87-378 — 16130

Shangri-La Minerals Limited

6/88

AIRBORNE GEOPHYSICAL REPORT

ON THE

ROCK OF AGES CLAIM GROUP

FOR

Owner/Operator: CHELIK RESOURCES INC.

NTS 82F/10W

SLOCAN M.D.
BRITISH COLUMBIA

NORTH LATITUDE 49 DEG. 40.5'
WEST LONGITUDE 116 DEG. 50'

BY

F. DI SPIRITO, B.A.SC., P.ENG.
J.C. GRAHAM, B.SC., M.ENG.

SHANGRI-LA MINERALS LIMITED
VANCOUVER, BRITISH COLUMBIA

DECEMBER 22, 1986

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,130

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SUMMARY

On December 6 and 9, 1986, Shangri-La Minerals Limited conducted an airborne very low frequency electromagnetic (VLF-EM) and magnetometer survey of the Rock of Ages claim group with the object of defining geophysical targets which may indicate the presence of Platinum Group Element (PGE) deposits. The survey was undertaken on behalf of Chelik Resources Inc. The results of the survey, as well as other information obtained while staking the claim group in June, 1986, are presented in this report.

The Rock of Ages claim group consists of four modified grid system claims of 20 units each. The claims overlie existing mineral claims (including the Dykes Option Crown Grant, which has significant PGE mineralization), however, so that the effective area of the Rock of Ages claim group is approximately 60 units. The claims are situate in the Slocan Mining Division, British Columbia.

The property is easily accessed from Nelson, British Columbia, by Highway 3A and a Department of Highways ferry to Kootenay Bay, which lies within the Rock of Ages claim area. The property is crossed by public and private roads.

Topography on the claims is moderate, with elevations ranging from 350 m to 1040 m above sea level. A major transprovincial power line crosses the Rock of Ages property.

There is significant PGE mineralization on the Dykes Option Crown Grant, which is within the Rock of Ages claim group. The PGE mineralization is associated with sulphide mineralization in a presumed diorite dyke or sill which has been intruded by pegmatitic sills. Given that diorite sills are reported to be quite common in the area and that there is a pegmatitic intrusion in the northeastern portion of the Rock of Ages claim group, the geology of the claim group is favourable for more PGE mineralization discoveries.

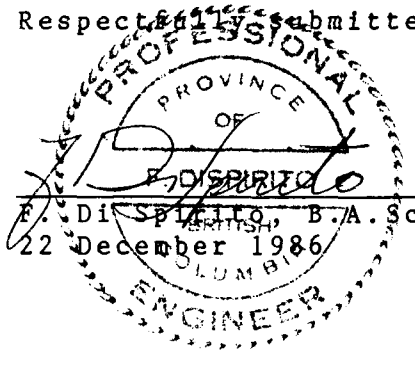
The VLF-EM results suggest that the northeastern portion of the property may host conductive zones of interest. The magnetometer survey indicates several areas of moderately high magnetic field strength on the eastern portion of the property area and one quite strong magnetic anomaly. The relationship between the geophysical anomalies and the property geology should be determined.

A second phase of exploration is recommended with the object of locating occurrences of PGE mineralization within the Rock of Ages claim group. It is recommended that this program be concentrated on the eastern section of the claim group, particularly in the north, near the pegmatitic intrusion. The

recommended work consists of grid establishment, reconnaissance geologic mapping and sampling, as well as ground magnetometer and VLF-EM surveys. The sum of $18,000 should be allocated to complete the work program.

Contingent upon favourable results from the recommended program, trenching and diamond drilling will be necessary in order to evaluate the economic potential of the Rock of Ages claim group.

Respectfully submitted at Vancouver, B.C.,



F. Di Spirito, B.A.Sc., P.Eng.
22 December 1986

PART A

INTRODUCTION

On December 6 and 9, 1986, Shangri-La Minerals Limited conducted an airborne VLF-EM and magnetometer survey of the Rock of Ages claim group with the object of defining geophysical targets which may indicate the presence of Platinum Group Element (PGE) deposits. The survey was undertaken on behalf of Chelik Resources Inc. A total of 168 line-km was surveyed. The results of the survey, as well as other information gained while staking the claim group in June, 1986, are presented in this report.

PROPERTY STATUS

The Rock of Ages claim group consists of four modified grid system claims of 20 units each. The claims overlie other mineral claims, however, so that the total area of the Rock of Ages claim group is approximately 60 units (see Location Map, Fig. 1). The claims are situate in the Slocan Mining Division, British Columbia, and are shown on Mineral Claim map 82F/10W.

