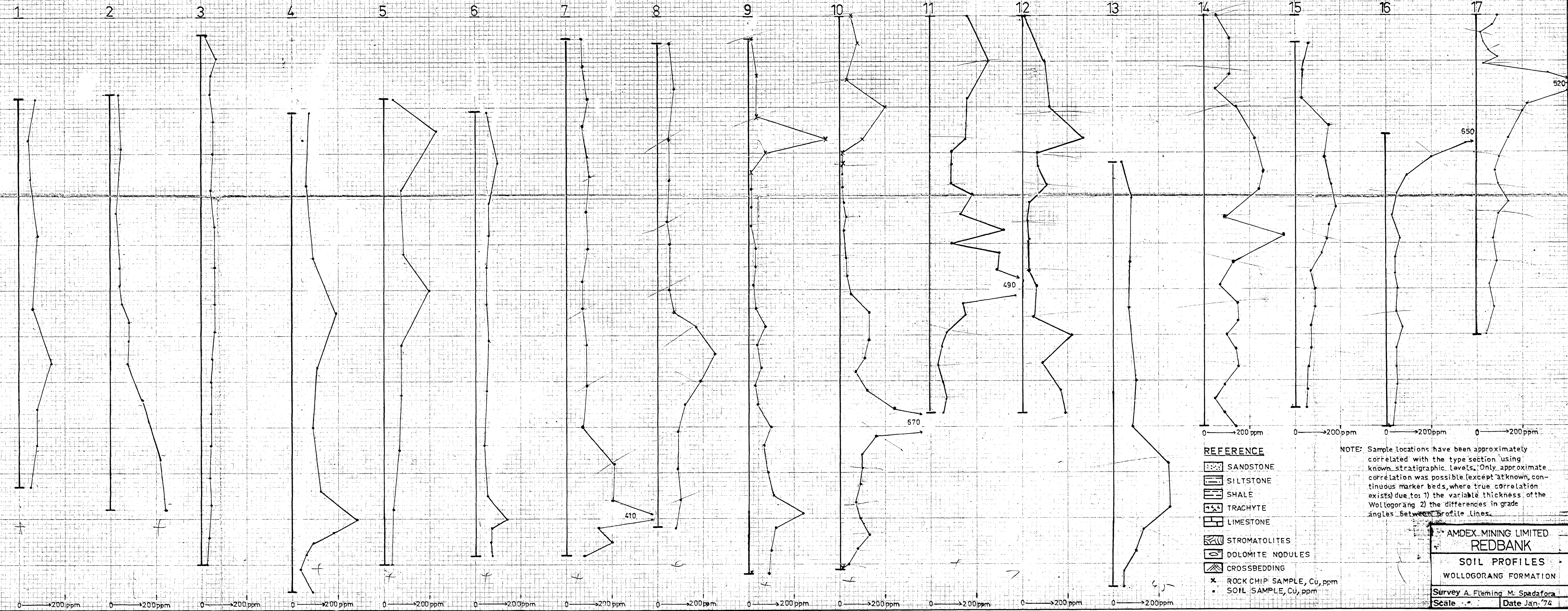
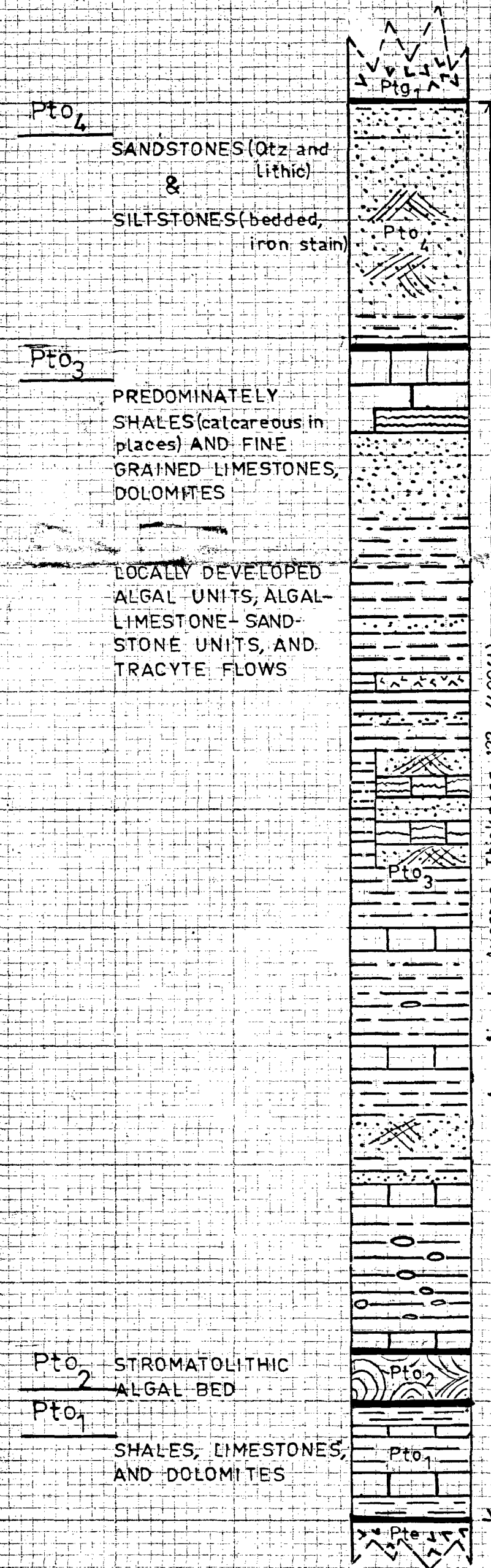


TYPE SECTION



REFERENCE

- SANDSTONE
- SILTSTONE
- SHALE
- TRACHYTE
- LIMESTONE
- STROMATOLITES
- DOLOMITE NODULES
- CROSSBEDDING
- ROCK CHIP SAMPLE, Cu, ppm
- SOIL SAMPLE, Cu, ppm

NOTE: Sample locations have been approximately correlated with the type section using known stratigraphic levels. Only approximate correlation was possible (except at known continuous marker beds, where true correlation exists) due to: 1) the variable thickness of the Wollogorang 2) the differences in grade angles between profile lines.

AMDEX MINING LIMITED
REDBANK

SOIL PROFILES

WOLLOGORANG FORMATION

Survey A. Fleming M. Spadafora

Scale Date Jan. '74

No 239

PROPERTY**TOTAL DEPTH**

DATE COMMENCED

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE NO

SHEET NO 9 of 14

DEPTH	DIP	AZIMUTH
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DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

DEPTH	DIP	AZIMUTH

14-00000

[illegible]

DRILL HOLE RECORD

No 240

PROJECT REDBANK

PROPERTY

HOLE SURVEY

HOLE NO

SHEET No 10 of 14

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION SEVEN MILE

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	LITHOLOGY										STRUCT										TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																												
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DRILL HOLE RECORD

No 241

PROJECT REDBANK

PROPERTY

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION SEVEN MILE

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

DEPTH	DIP	AZIMUTH

HOLE NO

SHEET NO 11 of 14

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

LITHOLOGY										STRUCT	TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Additional Data

No 242

PROPERTY**TOTAL DEPTH**

DATE COMMENCED

DATE COMPLETED

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

HOLE NO

SHEET NO 12 of 14

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

[illegible]

Additional Data

Nº 243

PROPERTY

TOTAL DEPTH

DATE COMMENCED

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE**DEPARTURE**

ELEVATION

HOLE SURVEY

HOLE NO

SHEET NO 13 of 14

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED.

ASSAYED

[illegible]

Additional Data

№ 244

PROPERTY

TOTAL DEPTH

LOCATION

DATE COMMENCED

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

HOLE NO

SHEET NO 14 of 14

DEPTH	DIP	AZIMUTH

DRILL

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

[illegible]

DRILL HOLE RECORD

No 245

PROJECT RED BANK

PROPERTY

HOLE NO RTF 3

TOTAL DEPTH

DATE COMMENCED October 26 '73

HOLE SURVEY

DEPTH	DIP	AZIMUTH

HOLE NO 3 SHEET NO 1 of 3

DRILL Longyear 28

DRILLER J.A. Smith

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

LOCATION Titley's Flat

DATE COMPLETED October 29 '73

INITIAL AZIMUTH -60°

INITIAL DIP

LATITUDE 126.400 N

DEPARTURE 131.900 E

ELEVATION

	Weathering	Casing	Core	Core Recovery %	Core Colour	Cuttings	Rock Unit	Depth	Graphic Log	LITHOLOGY								Rock Type	STRUCT			TEXTURE												MINERALISATION %												ASSAY																																																																																																																																																																																																																																																																																																																																																					
										Quartz	Feldspar	Micas	Mafics	Clay	Glaucous	Carbonate	Alteration		Jointing	Schistosity	Foliation	Brecciation	Silicification	Quartz Vein	Apatite	Glaucous	Granitic	Metamorphic	Sedimentary	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic	Pneumatitic

Additional Data

No 245

SHEET NO 2 of 3

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

.....

OG

LOG

.....

.....

