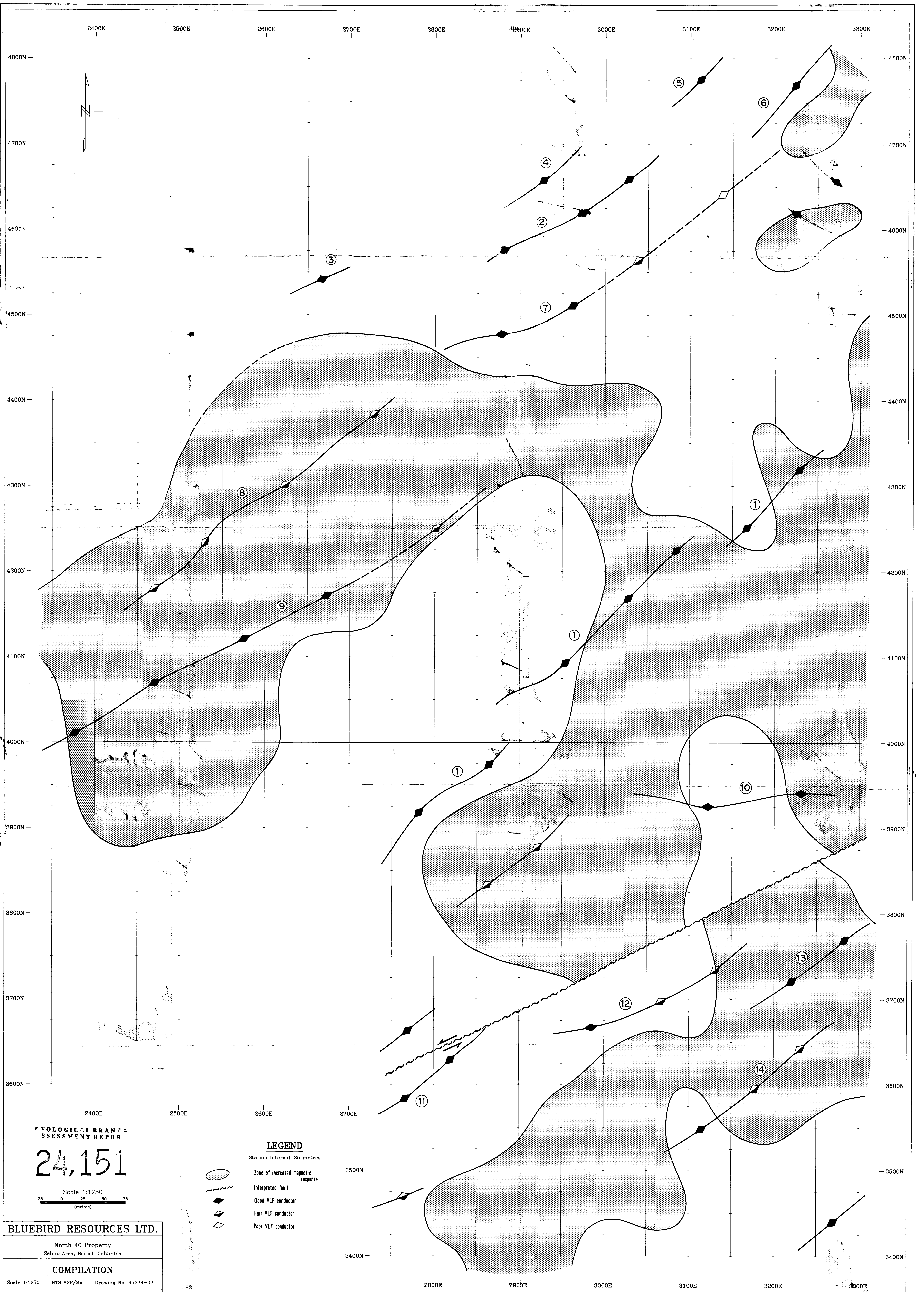
10 %

Station Separation: 25 metres
Transmitter Station: Jim Creek, Wa., USA
(N1K 24.8 kHz)

INSTRUMENT

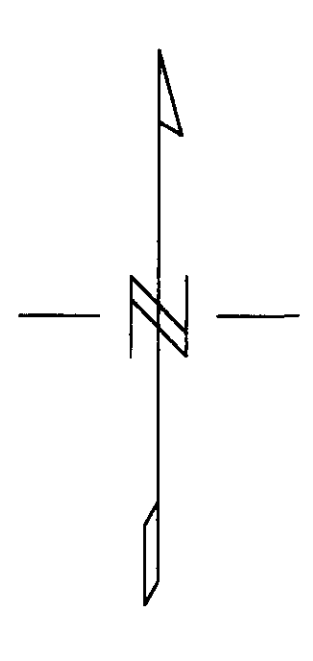
EDA OMNI PLUS VLF/MAGNETOMETER SYSTEM

2800E 2900E 3000E 3100E 3200E 3300E



2400E 2500E 2600E 2700E 2800E 2900E 3000E 3100E 3200E 3300E

4800N
4700N
4600N
4500N
4400N
4300N
4200N
4100N
4000N
3900N
3800N
3700N
3600N
3500N
3400N



24,151
Scale 1:1250
0 25 50 75
(metres)

- LEGEND**
 Station Interval: 25 metres
 ○ Zone of increased magnetic response
 ~~~~~ Interpreted fault  
 ◆ Good VLF conductor  
 ◇ Fair VLF conductor  
 ◊ Poor VLF conductor

**BLUEBIRD RESOURCES LTD.**  
 North 40 Property  
 Salmo Area, British Columbia  
**COMPILATION**  
 Scale 1:1250 NTS 82F/2W Drawing No: 95374-07  
**LLOYD GEOPHYSICS INC.**