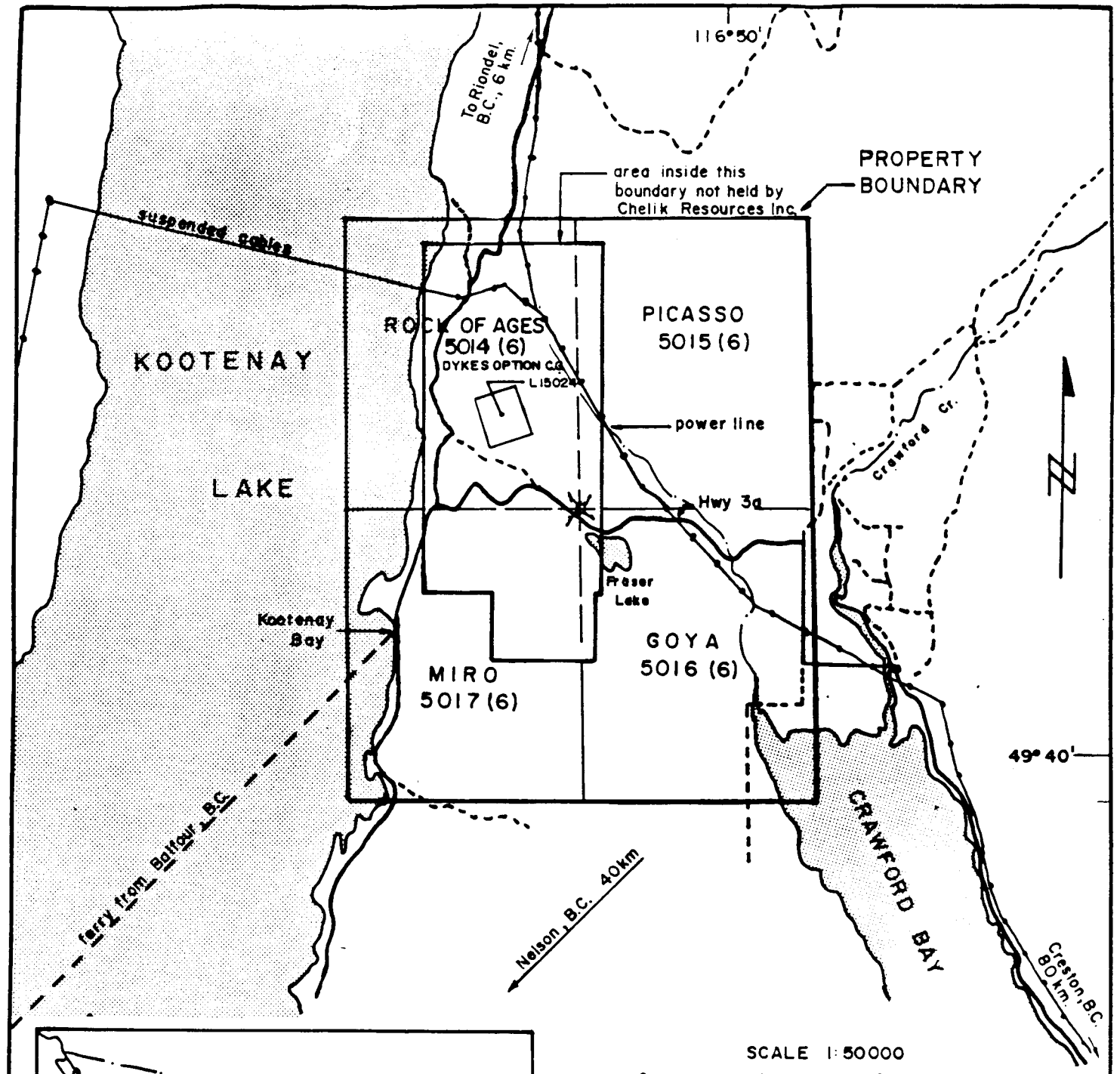
NAME	RECORD NO.	ANNIVERSARY	AREA
Rock of Ages	5014	June 19, 1987	20 units
Picasso	5015	June 19, 1987	20 units
Goya	5016	June 19, 1987	20 units
Miro	5017	June 19, 1987	20 units

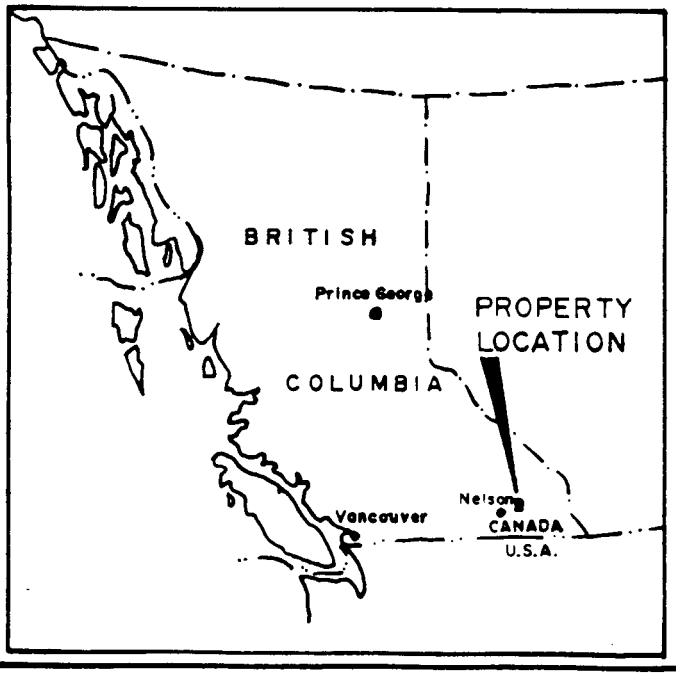
LOCATION, ACCESS, PHYSIOGRAPHY

The property is approximately 40 km east-northeast of Nelson, British Columbia. The eastern boundary of the claim group passes through the town of Crawford Bay. The western boundary lies within Kootenay Lake. Highway 34 bisects the property in an east-west direction.

Access to the property is by Highway 3A from Nelson. A Department of Highways ferry carries cars and trucks across Kootenay Lake from Balfour (30 km east-northeast of Nelson) to Kootenay Bay, which lies within the Miro claim. The property is crossed by public and private roads.

Topography on the claims is moderate, with elevations





To accompany a report by F. DiSpirito, B.A.Sc., P.Eng.

ROCK OF AGES PROJECT

FOR: CHELIK RESOURCES INC.

BY : SHANGRI-LA MINERALS LTD.

LOCATION MAP

SLOCAN M.D., B.C.

NTS 82F-10W	DATE: DEC 1986
DRAWN BY: MJM	FIGURE Nº 1

ranging from 350 m to 1040 m above sea level. Portions of the property have been logged off; the remainder is moderately forested in general.

The property is traversed by a major transprovincial power line.

HISTORY

The Rock of Ages claim area covers some 1500 ha (60 units) in an area where a significant platinum/palladium occurrence (the Dykes Option or Mineral Dyke Crown Grant, Lot 15024) is located. This Crown Grant, although not held by Chelik Resources Inc., is within the boundaries of the Rock of Ages claim group (see Fig. 1).

Assay results of a sample collected on the Dykes Option Crown Grant indicated 0.10 oz/ton platinum, 0.15 oz/ton palladium, 0.02 oz/ton rhodium, as well as some copper, gold, and silver (Martin, 1956). The Consolidated Mining and Smelting Company (Cominco) tested the showing with approximately 90 m of tunnels in 1930 (Rice, 1941; Gale, 1986).

Other mineralized areas of interest which are nearby are mostly lead-zinc deposits, including the Broster (300 m south of Rock of Ages claim group), the Kootenay (100 m north of the Rock of Ages claim group), and the Les-Ann (1 km north-northeast of the Rock of Ages claim group). The Bluebell mine (approximately 5 km north of the Rock of Ages claim group) produced from a lead-zinc-silver-copper deposit up until 1971.