Additional Data

No 247

PROPERTY

TOTAL DEPTH

DATE COMMENCED

LOCATION**DATE COMPLETED**

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

DEPTH	DIP	AZIMUTH

HOLE NO

SHEET NO 3 of 3

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

.....
SAMPLED

.....
ASSAYED

[illegible]

Additional Data

Nº 245

PROPERTY

TOTAL DEPTH

DATE COMMENCED October 26 '73

DATE COMPLETED October 19 '73

INITIAL DIP

DEPARTURE 131.900 E

ELEVATION

HQLE - SURVEY

HOLE NO 3 SHEET NO 1 of 3

DRILL Long year 28

DRILLER *Aug*

GEOLOGICAL LOG JA Smt.

RADIOMETRIC LOG

SAMPLED

ASSAYED

DEPTH	DIP	AZIMUTH

[illegible]

DRILL HOLE RECORD

No 245

PROJECT

PROPERTY

HOLE NO

TOTAL DEPTH

DATE COMMENCED

HOLE SURVEY

HOLE NO

SHEET NO 2 of 3

LOCATION

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILLER
GEOLOGICAL LOG
RADIOMETRIC LOG
SAMPLED
ASSAYED

										LITHOLOGY										STRUCT										TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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VEIN										SPALLING										FRAGMENTATION										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY										FACILITY					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Additional Data

Nº 247

PROPERTY**TOTAL DEPTH**

DATE COMMENCED

LOCATION**DATE COMPLETED****INITIAL AZIMUTH**

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

[illegible]

HOLE NO

SHEET NO 3 of 3

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

.....
ASSAYED

[illegible]

Additional Data

№ 226

REDD SNK

TOTAL DEPTH

307

DATE COMMENCED

Oct. 11 '73

HOLE NO

3 FK

TOTAL DEPTH

DATE COMMENCED

Oct 15 73

LOCATION

Sunny Flat Area.

Fort Knox anomaly

DATE COMPLETED

Oct 15 73

INITIAL AZIMUTH

- 20 -

INITIAL DIP

LATITUDE

119 300 N

DEPARTURE

124.000 E

ELEVATION

HOLE SURVEY

HOLE NO. *BFK* SHEET NO. *1* of *5*

[illegible]

DRILL Longyear 38
DRILLER Sub
GEOLOGICAL LOG J.S. Smith
RADIOMETRIC LOG
SAMPLED
ASSAYED

[illegible]

Additional Data

No 227

PROPERTY

TOTAL DEPTH

DATE COMMENCED**LOCATION**

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

DEPTH	DIP	AZIMUTH

HOLE NO BFK1 SHEET NO 2 of 5

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

	Core Recovery %	Core Colour	Cuttings Age	Rock Unit	Depth	Graphic Log	LITHOLOGY										Rock Type	STRUCT		TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																							
							Constituents %											Jointing	Schistosity	Faulting	Breggation	Silicification	Quartz Vein	Acanthite	Malachite	Azurite	Muscovite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Pyrite	

Additional Data

№ 228

SHEET NO 3 of 5

.....
ASSAYED

ELEVATION

Additional Data

carb.
hydrate

№ 230

PROPERTY

TOTAL DEPTH

DATE COMMENCED

DATE COMPLETED *October 15 73*

INITIAL AZIMUTH

INITIAL DIP

ELEVATION

LATITUDE**DEPARTURE**

HOLE SURVEY

HOLE NO.

SHEET NO 5 of 5

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

.....
ASSAYED

Additional Data

DRILL HOLE RECORD

No 231

PROJECT *REUBAH*

PROPERTY

HOLE NO *BFK 2*

TOTAL DEPTH

917

DATE COMMENCED

October 15 73

LOCATION *SEVEN MILE*

DATE COMPLETED

October 25 73

INITIAL AZIMUTH

-85°

INITIAL DIP

LATITUDE

123.200 N

DEPARTURE

129.200 E

ELEVATION

HOLE SURVEY

DEPTH	DIP	AZIMUTH

HOLE NO

SHEET No 1 of 14

DRILL

Log 4201 38

DRILLER

A.A.

GEOLOGICAL LOG

J.A. Smith

RADIOMETRIC LOG

SAMPLED

ASSAYED

LATITUDE		LONGITUDE		DEPARTURE		LITHOLOGY		STRUCT		TEXTURE		MINERALISATION %		ASSAY															
WEATHERING		CORE RECOVERY %		Core		Graphic Log		QUARTZ		Met.		Sed.		SAMPLE INTERVAL		SAMPLE NUMBER		Ca in PPM		Al in PPM		Mn in PPM		Fe in PPM					
Colour		Cuttings		Rock Unit		Depth		Constituents %		Rock Type		Ign.		Met.		Sed.		PYRITE		CHALCOPRITE		GALENA		SPHALERITE		CHALCOCITE		COVELLITE	
0		1		2		3		4		5		6		7		8		9		10		11		12		13		14	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
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10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5		5.0		19.5		22.5		25.0		27.0		4.0		81.0		5.2		37.0		8.0		45.0		2.5		48.0	
10.0		12.5																											

Additional Data

DRILL HOLE RECORD

No 232

PROJECT REDBANK

PROPERTY

HOLE SURVEY

HOLE NO

SHEET No 2 of 14

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION SEVEN MILE

DATE COMPLETED

INITIAL AZIMUTH -85

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILL
DRILLER
GEOLOGICAL LOG
RADIOMETRIC LOG
SAMPLED
ASSAYED

	WATERING	CORE NO.	CORE RECOVERY %	Core Colour	Cuttings Age	Rock Unit	Depth	Graphic Log	LITHOLOGY										Rock Type	TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Additional Data

DRILL HOLE RECORD

No 233

PROJECT REDBANK

PROPERTY

HOLE SURVEY

HOLE NO

SHEET NO 3 of 14

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION Seven mile. N.

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

	WEATHERING	CORE STATE	LITH. STATE	CORE RECOVERY %	Colour	Cuttings	Rock Unit	Depth	Graphic Log	LITHOLOGY								Rock Type	STRUCT								TEXTURE			MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
										Quartz	Feldspar	Micas	Mafics	Clay	Opacues	Carbonate	Alteration		Jointing	Schistosity	Faulting	Brecciation	Silicification	Quartz Vein	Apatite	Granite	Porphyry	Hydrothermal	Met.	Sed.	Pyrite	Chalcopyrite	Galena	Sphalerite	Chalcocite	Covellite	Sample Interval	Sample Number	Cu ppm	Ni ppm	Mn ppm	Fe %																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
40					133.0		133.0	6.6	140.0	7.0	147.0	6.1	152.0	8.0	160.0	6.2	167.0	10.0	177.0	10.0	187.0	10.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Additional Data

197

№ 234

PROPERTY

TOTAL DEPTH

DATE COMMENCED

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

ELEVATION

LATITUDE

DEPARTURE

HOLE SURVEY

HOLE NO

SHEET NO 4 of 14

DEPTH	DIP	AZIMUTH

DRILL

DRILL

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

[illegible]

Additional Data

DRILL HOLE RECORD

No 235

PROJECT REDBANK

PROPERTY

HOLE SURVEY

HOLE NO

SHEET No 5 of 14

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION SEVEN MILE

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

ASSAYED

LITHOLOGY										STRUCT	TEXTURE										MINERALISATION %										ASSAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Constituents %										Rock Type	Texture										Mineralisation %										Assay																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Quartz	Feldspar	Micas	Mafics	Clay	Opalines	Carbonate	Alteration	Jointing	Fracturing		Silicification	Quartz Vein	Granitic	Porphyritic	Microcrystalline	Amorphous	Phyllic	Chalcopyrite	Pyrite	Chalcocite	Covellite	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Ot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Additional Data

№ 236

PROPERTY

TOTAL DEPTH

DATE COMMENCED

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

ELEVATION

LATITUDE

DEPARTURE

HOLE SURVEY

HOLE NO

SHEET NO 6 of 14

DEPTH	DIP	AZIMUTH

DRILL
DRILLER
GEOLOGICAL LOG
RADIOMETRIC LOG
SAMPLED
ASSAYED

[illegible]

Nº 237

PROPERTY

TOTAL DEPTH

DATE COMMENCED

INITIAL AZIMUTH

INITIAL DIP

DATE COMPLETED

LATITUDE

DEPARTURE

ELEVATION

HOLE SURVEY

HOLE NO

SHEET NO 7 of 14

DEPTH	DIP	AZIMUT

DAU

SALES DRILL

DRILLER

GEOLOGICAL LOG

RADIOMETRIC LOG

SAMPLED

SAMPLED

ASSAYED

[illegible]

Additional Data

DRILL HOLE RECORD

No 238

PROJECT REDBANK

PROPERTY

HOLE SURVEY

HOLE NO

SHEET No 8 of 14

HOLE NO BFK 2

TOTAL DEPTH

DATE COMMENCED

LOCATION SEVEN MILE

DATE COMPLETED

INITIAL AZIMUTH

INITIAL DIP

LATITUDE

DEPARTURE

ELEVATION

DEPTH	DIP	AZIMUTH

DRILL
DRILLER
GEOLOGICAL LOG
RADIOMETRIC LOG
SAMPLED
ASSAYED

140	1	2	3	4	5	6	7	8	9	150	1	2	3	4	5	6	7	8	9	160	Additional Data																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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ANNUAL REPORT
22. 10. 1972 TO 22.10.1973

EXPLORATION LICENCE NO. 689
REDBANK, NORTHERN TERRITORY ✓

APPENDICES I, II and III

OPEN FILE

VOLUME III of IV

TRIAKO MINES N.L.

JANUARY, 1974

APPENDIX I

TRIAKO MINES N.L.

SUMMARY REPORT

REDBANK COPPER PROSPECT

REDBANK, N.T., AUSTRALIA

BY

E.B. BELL

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REDBANK COPPER PROSPECT, N.T.

INTRODUCTION

Over \$1,000,000 has been spent on detailed geological exploration at Redbank in recent years, the two most comprehensive programmes by Placer Prospecting (Australia) Pty. Ltd. in 1967 and Harbourside Oil - Newmont Pty. Ltd. in 1970-1971. Numerous reports and several critiques reviewing the implementation and interpretation of the exploration have been written. The author spent the month of July and part of August and September at Redbank on behalf of Amdex Mining Limited to try and assimilate this large amount of exploration data and assist in the organization of an exploration program.

SUMMARY AND CONCLUSIONS

Six vertical collapse breccia pipes containing ore grade mineralization mainly as chalcopyrite have been drilled at Redbank. Three other occurrences believed to be pipes but not conclusively confirmed have also been tested. The pipes occur within the flat lying Lower Proterozoic Gold Creek Volcanics and the underlying siltstones and dolomites of the Wollogorang Formation. There may be a deep magmatic as well as a volcanic origin for the deposits but past exploration has been so successful in locating mineralization that very little drilling outside of these centers has been done. The genesis of the deposits is therefore still a matter for speculation.

The total combined drill indicated ore as calculated by Newmont Pty. Ltd. from drill intersections in the known breccia pipes is 4,457,100 tons averaging 1.75% Cu at 0.5% Cu cut off grade. About 80% of the ore or 3,607,100 tons at 1.82% Cu is contained within the two largest structures at Bluff and Sandy Flat both of which have been extensively drilled.

The present known pipes have finite dimensions but the possibilities for increasing the reserves at Bluff and Sandy Flat are:

- (a) The possibility that clusters of pipes occur relatively close together at Sandy Flat, Bluff, Roman Nose and Seven Mile. Geochemical and I.P. anomalies, physiographic features and projected geology give credence to this. Barringer Input and I.P. anomalies in covered areas are also encouraging. If clusters of pipes do in fact occur they could be interconnected by the flat lying manto type mineralization.
- (b) Flat lying manto type ore extending outward from the pipes along the interface between the Gold Creek Volcanics and the underlying Wollogorang sediments. Five holes at Sandy Flat, 3 holes at Bluff and 1 hole at Quartzite have intersected this type of mineralization.

Opportunities for completely new discoveries are believed to be good. In order of importance the following ore possibilities are attractive:

- (1) Location of new collapse pipe structures with the same general features as those already discovered. Based on present knowledge, areas that have the complete Gold Creek volcanic section offer the best ore possibilities. Those that have been eroded to the level of the Wollogorang sediments are less prospective but may warrant further work when knowledge of the genesis becomes more apparent.
- (2) Possible lenses of ore in the volcanic flows that may be interconnected with pipes along fault zones or mineralized shears. Geochemical anomalies in the volcanics on the south side of Sandy Flat Valley and outcropping mineralization at the Masterton and Yellow Girl may be leakage halos from mineralized volcanic flows or optimistically even Cyprus Island type massive sulphide mineralization.
- (3) Mineralization associated with the late rhyolite phase of the volcanism.

LOCATION AND PHYSICAL FEATURES

Redbank is situated in Northern Territory near the Queensland border in sparsely populated, sub tropical, savannah country. A well defined wet season (about 30 inches) lasts from December to March and the roads into the area are generally inaccessible before May. The dry season is hot and humid.

The Redbank Camp and main mineral occurrences are located at approximately 137° 46' East Longitude and 17° 11' South Latitude (see Figure 1). It is accessible by Charter plane from Mt. Isa about 250 air miles, by unimproved roads via Burketown and from Mt. Isa via the Barkly Highway then north through Creswell Downs 450 miles. Alternately a paved Beef Road from Daly Waters, 54 miles south of the terminus of the North Australian Railroad extends to Booroolooloo which is 180 miles northwest of Redbank by dry weather road. Weekly mail and passenger air service is available to Wologorang Station about 17 miles east of the Redbank Camp. Excellent accommodations and messing facilities are available for up to 20 men at the well equipped Redbank Camp.

A shallow water port site has been surveyed at Massacre Inlet 40 miles north of Redbank on the Gulf of Carpentaria which would cater for shallow drought vessels to 5,000 tons dead weight.

Several bore holes have intersected large flows of water and adequate water for all mining and ancilliary services should not be a problem if an economic orebody is established.

HISTORY

The earliest discovery of copper ore in the Redbank district appears to have been made by Chinese at the China Girl workings near Wologorang Homestead in about 1900. The Packsaddle prospect was discovered by E. Thomas in 1912 and he subsequently organized an expedition to explore and develop the area. Mr. W.R. Masterton accompanied this group and stayed on after the party exhausted their finances. Mr. Masterton discovered most of the mineral occurrences and worked the prospects by hand sorting ore to over 30 per cent copper until the late 1950's. Prior to World War II the ore went to the Smelter at Chillagoe, Queensland and subsequently to Port Kembla in New South Wales.

Geologists attached to the Northern Territory Administration examined Redbank before World War II and Roland Blanchard reported on the area for Australian Mining & Smelting Company Ltd., a subsidiary of American Smelting and Refining Company in 1940. Numerous other companies examined the area during the 1950's but no actual work of any magnitude was undertaken until about 1960 when Carpentaria Exploration carried out geological mapping and some percussion drilling without success. Granville Development Pty. Ltd., a Sydney based company then acquired the prospects in 1965 and shipped some ore to Mt. Isa during 1966 but lost money.

Mr. Shulman, the present Chairman of Triako Mines N.L. and Buka Minerals N.L., personally optioned the prospects from Granville Development and in 1967 farmed the area out to Placer Prospecting (Australia) Pty. Ltd. Placer applied for a Prospecting Authority and carried out a program of geological mapping, stream sediment sampling, soil sampling, I.P. and diamond drilling but did not encounter anything of the dimensions they required. Mr. Shulman relinquished his option and Harbourside Oil N.L. was eventually granted Prospecting Authority No. 2885 in 1969 covering an area of 370 square miles. Two promising discoveries of primary copper mineralization were made by Harbourside at Sandy Flat and Bluff and in March 1971 they optioned the ground to the Newaim Joint Venture. Newmont Proprietary Limited carried out extensive geological and geophysical surveys and diamond drilling on behalf of the Joint Venture. This work defined the ore potential of the two largest known pipes. Newmont terminated their agreement in later 1971.

PROPERTY

The Redbank area is covered by E.L. 689 containing 370 square miles held by Harbourside Oil N.L. Several mineral leases covering the major prospects are also jointly owned by Harbourside and Westmoreland Minerals N.L.

Triako Mines N.L. negotiated an agreement with Harbourside-Westmoreland in June 1972 providing for:

- (a) Purchase of 80% of Mine Zone leases
- (b) Purchase of 100% of E.L. 689
- (c) Purchase of all equipment and camp.

Triako must spend \$1,000,000 on exploration and thereafter Harbourside-Westmoreland must contribute to 20% of expenditures or proportionately dilute their equity to 7.5%. No time is set for the expenditures to be incurred and Triako are the sole managers.

Subsequent to the above agreement Triako applied for an E.L. south of E.L. 689 and have assigned 50% of their agreement to Buka Minerals N.L.

GENERAL GEOLOGY

The main mineralization in the Redbank copper district occupies an area approximately 3 miles wide by 4 miles long. It is roughly bordered by two prominent escarpments on the west and northwest by the edge of the Masterton Quartzite mesa that rises about 100 feet above Sandy Flat and on the south and southeast by the edge of trachytic lava flows that drops down some 300 feet into Settlement Creek where the Wollogorang sediments are exposed.

The youngest stratigraphic unit other than the alluvial cover and the laterite capping over Sandy Flat is a Cretaceous? sandstone (Masterton rubble) that unconformably caps several of the collapse pipes. The Lower Proterozoic Masterton Formation of which the lower member, the Gold Creek Volcanics consisting of a late stage rhyolitic phase and a thick series of trachyte lava flows, tuffaceous sandstones and andesitic lavas at the base of the sequence is the main ore host. Copper mineralization appears to be closely associated with the last rhyolitic stage of this volcanic episode. The Masterton sandstone which caps the volcanics is unmineralized. All of the interbedded tuffs and sandstones in the Masterton Formation are ripple marked probably indicating shallow seas near a shoreline.

The volcanics overlie the Wollogorang Formation which is predominantly greyish shale and siltstone and grey and red dolomite and dolomitic siltstone. Sandstone lenses and thin flows of trachytic lava also occur within the sequence indicating that minor volcanism took place during the Wollogorang sedimentation. This formation conformably overlies the Settlement Creek Volcanics.