PART B

AIRBORNE VLF-EM AND MAGNETOMETER SURVEY SPECIFICATIONS

The survey system equipment simultaneously monitors and records the output signals from a proton precession magnetometer and two VLF-EM receivers installed in a bird which is towed over the survey area at an altitude of approximately 75 m by helicopter. The average flying speed while surveying is about 110 km/hr. Landmarks along the flight lines are plotted on aerial photographs as the lines are flown. This allows subsequent production of a flight line map on which to plot the survey results.

The two VLF-EM receivers respond to signals from two different transmitters - one in Seattle, Washington and one in Annapolis, Maryland. Conductors will respond most strongly to

the transmitter in the direction of their strike. For most areas in British Columbia, conductors which strike northerly will respond most strongly to the Seattle transmitter, while those striking easterly will respond most strongly to the Annapolis transmitter.

The three channels of geophysical data and one navigational marker channel are each digitized at a sample rate of approximately once every 1.6 seconds (resulting in a station spacing of approximately 50 m) using an 8 channel analog to digital converter. The data is then recorded digitally on one channel of a stereo cassette tape recorder, while the other channel records the operators' voice descriptions of landmarks, line identification, and other details. As well, the data is displayed on the screen of a TRS-80 Model 100 lap computer as it is recorded. Instrument specifications are detailed in Appendix C.

The flight lines run north-south. The line spacing is roughly 100 m.

Two problems were encountered on this survey. The first was that the Annapolis VLF-EM transmitter was not functioning during the survey, so that only the Seattle transmitter could be used. The second was that, due to an instrument malfunction, the magnetic field was only measured over the eastern 1/3 of the Rock of Ages property. Almost all of the Chelik Resources Inc.'s property is covered, but the magnetic response of the mineralized dyke (in the western portion of the property) is unknown.

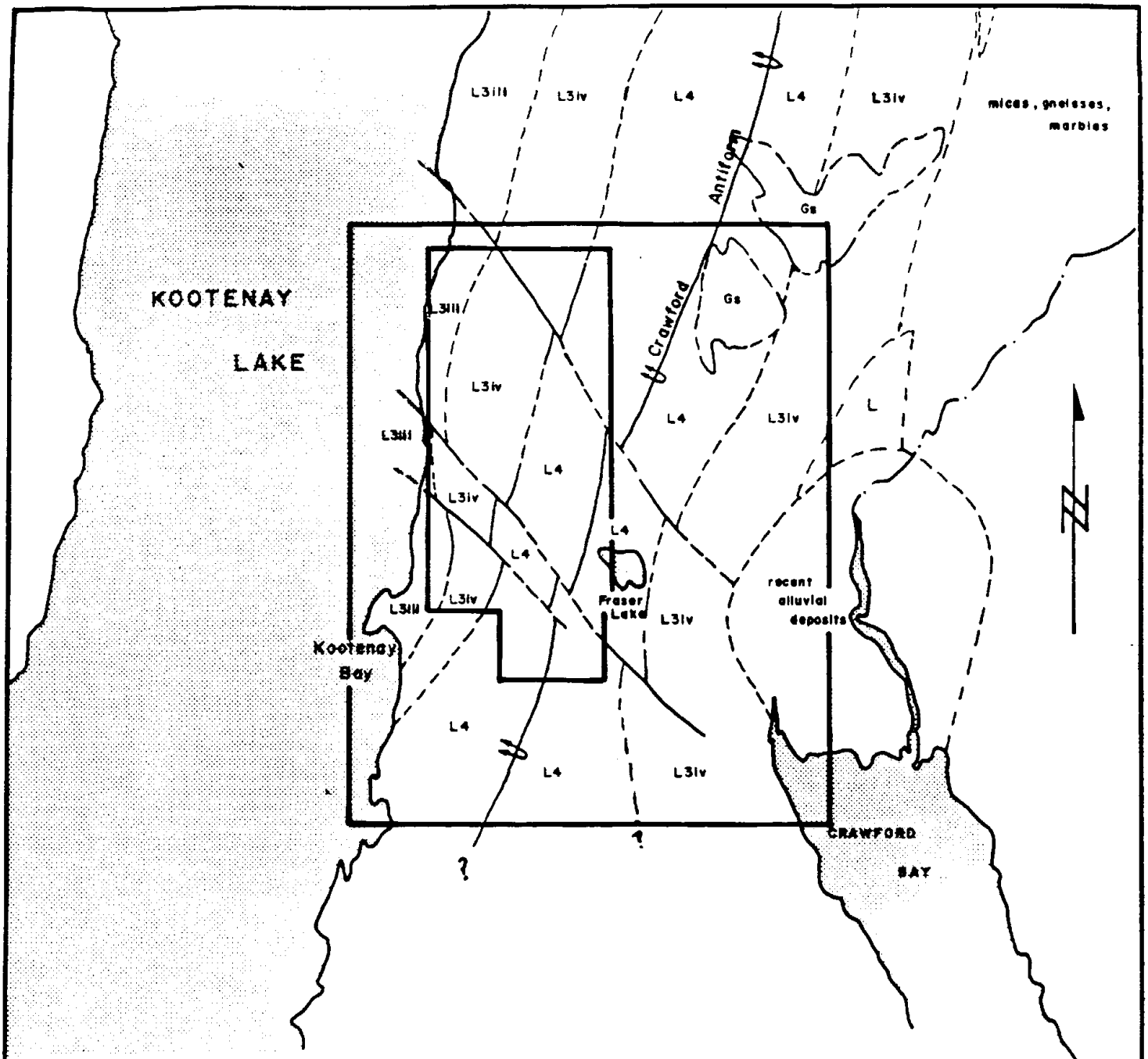
PART C

REGIONAL AND PROPERTY GEOLOGY AND MINERALIZATION

The regional geology of the area is shown in Figure 2, and is described in detail in the BC Department of Mines Bulletin 73. The claim area overlies Lardeau Group rocks of middle Cambrian age. The Lardeau Group is a metamorphic assemblage containing marble, calc-silicate rock, gneiss, schist, and amphibolite. The Lardeau Group hosts granitic intrusions of Jurassic-Cretaceous(?) age, one of which occurs in the northeastern corner of the Rock of Ages property. This intrusion exhibits pegmatitic characteristics, noted during the staking of the claim group.