The Packsaddle microgranite or rhyolite crops out along the northern boundary of the E.L. and must be part of the intrusive system that supplied the volcanics. No definite hyabyssal rocks have been identified in any of the drill holes.

The Gold Creek volcanics show slight doming which may be attributed to a possible sill like intrusive at depth. A gentle dome can be seen looking east from the top of the Masterton escarpment. Dips however seldom exceed 5° and the area is actually relatively undisturbed. The Wollogorang sediments are folded into fairly low amplitude synclines and anticlines and this folding is reflected in the lower part of the Masterton formation but it dies out in the upper portion of the Gold Creek Volcanics. Figure 12 shows the general flat attitude of the geology extending from Redbank to East Bluff.

Prominent east west lineaments have had an influence on the formation of the collapse pipes, i.e. alignment of pipes Redbank to Bluff. They show up on all Redbank photography and on airborne magnetometer maps of the area. These appear to be old basement faults that may have been silicified and were exposed as ridges in the old topography. There may also have been slight activity during the volcanic period so that tight breaks extended through the more plastic Wollogorang formation. They are now only residual features in the Gold Creek volcanics and are not easily recognized at the surface.

Transverse faults trending northeast-southwest are the most apparent recognizable breaks at this time and may represent block faulting possibly hinged on the old basement lineaments. Movements are nonetheless very minor with displacements seldom more than a few feet.. If an intrusive initially domed the Wollogorang sediments and then the entire volcanic sedimentary sequence subsided back into the void created after the evacuation of the thousands of cubic kilometers of lava, broad block adjustments of this nature would have taken place.

MINERALIZATION

The main copper orebodies discovered are directly associated with the collapse breccia pipes described by previous explorers. Whether they originated in the accepted breccia pipe manner is uncertain but they are located along or near junctions of the major eastwest lineaments and the transverse faults discussed above. They are strongly fractured zones which

have been favourable loci for mineralization. The general impression is that they have collapsed inwards and down, brecciation varies from intense shattering to zones with only tight fractures. The development of the pipes appears to have been associated with the last gaseous phase of the volcanism which probably took place prior to the deposition of the Masterton sandstone. This however is subject to conjecture as the thick sandstone may obscure other such structures that did not reach the old surface.

The collapse pipes and the associated chalcopyrite mineralization is believed to be closely related in time. At both Sandy Flat and Bluff the ore bearing solutions or vapors appear to have followed a spiral like course suggesting a gaseous state in which both the more intensely brecciated and porous zones were well mineralized. The interior of the pipes can be roughly correlated with the exterior rock types but are more broken and jumbled and generally more altered. Mud filling which seems to be mainly finely ground volcanic material is common throughout the pipes.

The primary mineralization is almost exclusively chalcopyrite in the form of veinlets, fracture fillings and as disseminations in the more porous rock. Calcite is the most abundant gangue mineral and may be derived from CO₂ gas leached from the dolomitic Wollongorang formation. Pyrite to chalcopyrite seldom exceeds a ratio of 1:1.

Argillic and chloritic alteration is common in the pipes and partly accounts for the greyish more bleached appearance of the pipe. Clay minerals and siderite are common in the pipes as well as in the volcanic flows, celadonite, a greenish colored member of the illite clay family is ubiquitous throughout the Gold Creek Volcanics.

Some geologists postulate that regional potash alteration of the volcanics may account for the bleached pink appearance of the lavas. This may be true but there is a general low degree of metamorphism associated with the volcanic episode.

MINERALIZED STRUCTURES

Recent work by Amdex Mining Limited has been concentrated on areas of known mineralization in an effort to obtain a better understanding of ore controls. An area of about 12 square miles is highly prospective and for the sake of discussion I have divided it into a northern and southern portion.

Amdex geologists have mapped all of the outcropping geology over the 12 square miles and have completed soil sampling and auger sampling of much of the favourable ground. A detailed Gradient Array I.P. program is now underway. Brief descriptions of the main mineralized structures follow.

Southern Zone

A sand covered valley south of the Redbank Camp extends from the Prince prospect east and northeasterly for about 4 miles embracing the Sandy Flat orebody and Seven Mile prospects. Extensive sand cover obscures all of the geology and about 20 feet of cemented iron laterite beneath the sand further masks the area. Auger samples of the laterite are nonetheless effective in defining anomalies associated with the ore at Sandy Flat.

Sandy Flat (See Figures 3 through 11)

There are no outcrops around the Sandy Flat Prospect and the mineralization is buried beneath several feet of sand outwash overlying about 10 feet of dense cemented iron laterite and sandstone.

Soil geochemical sampling carried out by Placer Prospecting showed a low order copper anomaly over the present known pipe and Harbourside tested this anomaly by an Induced Polarization survey which gave a good response. They then drilled the main anomaly and intersected high grade copper mineralization in their first hole.

The Sandy Flat pipe has been extensively drilled by 13 vertical holes and angle holes which have accurately defined the dimensions of the structure. Only one hole SF-29 was drilled outside the main pipe. The deepest hole SF-9 was 1,328 feet.

A high grade supergene zone containing chalcocite and malachite extends to 100 feet below the surface. The primary mineralization is all chalcopyrite and it occurs as disseminations, veinlets and fracture fillings associated with strong chloritic alteration. It follows a rough spiral pattern with the higher values related to the upper and lower clastic sequences of the Gold Creek formation. The two zones of high copper mineralization are separated by low grade material extending from about 300 to 600 feet.

The interface between the Gold Creek volcanics and the Wollogorang formation is mineralized and diamond drill holes SF-3, 4, 5, 11 and 30 have all intersected this mineralization generally only a few feet from the inferred margins of the pipe. How far this mineralization extends outward from the pipe in the form of a flat lying manto is unknown. Deepening holes SF-21, SF-5 and SF-2 as shown on Figures 4, 5 and 11 would give confidence that this mineralization has some continuity.

A slight depression around Sandy Flat shows up as scallops on photographs (see Figure 2). Auger geochemical samples within this feature are anomalous and recent I.P. work shows a possible pipe about 250 feet east of the known orebody and of similar size. A flat lying I.P. anomaly about 250 feet deep extending west to Prince is interpreted to be possible disseminated mineralization in volcanic flows. Drill holes SF-2 and SF-6 shown on Figure 11 both show good disseminated chalcopyrite. SF-2 contains 1.24% Cu from 307.5 to 438.3 and SF-6, 1.05% Cu from 325 to the bottom of the hole. SF-21 also shows disseminated chalcopyrite to the bottom so they all lend credence to the anomaly.

Prince

The Prince is located about 1,500 feet west of Sandy Flat. Secondary copper minerals in cemented iron laterite were discovered by Mr. Masterton and he and another local miner are reported to have shipped 85 tons of high grade chalcocite and oxide copper ore from this location.

Dr. Hopwood mapped the area for Newmont and identified it as a possible pipe structure. Several percussion drill holes have been drilled by Harbourside and Newaim with disappointing results. The surface outcrop at Prince is sparse and the open cut is filled with water, however considerable rhyolite agglomerate rubble and trachite has been excavated so the mineralization is at least partly in situ.

Geochemical sampling in the area of the workings is misleading due to surface contamination but the Gradient Array I.P. suggest that the Prince is on the same flat lying structure as Sandy Flat. It is therefore still an interesting area for further exploration pending the results of follow up at Sandy Flat.

Seven Mile

Seven Mile prospect is situated about one mile northeast of Sandy Flat and is also covered by recent alluvium. A small outcrop containing oxide copper was discovered by Mr. Masterton who sunk a shaft on this mineralization. Harbourside drilled nine percussion holes around the old shaft and 4 holes about 500 feet north of the prospect around a small exposure of sandstone. The holes tested the surface malachite staining at the Seven Mile workings and the combination of a weak I.P. anomaly and the favourable physiographic sandstone outcrop. One of the percussion holes was deepened by diamond drilling but none of them intersected significant mineralization. Several strong I.P. anomalies that show up on work now underway will require further investigation.

Malachite staining occurs on the pediment above the alluvium fill east of Seven Mile (Maxwell Anomaly). This was sampled by Newmont and an encouraging geochemical anomaly was partially outlined but no drilling was carried out. Amdex have done some auger drilling in this area and have completed Gradient Array I.P. coverage. Rhyolite agglomerate which is anomalous in many places crops out at Maxwell and may account for the geochemical anomaly but the geophysics shows anomalies similar to those at Sandy Flat. Further definition of the I.P. is planned and this area may eventually require drilling to determine whether the anomalies are related to sulphide mineralization.

Masterton - Yellow Girl

These two prospects are located about 5,000 feet southeast of Sandy Flat in the outcropping volcanics above the valley. Yellow Girl is at the base of rhyolite agglomerate and Masterton is in fairly massive trachyte below the agglomerate contact. Considerable malachite paint has stained the rocks beneath protected ledges in both places which attracted their attention to Mr. Masterton but he was unable to find anything high grade enough to be mined. Other occurrences of copper staining have been found north of Yellow Girl in similar stratigraphic positions.

Amdex geologists are presently mapping and sampling the area and it may prove to be a possible source for the late stage rhyolite. Several bowl like depressions that show up on photographs have been visited and they are large caldera-like features rimmed by rhyolite agglomerate.

Although I feel that the mineralization is related to this late stage rhyolite event it may not have localized ore in this area. Newmont suggested that Prince, Yellow Girl, Masterton and Black Charlie may be situated on a common structure. They do line up along an arcuate zone but whether this has any significance is doubtful. One line of dipole-dipole I.P. was run over the Yellow Girl without finding any anomaly.

Black Charlie

I.P., E.M. and drilling including one 528 feet diamond drill hole has been done over the old workings at this prospect south of the airport. Although this work was not encouraging the surface mineralization in the trachyte still makes it an interesting prospect and further work including mapping, geochemical sampling and I.P. are planned by Amdex.

Northern Zone (See Figure 12)

The strong east-west lineament extending from Redbank east to Bluff discussed in the General Geology is a prominent feature that must have some control over mineralization. Nine prospects are situated along this structure of which five exhibit breccia pipe characteristics. The remaining four may be pipes but at this time it is not definite. Surface geology is reasonably well expressed along this 15,000 feet of strike length. The following described prospects extend from east to west.

Bluff (See Figures 13 through 21)

The Bluff is a prominent flat lying outcrop of brecciated trachyte with weak surface malachite mineralization. The western portion of the area is devoid of vegetation except for spinifex and some sparse copper weed that roughly outlines the present known collapse pipe. Surface mineralization can be traced east about 1,000 feet mainly as malachite staining in joints and steeply dipping east west fractures. Soil geochemical sampling shows a strong anomaly with a very sharp cutoff measuring 1,500 feet long by 800 feet wide.

The Bluff pipe has been extensively drilled by both air rotary and diamond drilling and the structure is well defined. The ore grade mineralization plunges to the north at about 70° and sections of the drilling suggest that there may be a branch pipe or possibly fracture controlled mineralization extending north beyond the limits of present drilling. Like Sandy Flat, the high grade mineralization tends to be mainly fracture fillings and disseminations in the more porous brecciated rocks. Although veins with massive chalcopyrite are found they are not common. Large unmineralized blocks of trachyte occur within the center of the pipe. The deepest hole at Bluff is BL-13, 1,100 feet, which either cut the entire Wollogorang section and entered Settlement Creek volcanics or has intersected a dislodged block of Wollogorang and then re-entered the pipe. The andesite in the bottom of the hole does not have a hypabyssal appearance as suggested by Newmont.

Newmont only report flat lying replacement mineralization outside the collapse pipe in BL-8 however holes 124, 106 and BL-6 (see Figures 15 and 17) have all intersected mineralization along the sedimentary-volcanic interface. Whether this mineralization has any continuity has to be proven as all of the intersections are very close to the pipe. Deepening holes BL-6 and BL-15 (Figure 14) would give more confidence that this ore has meaningful lateral extensions. As discussed in my memorandum dated August 9, 1973 this type of ore could add significantly to tonnage if continuity exists.

A strong geochemical soil anomaly with similar lack of vegetation extends east of Bluff about 1,000 feet and Newmont drilled two holes in this area. EB-2 intersected 1.5 feet of high grade Cu in volcanic grit at the top of the Wollogorang Formation and EB-1 shows brecciation and low 0.1% mineralization throughout. The I.P. indicates that another pipe of similar dimensions to the known Bluff pipe occurs north and west of EB-2.

Quartzite (See Figure 12)

Surface malachite and minor chalcocite mineralization occurs in outcrop at Quartzite about 900 feet west of Bluff. Two small pits were sunk on these showings by Mr. Masterton in mudstone similar to that commonly found in the pipes. Harbourside geologists recognized the prominent circular sandstone capping east of the pits as a possible expression of a collapse pipe and carried out an I.P. survey that showed a sulphide anomaly. They then drilled several holes of which DDH-19 intersected chalcopyrite. Newaim tested the pipe with additional I.P. and four new holes that generally defined the size of the pipe but did not delimit the mineralization or the shape of the breccia pipe.

The indicated bottom of the collapse as shown on the Longitudinal section (Figure 12) is well above the normal expected elevation and there is a good possibility that the pipe plunges to the south and has greater depth than indicated. Mineralization along the sediment-volcanic contact in QT-4 also warrants additional prospecting.

A +400 ppm geochemical anomaly about 500 feet southeast of Quartzite is interesting and will be included in the Gradient Array I.P. The strong geochemical anomaly immediately north of the Quartzite drilling has been down graded due to its lower elevation than outcropping mineralization but the area of the anomaly stands out and the creek flows in a horseshoe bend around the periphery suggesting it may be more resistant and possibly more significant than is apparent.

Roman Nose - Camp Valley (See Figure 12)

The proximity of these two pipes and the similar characteristics of deep mineralization extending to the bottom of the collapse in the Wollogorang justify treating them as sister structures.

Roman Nose - This pipe is situated about 900 feet west of Quartzite on the main east-west lineament. It is capped by the same sandstone rubble as Quartzite and a series of northeast southwest branching fractures may have localized the mineralization. Four holes have generally defined the collapse pipe but the possibility that mineralization is fracture controlled and more extensive than visualized warrants further consideration.

Drill holes RN-2 and RN-4 both show good mineralization. RN-4 assay results were not available at Redbank but Brian Marshall reports in his critique of the Newmont work that it averaged 1.11% Cu from 600 to 770' and 0.91% from 855 to 985 feet. Newmont geologists show a flat lying fault displacing the pipe which accounts for their offset between RN-2 and RN-4. There is no strong evidence for this fault in the core and I believe RN-2 has merely entered a wedge of unmineralized Wollogorang formation in the pipe. If so the pipe could be considerably larger than they project.

A geochemical anomaly south of Roman Nose is on an inferred cross fault and geophysics planned in this area may show up something of interest.

Camp Valley - Newaim carried out soil sampling and I.P. over Camp Valley without encouragement but displayed considerable courage in drilling this purely topographic anomaly. It is a depression with all of the characteristics of a typical volcanic vent and the pipe is represented by a small outcrop of sandstone in the center of the crater. Their first hole CV-1 intersected the collapse pipe which was mineralized from 585' to 975' with chalcopyrite as fracture filling and coatings on fracture faces. The average grade was considered low 0.94% and since CV-2 did not encounter strong mineralization they downgraded the potential of this pipe.

Neither the size or shape of the body has been defined and it could be larger than anticipated.

Down the hole I.P. in both Camp Valley and Roman Nose is strongly recommended if a drill arrives on the prospect before the I.P. crew finishes their work. Good mineralization in both places is over 300 feet (see Figure 12) lower than in other pipes.

Punchbowl

Newmont tested a large bowl shaped depression about 1,000 feet in diameter between San Manuel and Camp Valley by Anthill geochemical sampling and by one line of I.P. but did not follow up with any drilling. Their interest appears to have been aroused by the caldera type physiography and the large dimensions.

Amdex have carried out soil sampling on 100 feet centers along lines spaced 300' apart and a moderate +200 ppm anomaly occurs in the center of the bowl. As shown on Figure 2 this area will be covered by gradient array I.P. and if any anomalies develop it is an attractive area for further testing.

San Manuel

Like Camp Valley it took a lot of courage to drill San Manuel. Although a weak geochemical anomaly was indicated by Anthill geochem, Newmont appear to have gambled mainly on the sandstone capping that sticks out of a bowl like depression. On the basis of recent mapping San Manuel may be on the same structural break as Redbank.

The complete volcanic sequence is expressed on the ridge east of the main outcrop. Four holes were drilled to test the pipe, SM-2 appears to be outside any strong disturbance and only SM-4 intersected significant mineralization 2.77% Cu from 645 to 685'. SM-1 about 100 feet east of SM-4 was very low grade and was discouraging however disseminated chalcopyrite occurred throughout and it was not completely negative. SM-3 was too shallow, 210 feet to have intersected anything and both it and SM-2 warrant deepening to the Wollogorang sediments at some time.

On the basis of drilling this so called pipe has been down graded but it still remains an interesting area for further testing. It could very well be more of a fracture zone than a pipe and may be much larger than indicated by Newmont.

Azurite

Most of the hand sorted shipping ore produced by Mr. Masterton came from the Azurite workings and like the neighboring Redbank pit the immediate locality of the old prospect has been well tested by percussion and diamond drilling.

Newaim show that the drilling has indicated a collapse pipe but this is based on the degree of fracturing and brecciation intersected and is subject to query. Like Redbank I agree that the drilling does show more disturbance than normal but I hesitate to say that the holes show a definite breccia pipe. My impression is that Azurite is situated on the western end of the main east west structural lineament and that Redbank-San Manuel are on a sympathetic parallel structure south of Azurite. The supergene mineralization previously mined was mainly azurite and malachite and could well be transported some distance.

The weak chalcopyrite present in AZ-1 seems to be incipient disseminated mineralization in the volcanics and I doubt that the weathering of this low grade material resulted in the upgrading that has occurred. The flat area surrounding Azurite and Redbank is very prospective and I would rate strong I.P. anomalies that develop in this area as good targets for drilling.

Redbank

The Redbank open pit was the second largest producer of the ore mined by Mr. Masterton and it has been extensively drilled by Placer, Harbourside and Newaim with negative results as far as primary ore is concerned. The surface mineralization is mainly oxide copper with minor chalcocite.