The property is bisected by the axis of a NE trending antiform, and is crosscut by at least three NW trending faults.

As mentioned above (see History), significant PGE mineralization has been reported in the area of the Rock of Ages claim group. This occurs at the Dykes Option Crown Grant, shown in Figure 1. The PGE mineralization is associated with sulphides (pyrrhotite and chalcopyrite) in an altered dark green dyke or



JURASSIC–CRETACEOUS (?)

GRANITIC ROCKS

Gs 'SYNTECTONIC' QUARTZ MONZONITE, PEGMATITE; GS1: MIXED ZONE OF INTRUSIVE, PEGMATITE, AND METASEDIMENTS

MIDDLE CAMBRIAN

LARDEAU GROUP

L UNDIFFERENTIATED

INDEX FORMATION

L4 BIOTITE – QUARTZ – FELDSPAR ± GARNET GNEISS, MINOR AMPHIBOLITE

L3 iv. CALC – SILICATE GNEISS WITH AMPHIBOLITE, SCHIST, AND MARBLE LAYER. MAY INCLUDE UNITS L3i, L3ii, AND L3iii.
iii. CALCITE MARBLE WITH CALC-SILICATE, AMPHIBOLE, AND SCHIST LAYERS
ii. AMPHIBOLITE
i. MICACEOUS QUARTZITE

To accompany a report by F. Di Spirito, B.A. Sc., P.Eng.

ROCK OF AGES PROJECT

FOR: CHELIK RESOURCES INC.

BY : SHANGRI-LA MINERALS LTD.

REGIONAL GEOLOGY

from BCDM Bulletin 73

SLOCAN M.D., B.C.

NTS 82F-10W	DATE : DEC 1986
DRAWN BY: MJM	Figure Nº 2

sill which has been intruded by pegmatite sills. Due to extensive alteration of the original rock, positive identification is impossible, but it is assumed to have been diorite. Rocks of similar character are reported to be common in the area (Ministry of Mines Report, 1929).

PART D

DISCUSSION OF AIRBORNE GEOPHYSICAL RESULTS

Airborne Magnetometer Survey

The results of the airborne magnetometer survey are presented in Figure 3. Total observed magnetic variation is quite moderate, being approximately 400 gammas. The datum level for the magnetic survey is 57,000 gammas.

The most striking magnetic field strength anomaly is on lines 25 and 26, where values exceed 700 gammas, approximately 400 gammas above background levels on these lines. The extent of the anomaly is approximately 250 x 500 m. It occurs just to the north of the highway, but appears to be unrelated to cultural interference. This anomaly may be due to a mafic intrusion in the Lardeau Group. The size and strength of the anomaly suggests that it may be caused by a quite extensive distribution of magnetic minerals.

There are several other zones of moderately high magnetic field strength. These probably indicate zones of more magnetic rock types, possibly mafic intrusives. The moderately high magnetic field strength on the northern parts of lines 33, 34, and 35 may be due to the presence of the pegmatitic intrusion. The fairly large extent of the similar high magnetic field strength on the southern parts of lines 30, 31, and 32 suggests that this anomaly may be due to a similar intrusion.

Airborne VLF-EM Survey

The results of the airborne VLF-EM survey using the Seattle transmitter are presented in Fig. 4. The field strength high in the northwestern corner of the property is due to the concentration of powerlines there, and isolated highs traverse the property diagonally from the northwest to the southeast, tracing the path of the powerline. The highs are not particularly strong.

The broad high field strength area in the north central portion of the property is probably due to topography, as are the isolated highs in the southeast. The small single station highs on the southern portion of line 14 are probably spurious.

The eastern portion of the property is characterized by areas of quite variable VLF-EM field strength. These are not likely due to topography, as the property slopes quite gently there. There is a pronounced field strength low on lines 24 and 25, just to the north of the power line. This low field strength zone correlates quite closely with a zone of high magnetic field strength. The low VLF-EM field strength may indicate that induced electrical currents are being channeled around a resistive intrusion.

Just to the north of the field strength low on lines 24 and 25, there is a possibly related field strength high which occurs mainly on line 25, but also to a lesser extent on lines 24 and 26. This is thought to be of significance since the field strength rises abruptly from a low of less than 10% to over 70% in the space of some 600 m. There is a zone of high magnetic field strength just to the south of this VLF-EM high. This area is thought to represent a good geophysical target for further investigation.

The mineralized dyke on the Dykes Option Crown Grant did not affect the VLF-EM results, indicating that the area is not particularly conductive.

PART E

CONCLUSIONS AND RECOMMENDATIONS

There is significant PGE mineralization on the Dykes Option Crown Grant, which is surrounded by the Rock of Ages claim group. The PGE mineralization is in a mafic dyke or sill which has been intruded by pegmatitic sills. Given that diorite sills are reported to be quite common in the area and that there is a pegmatitic intrusion in the northeastern portion of the Rock of Ages claim group, the geology of the claim group is favourable for more PGE mineralization discoveries.

The claim group has never been prospected in detail.

The VLF-EM results suggest that the northeastern portion of the property may host conductive zones of interest. The magnetometer survey indicates several areas of moderately high magnetic field strength on the eastern portion of the property area and one quite strong magnetic anomaly on lines 25 and 26 with possibly related VLF-EM anomalies. The strong magnetic anomaly may be due to mafic intrusives, which are important factors in PGE mineralization in the area. The relationship between the geophysical anomalies and the property geology should be determined.

A second phase of exploration is recommended with the object of locating occurrences of PGE mineralization within the Rock of Ages claim group. It is recommended that this program be concentrated on the eastern section of the claim group, particularly in the north, near the pegmatitic intrusion. The recommended work consists of grid establishment, reconnaissance geologic mapping and sampling, as well as ground magnetometer and VLF-EM surveys.

ESTIMATED COST OF RECOMMENDED EXPLORATION PROGRAM

Grid establishment, allow	$3,000.00
Geological support, allow	4,000.00
Assays, allow	1,000.00
Magnetometer survey, allow	3,000.00
VLF-EM survey, allow	3,000.00
Engineering, report, allow	4,000.00
Total Cost of Recommended Program:	$18,000.00

Contingent upon favourable results from the recommended program, trenching and diamond drilling will be necessary in order to evaluate the economic potential of the Rock of Ages claim group.