The Redbank pit is on the flats north of a large bowl shaped depression and along a lineament that extends westerly from San Manuel. An almost complete section of Gold Creek volcanics has been preserved and the pit is entirely within the rhyolite agglomerate and mudstones that overlie the trachytic series.

Diamond drill holes RK-1 and RK-2 are credited with intersecting a pipe and RK-1 does in fact go through a section of brecciated trachyte and then into relatively undisturbed volcanics which Newaim reported to be a wall of the pipe. Weak chalcopyrite and pyrite were intersected in the upper portion of the hole. The weaker than normal chloritic and argyllic alteration leads one to believe that RK-1 and RK-2 are not definitely within a pipe but they do suggest a disturbed area that could be favourable for mineralization.

OTHER PROSPECTS

A number of interesting anomalies that are situated within the 12 square mile area of mineralization still warrant further work. They have been recognized by previous explorers who have carried out some work including drilling but additional coverage should be considered as time and budget permit. These prospects have been described in several reports and until all the present data collected by Amdex is available, I cannot add much to what has already been said. They are therefore only listed for reference.

Airport Valley
Camp Mountain and Camp Valley
Cross Lode
Goanna
Ridgeback

OUTLYING PROSPECTS

The author spent several days visiting prospects outside the main area of mineralization mainly to become acquainted with the regional geology. As Amdex geologists become more familiar with the known ore occurrences further regional work should certainly be carried out but my general impression is that the collapse pipes northeast of Redbank in the Wollogorang sediments are low order targets at this time. The previous

optimism that the Packsaddle microgranite might be hypabyssal and good hunting ground for deep seated mineralization has also been downgraded. A helicopter reconnaissance of this body was most disappointing and where visited we found no evidence of alteration or mineralization along any of the contacts. Slight doming of the sediments suggests that it probably was a sill like intrusive but if so it appears to have been a cold emplacement. Megascopically the rock looks like the rhyolite that caps the trachytic lavas.

Amdex have employed an experienced prospector to prospect within the two Exploration Licenses. He has covered most of the main area and a large portion of the small E.L. Several encouraging samples have resulted from this work and the sample locations will be visited by geologists.

GEOPHYSICS

Harbourside and Newaim experimented with both airborne and ground geophysics including:

- (1) A regional airborne magnetometer and scintillometer survey - McPhar
- (2) Airborne E.M. VLR & F-Y00 - McPhar
- (3) Induced Polarization - McPhar and C.G.G.
- (4) Ground E.M. and S.P. - Newmont

Sandy Flat and Bluff both responded to I.P. and E.M. and the aeromagnetism has proven to be very useful in interpreting the regional basement structure.

Newmont did not give high marks to geophysics but it is doubtful that Harbourside would have drilled either Sandy Flat or Bluff without the anomalies that developed from this work. With the knowledge now available there do not appear to be a lot of spurious conductors and sulphides generally indicate chalcopyrites.

Amdex have contracted for an airborne E.M. Input Survey by GeoTerrex Pty. Ltd. using the Barringer Research, Mark V and Mark VI Input system. Five hundred and ninety-four line miles of traverses at 1/8th mile spacing was flown over the mineralized area and several anomalies one of which is coincident with Sandy Flat have developed from this survey. Geochemical sampling and mapping where possible is now underway on the anomalies.

Geoquest Pty. Ltd. are presently carrying out a Gradient Array I.P. survey over all of the known orebodies and environs as shown on Figure 1. Some dipole dipole work will be done and down the hole I.P. should be done to improve definition of anomalies associated with known ore. At the time I left Redbank the Sandy Flat and Bluff grids had been completed and anomalies correlate very well with the known ore. Several strong anomalies adjacent to both the Sandy Flat and Bluff pipes have also developed and these are future drilling targets.

GEOCHEMISTRY

Soil and stream sediment sampling has been employed by all previous explorers although Newmont did not appear to rely heavily on this work. Amdex geologists are now covering the entire area by systematic gridding. A geochemist contracted from McPhar has reactivated the Techtron Atomic Absorption equipped laboratory that was designed by McPhar for Harbourside. He is now analyzing all samples at Redbank.

In retrospect the deep soil samples taken by Placer gave excellent results including anomalies at Sandy Flat. Amdex have employed an Auger drill to drill through the sand and recover samples from the laterite which appears to be very effective in defining the low order anomalies.

Stream sediment sampling has to include all small drainage to be intensive enough to be diagnostic. Recent sampling in the main mineralized area has shown up several new copper occurrences. This type of work should be carried out over all the Gold Creek Volcanics.

BASE MAPS

Geological mapping at Redbank is well advanced but plotting field work has been hampered by poor topographic plans. A triangulation network has been surveyed by Australian Aerial Mapping and the new photographs show the location of stations. A corrected base map should be constructed using these controls and recalculating latitudes and departures so that coordinates can be shown in both meters and feet. Contours at 5 meter intervals are suggested.

ECONOMIC COMMENTS

I am optimistic about the chances for finding major size ore-bodies at Redbank but the character of mineralization is such that new discoveries of ore shoots similar to those already located must be given a higher probability than suspected new high volume situations. The economics of mining these separated orebodies should therefore continually be reviewed and in so doing, the tonnage and grade requirements of Newaim for developing a mine and concentration plant should not be regarded as anything except guidelines for the type of operations that they would like to have. I do not suggest that the mining methods they propose may not in the end be the most desirable but conventional development by shafts and underground headings should certainly be considered in future feasibility studies. Drilling indicates that the walls of the collapse pipes are competent and that either shrink stoping or other methods of underground extraction could be applied. This would result in only a fraction of the waste removal required to develop openings for large trackless equipment. If the ore potential at either Bluff or Sandy Flat can be doubled so that 5,000,000 tons of ore exist in one or more adjacent pipes then a review of the economics utilizing more conventional mining methods should be made.

RECOMMENDATIONS

The next stage of exploration at Redbank will require core drilling. Due to the number of geophysical anomalies that have been located a minimum program of 12 new holes is recommended to test the full range of ore possibilities. No holes should be spotted until all of the recent geophysical work has been evaluated which will probably be mid October. In order of priority the following situations require testing:

- (1) Anomalies near known ore. Several anomalies that have similar characteristics to known mineralization are prime targets. Only Bluff and Sandy Flat grids had been tested prior to my departure and the anomalies indicate additional pipe like structures. Other situations will undoubtedly develop as the I.P. program progresses. ----- 4 holes
- (2) I.P. anomalies extending out from known ore as possible flat lying bodies. Disseminated mineralization in holes outside of known pipes give credence to this possibility particularly SF-2 and SF-6 at Sandy Flat as shown on Figure 11. ----- 4 holes

- (3) I.P. anomalies coincident with geochemical anomalies and in the favourable geological settings. ----- 2 holes
- (4) I.P. anomalies coincident with E.M. input anomalies. ----- 2 holes

I am in favour of core drilling all holes during the next stage of drilling and recommend that all holes be drilled to intersect the Wollogorang formation. This will require holes to an average depth of about 650 feet. A realistic test of the area therefore requires:

- (1) Deepening holes SF-21, SF-5, BL-15 and BL-111 918 feet
- (2) New holes, 12 at 650 feet each 7,800 feet
Total, say 8,800 feet

The cost of a program of this magnitude including camp maintenance, geological time and contingencies would be about \$150,000.

The present program of geological mapping, stream sediment sampling and soil and auger sampling is well organized and needs no comment.

In order to improve the knowledge of the collapse pipe mineralization the existing core should be relogged by the senior geologist in charge of future drilling preferably relating logging to sections that have been prepared. Emphasis should be given to:

- (1) Graphic logs - correct structure and correlation from that presently shown. Now that geologists are familiar with the surface geology a lot of information can be recorded which should aid correlation, flow tops, tuffaceous horizons and alteration are all more meaningful now than when we commenced work.

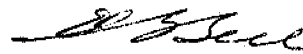
The core should be laid out as shown on sections and if it is graphically recorded it will be more meaningful than logging each hole independently.

- (2) Degrees of brecciation and alteration are in some cases subtle but if one person logs he will be seeing the same thing.

ACKNOWLEDGEMENTS

The author wishes to thank the Chairman and directors of Amdex Mining Limited and associated Companies for the opportunity of reviewing the past work and contributing to the Redbank exploration program. The able assistance of Johan Smit, Senior Geologist, Field Geologists Adrian Fleming and Michael Spadafora, Roger Fiddler, Geochemist and Le Furlong, Chief Geophysicist of Amdex is greatly appreciated.

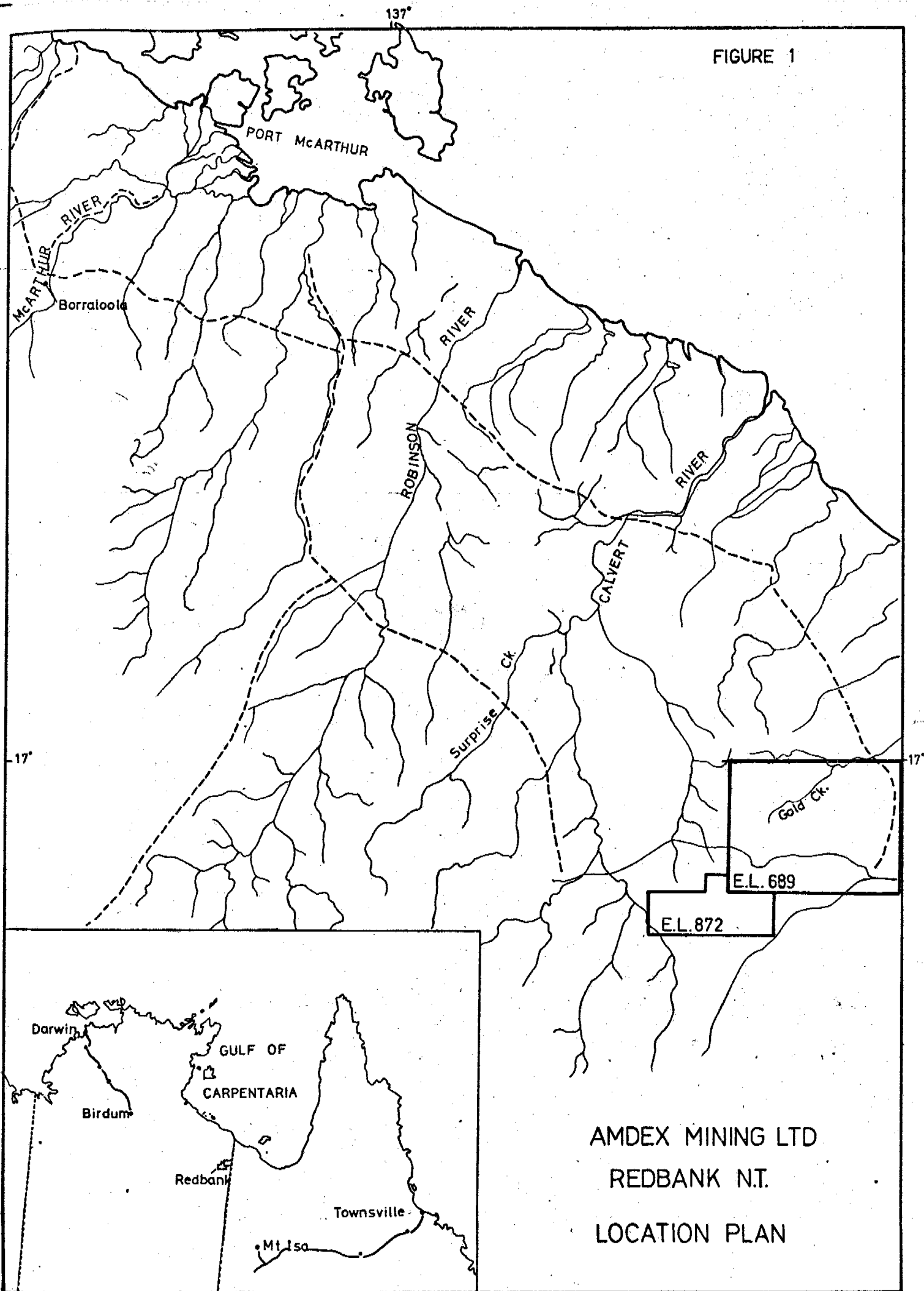
Respectfully submitted

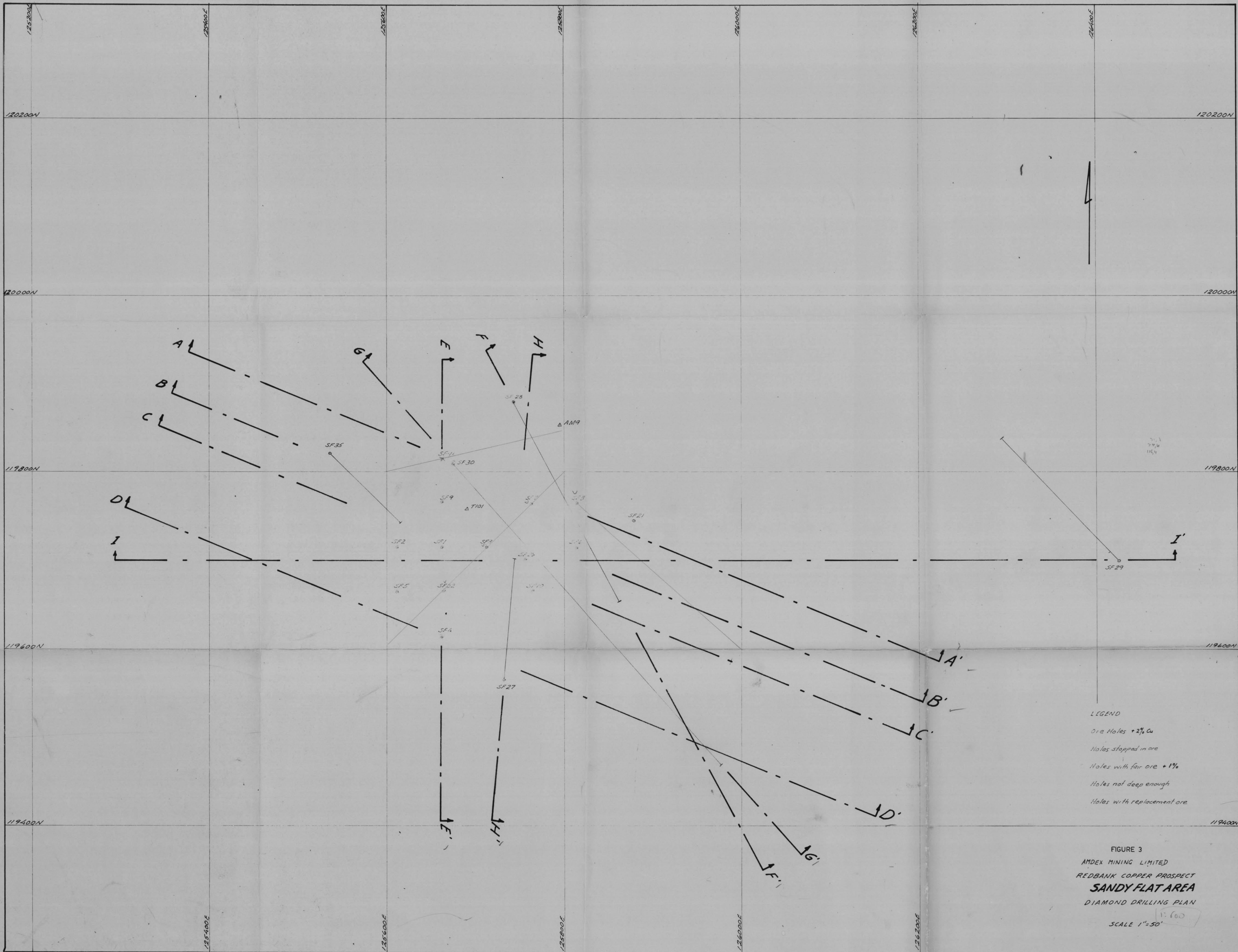


E.B. Bell
Consulting Geologist

October 2, 1973

FIGURE 1





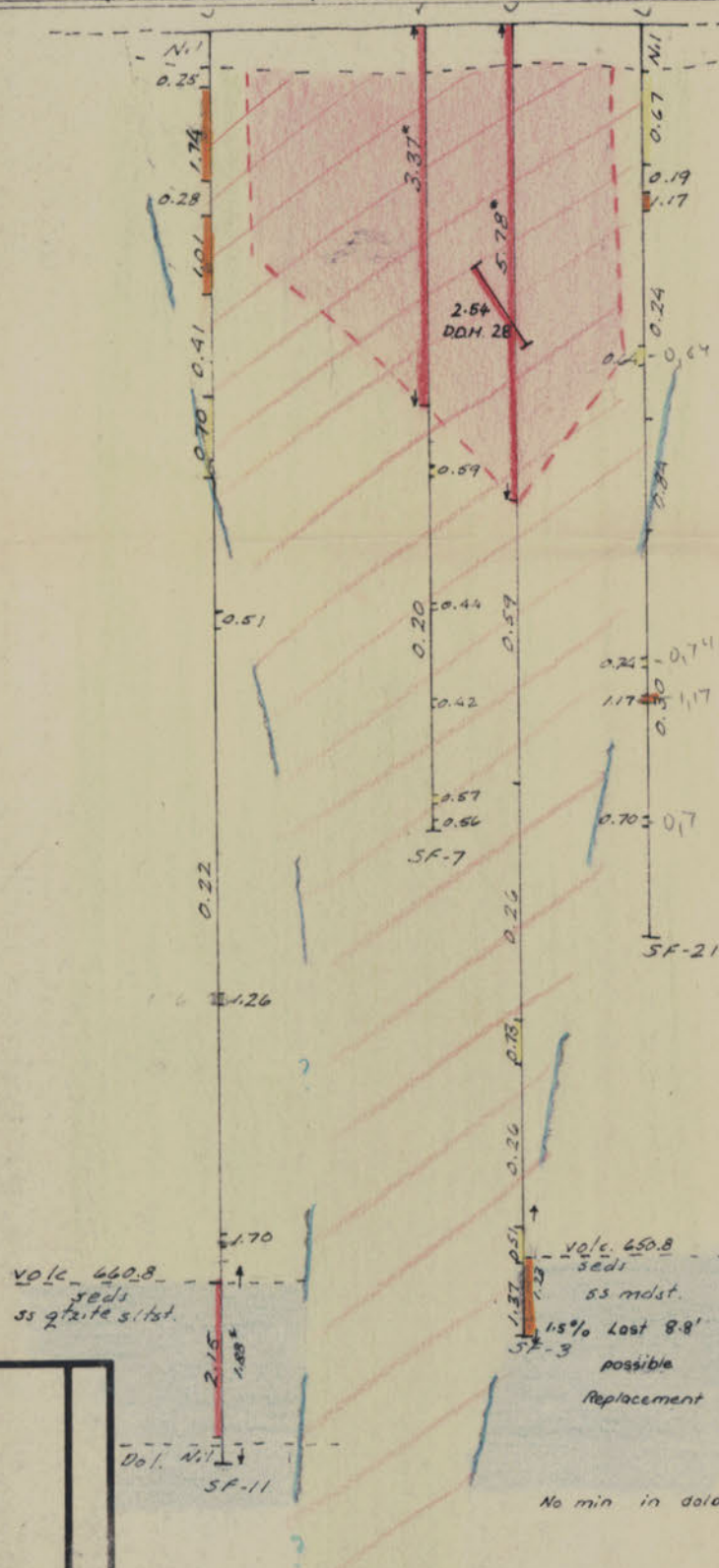
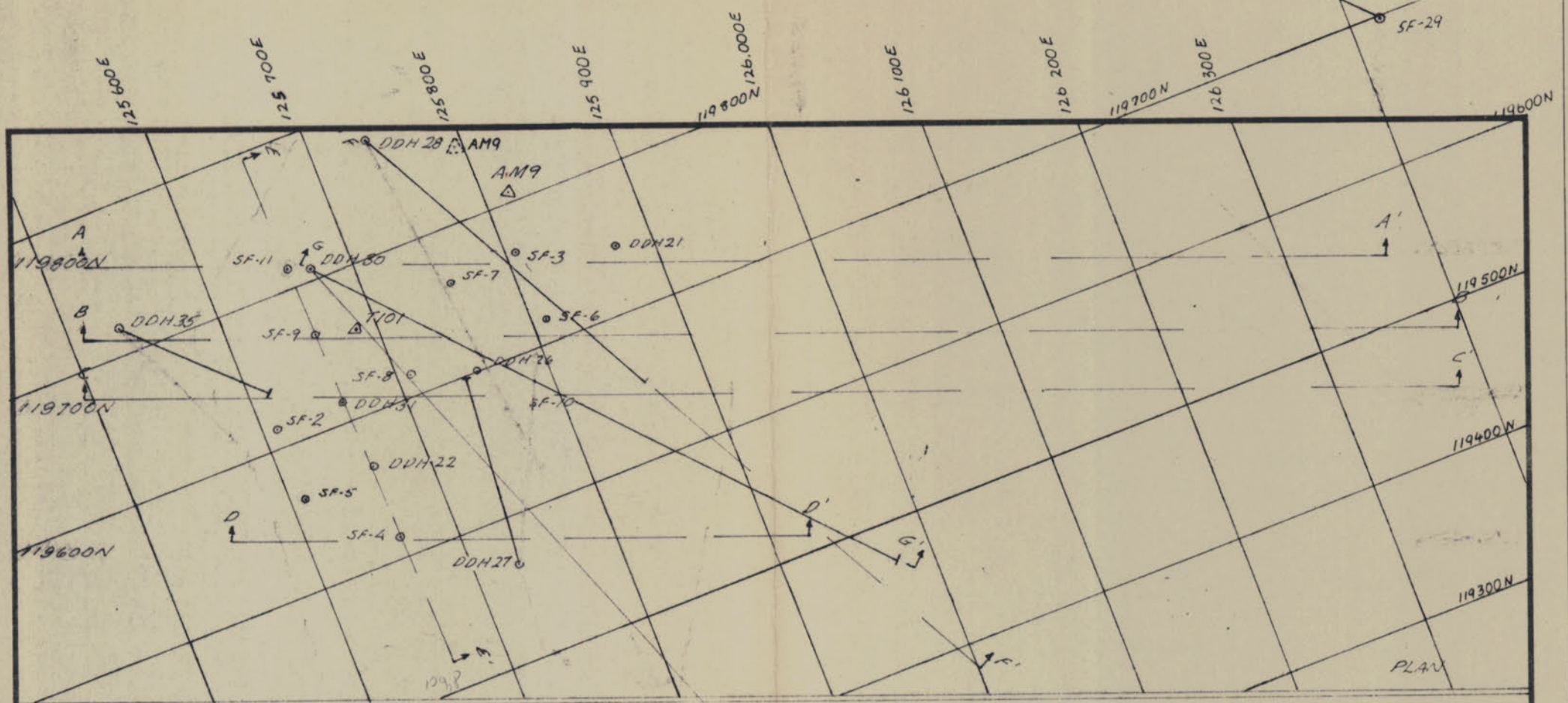


FIGURE 4