Respectfully submitted at Vancouver, B.C.,

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. DISPIRITO

F. Di Spirito, B.A.Sc., P.Eng.
22 December 1986

REFERENCES

Gale, R.E., Fraser, A.S. — Platinum deposits in British Columbia, Shangri-La Minerals Ltd. private report, 1986.

Hoy, T. — Geology of the Riondel area, Central Kootenay Arc, southeastern British Columbia, BCDM Bulletin 73, 1980.

Martin, J.M. — Letter describing results of ore test, including fire assay and spectrographic analysis, 1956.

Rice, H.H.A. — GSC Memoir 228, p. 60, 1941.

BC Ministry of Mines Report, p. 325, 1929.

BC Ministry of Mines Report, p. 254, 1930.

APPENDIX A

COST BREAKDOWN OF SURVEY

Cost Breakdown for the Rock of Ages Airborne Survey

Airborne survey	
168 kilometers @ $100	$16,800
Deduct:	
Reduction for portion of survey during which magnetometer malfunctioned	
108 kilometers @ $40	(4,320)
	12,480
Add	
Research and report preparation	1,200
Supervision and Engineering	800
Total	**$14,480**

APPENDIX B

CERTIFICATES

CERTIFICATE

I, Frank Di Spirito, of the City of Vancouver in the Province of British Columbia, do hereby certify:

I) I am a Consulting Engineer with the firm of Shangri-La Minerals Limited, based at 706-675 West Hastings Street, Vancouver, B.C., V6B 1N2.

II) I am a graduate of the University of British Columbia (1974) and hold a Bachelor of Applied Science in Geological Engineering.

III) I am a registered member, in good standing, of the Association of Professional Engineers of British Columbia.

IV) Since graduation, I have been involved in numerous mineral exploration programs throughout Canada and the United States of America.

V) This report is based on an evaluation of data obtained by a Shangri-La Minerals Limited crew on December 6 and 9, 1986, and an evaluation of publicly and privately held data pertaining to the claim area.

VI) I have no direct or indirect interest in the property described herein, or in any securities of Chelik Resources Inc., nor do I expect to receive any.

VII) This report may be utilized by Chelik Resources Inc. for inclusion in a Prospectus or Statement of Material Facts.

Respectfully submitted at Vancouver, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA F. DISPIRITO

Frank Di Spirito, B.A.Sc., P.Eng.
22 December 1986

CERTIFICATE

I, James Campbell Graham of the City of Vancouver in the Province of British Columbia, do hereby certify:

I) I am a Consulting Geophysical Engineer with the firm of Shangri-La Minerals Limited at 706-675 West Hastings Street, Vancouver, B.C., V6B 1N2.

II) I graduated in 1985 with a M.Eng. degree in Geophysical Engineering and in 1982 with a B.Sc. in Geophysical Engineering from the Colorado School of Mines in Golden, Colorado.

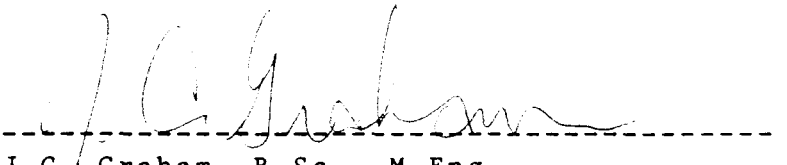
III) I have been involved in numerous mineral exploration programs since 1975.

IV) This report is based upon field work carried out by this author and a Shangri-La Minerals Limited crew on December 6 and 9, 1986, and a review of published and privately held literature pertaining to the claim area.

V) I hold no direct or indirect interest in the property described herein, or in any securities of Chelik Resources Inc., or in any associated companies, nor do I expect to receive any.

VI) This report may be utilized by Chelik Resources Inc. for inclusion in a Prospectus or Statement of Material Facts.

Respectfully submitted at Vancouver, B.C.



J.C. Graham, B.Sc., M.Eng.
22 December 1986.

APPENDIX C

AIRBORNE SURVEY EQUIPMENT SPECIFICATIONS

SPECIFICATIONS: SABRE AIRBORNE VLF-EM SYSTEM

Antenna System: 2 separate omnidirectional arrays, housed in same bird as proton magnetometer detector.

Parameters measured: Horizontal field strength on 2 stations simultaneously (Seattle and Annapolis). Designed for use in steep terrain where dip angle information is confusing and often useless.

Type of Readout: 2 analog meters, one for each station, and 2 analog outputs at rear of console. These analog outputs, along with those of the proton magnetometer and a marker channel, are digitized by a CCC-Maron Remote Monitoring and Logging System (an 8 channel, 8 bit analog-to-digital converter custom manufactured by Maron Engineering Ltd., Burnaby B.C.) and stored in multiplex format on one channel of a conventional stereo cassette tape deck.

Receiver Console: 2 separate receiver channels, both housed in 30x10x25 cm case.

Operating Temperature Range:

Instrument Console: -10 deg. C to +50 deg. C
Antenna System: -10 deg. C to +50 deg. C

Power Source:

Receiver Console: 8 alkaline penlite cells
Instrument Console: 2 9V transistor batteries

Manufacturer: Sabre Electronic Instruments Ltd.
Burnaby, B.C.

SPECIFICATIONS: SABRE AIRBORNE MAGNETOMETER

Type: Proton Precession

Range: 20,000 to 75,000 gammas

Repetition Rate: Approximately once every 1.6 seconds

Output: Analog meter on instrument console, 0-100 mV analog output on rear of console. Full scale deflection can be 1000, 2500, 5000, or 10000 gammas, selected by operator. The analog output is digitized with the CCC-Maron Remote Monitoring and Logging System and stored on one channel of a conventional stereo cassette tape deck along with the VLF-EM data and the navigational marker channel.

Resolution: Resolution of instrument itself is better than 1 gamma, but recorded resolution is limited to about 4 gammas at 1000 gamma full scale deflection (1000 gammas resolved to 1 part in 255 with 8 bit analog-to-digital converter).

Detector: Kerosene-filled coil, 9 cm long by 8 cm diameter. Inductance 60 millihenries, resistance 7.5 ohms, weight 2.2 kg.

Operating Temperature:

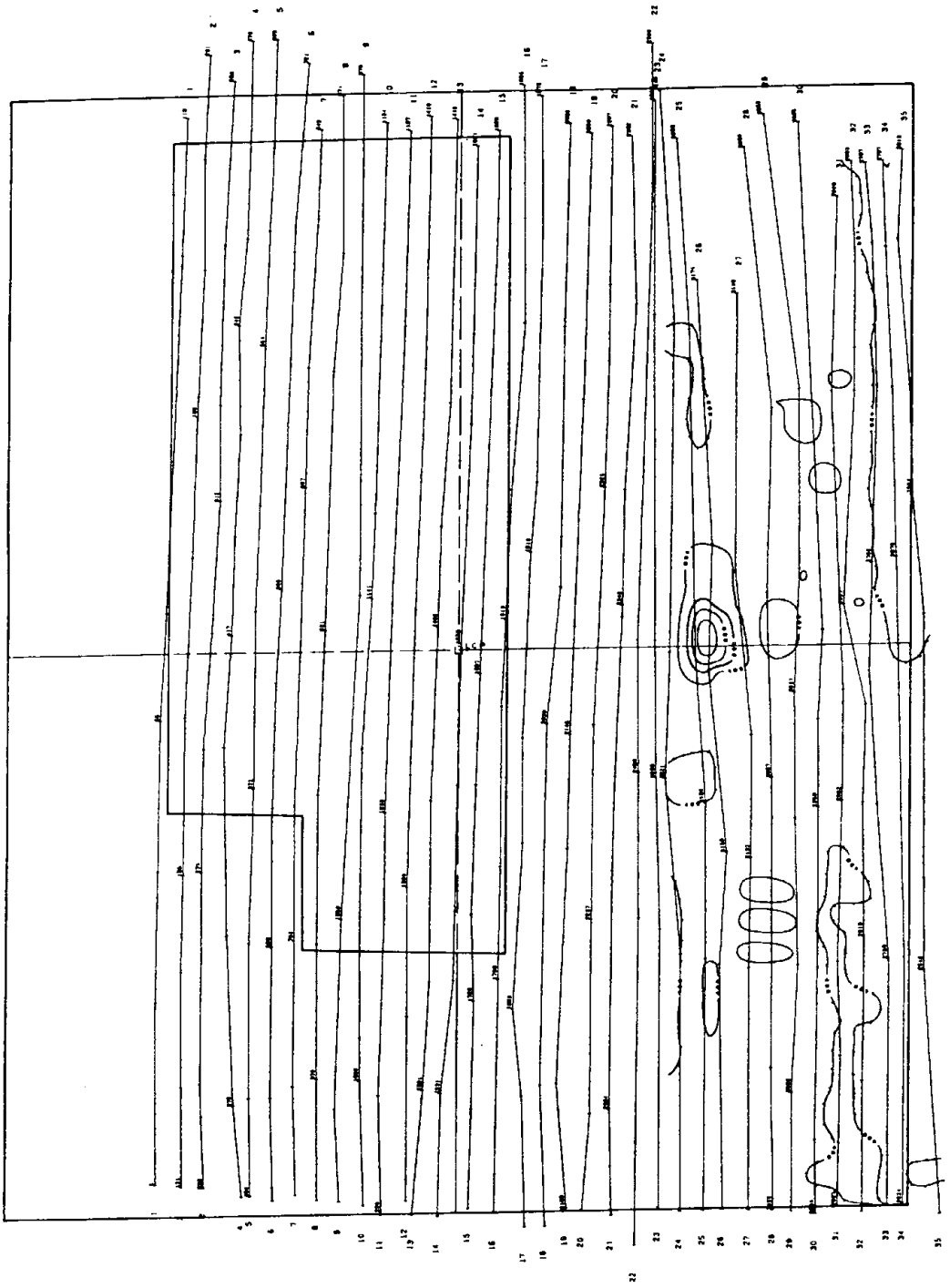
Instrument: -10 deg. C to +60 deg. C
Detector: -10 deg. C to +60 deg. C

Dimensions:

Instrument Console: 30x10x25 cm, wt. 3.5 kg
Towed bird: 1.7 m x21 cm diameter, wt. 30 kg

Power Source: 12 V 20 amp-hr lead-acid batteries

Manufacturer: Sabre Electronics Ltd.,
Burnaby, B.C.



To accompany a report by F. DiSpirito, B.A.Sc., P.Eng.

ROCK OF AGES PROJECT	
FOR : CHELIK RESOURCES INC.	
BY : SHANGRI-LA MINERALS LTD.	
TOTAL MAGNETIC FIELD STRENGTH AIRBORNE SURVEY SLOCAN MD., B.C.	
NTS 82F-10W	DATE : DEC 1986
DRAWN BY RPM, MJM.	FIGURE N° 3

LEGEND

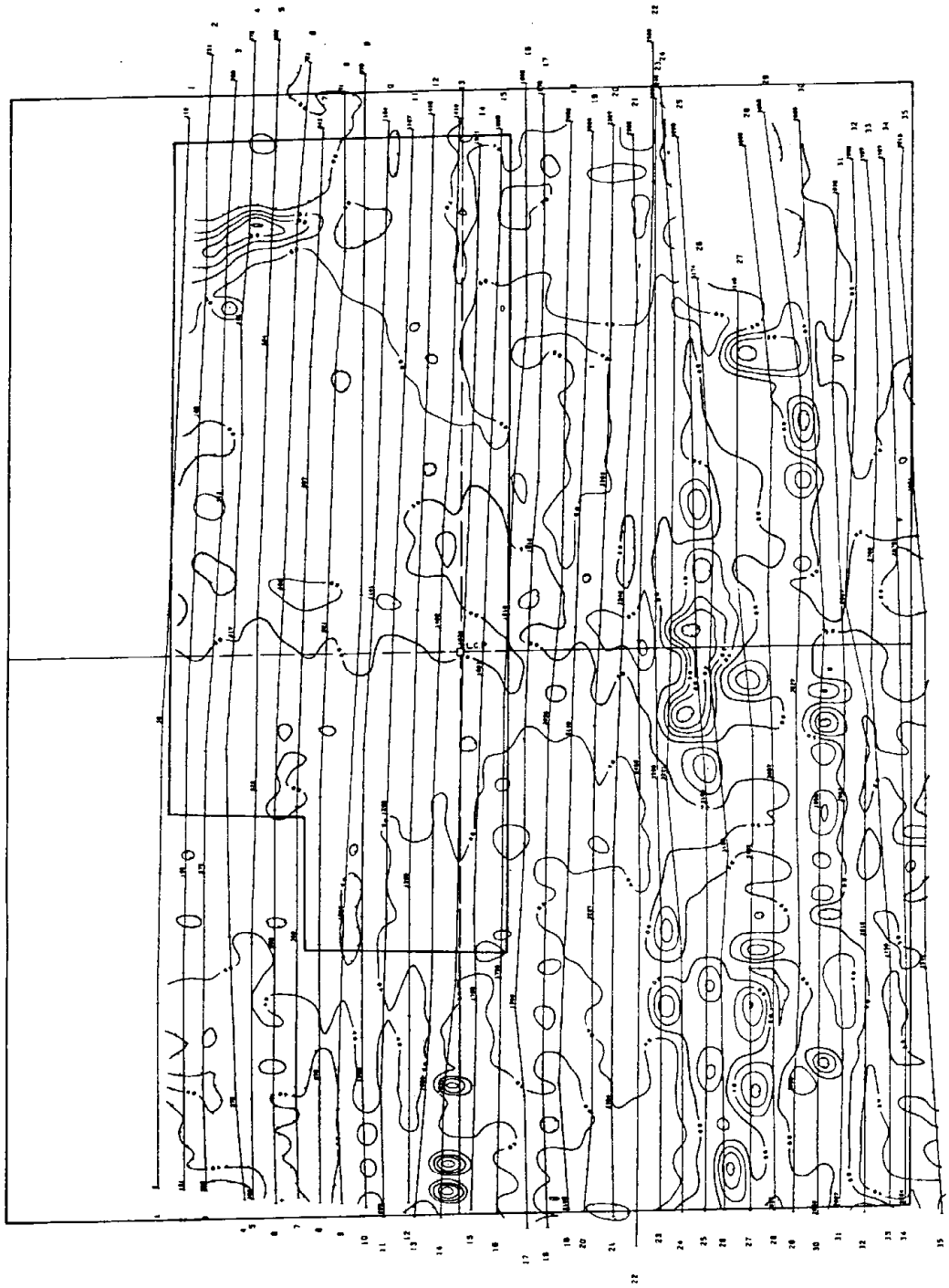
252 Flight line with reading no.

Contour interval 100 gammas

Base Value 57000 gammas

Estimated legal corner post

0 200 400 600 800 metres



To accompany a report by F. DiSpirito, B.A.Sc., P.Eng.

ROCK OF AGES PROJECT	
FOR : CHELIK RESOURCES INC.	
BY : SHANGRI-LA MINERALS LTD.	
VLF-EM FIELD STRENGTH AIRBORNE SURVEY (SEATTLE)	
SLOCAN MD., B.C.	
N.T.S. 82F-10W	DATE DEC 1988
DRAWN BY RPM, MJM	FIGURE No 4

LEGEND

220 — Flight line with reading no.

Contour interval 10%

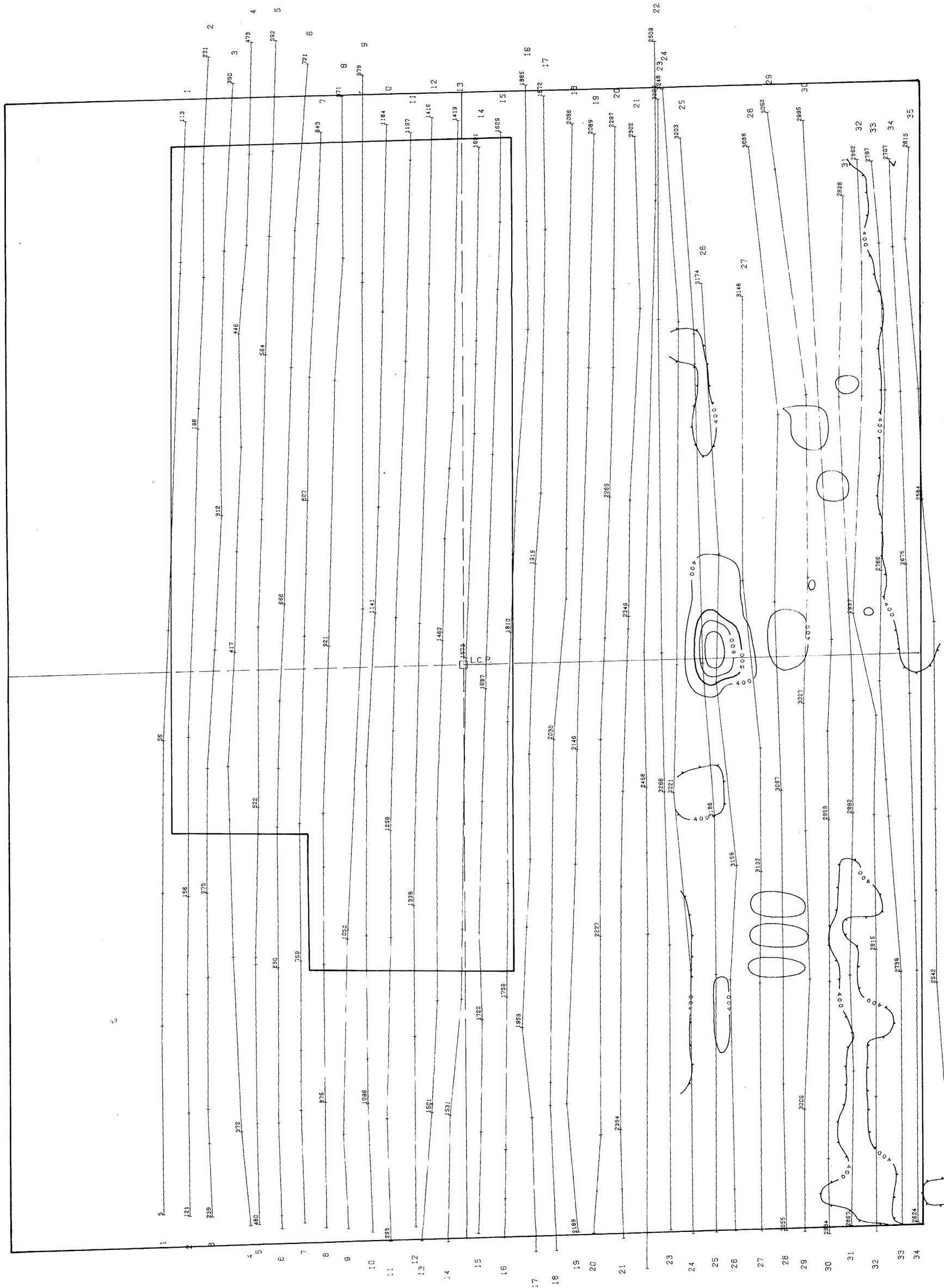
Transmitter Seattle, Washington

Estimated legal corner post

Seattle from At 24.5°

0 200 400 600 800 metres

116° 50'



49°40'

SCALE 1:10,000

0 200 400 600 800 metres

LEGEND

232 Flight line with reading no.

Contour interval 100 gammas

Base Value 57000 gammas

Estimated legal corner post

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. DiSPIRITO

To accompany a report by F. DiSpirito, B.A.Sc., P.Eng.

ROCK OF AGES PROJECT

FOR : CHELIK RESOURCES INC.

BY : SHANGRI-LA MINERALS LTD.

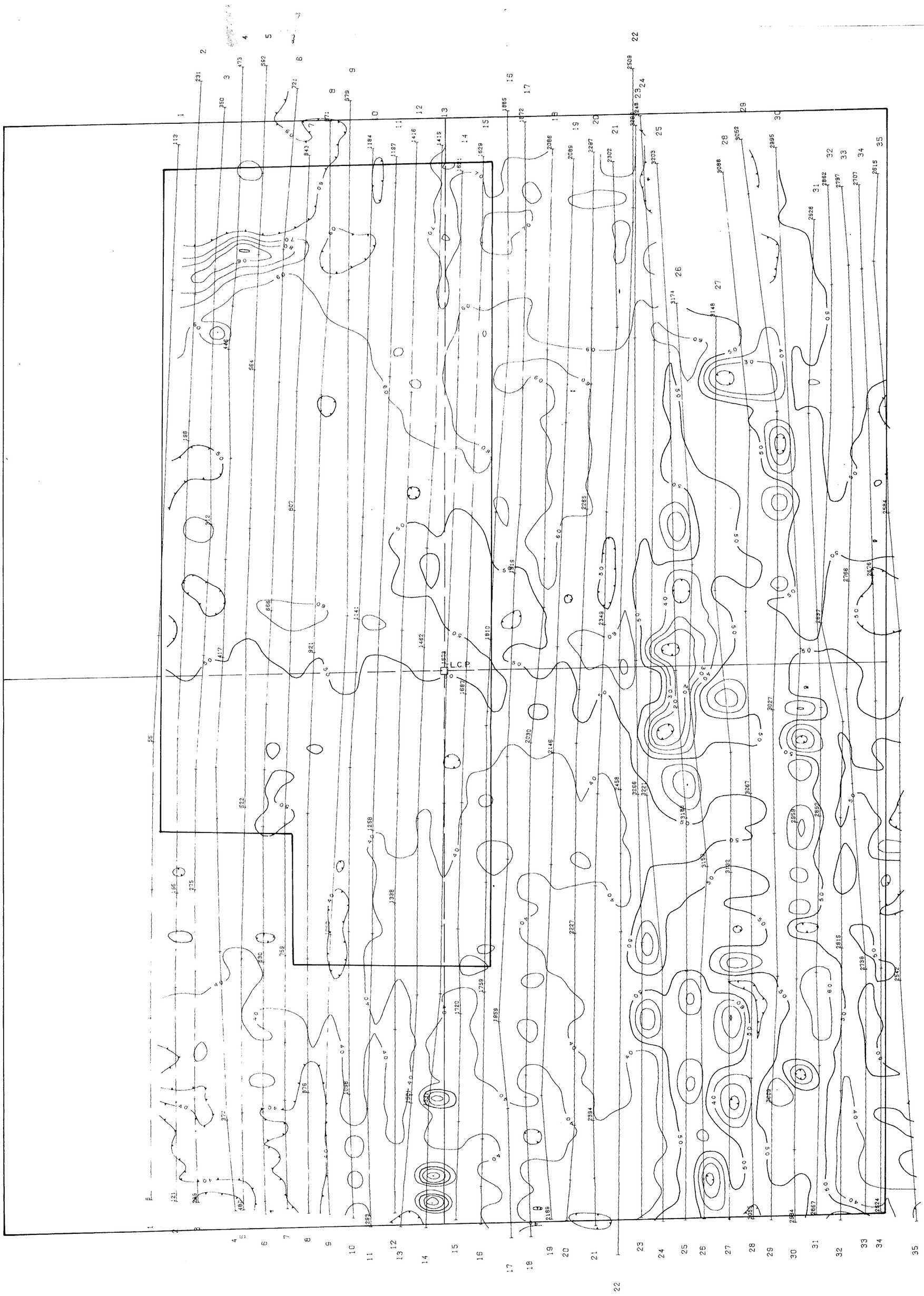
TOTAL MAGNETIC FIELD STRENGTH AIRBORNE SURVEY

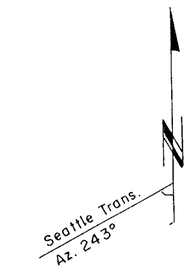
SLOCAN M.D., B.C.

N.T.S. 82F-10W	DATE : DEC 1986
DRAWN BY : R.P.M., M.J.M.	FIGURE Nº 3

116° 50'

49° 40'





SCALE 1:10,000

0 200 400 600 800 metres

LEGEND

232 Flight line with reading no.

Contour interval 10%

Transmitter: Seattle, Washington

Estimated legal corner post

To accompany a report by F. DiSpirito, B.A.Sc., P.Eng.

ROCK OF AGES PROJECT

FOR : CHELIK RESOURCES INC.

BY : SHANGRI-LA MINERALS LTD.

VLF-EM FIELD STRENGTH
AIRBORNE SURVEY
(SEATTLE)

SLOCAN M.D., B.C.

N.T.S. 82F-10W	DATE : DEC 1986
DRAWN BY : R.P.M., M.J.M.	FIGURE Nº 4