* Computer Ave.

AMDEX MINING LIMITED
SANDY FLAT
SECTION A-A'
REDBANK AREA

SCALE: 1"=100'

SURVEY:	SCALE:	PLAN NO.
DRAWN:	DATE:	



FIGURE 5
AMDEX MINING LTD.
REDBANK, N.T.
SANDY FLAT AREA
SECTION B-B'

SCALE 1"=100'

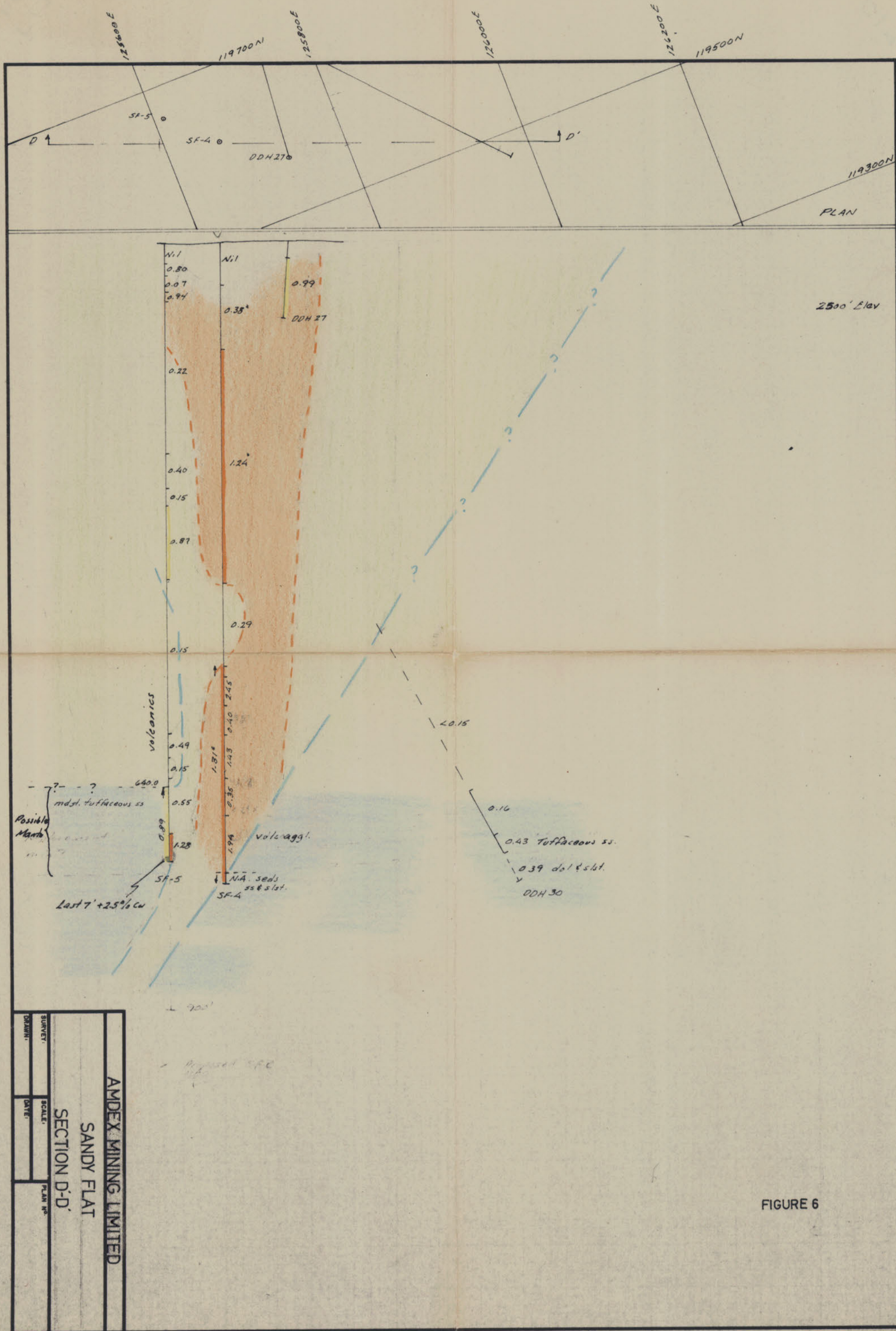
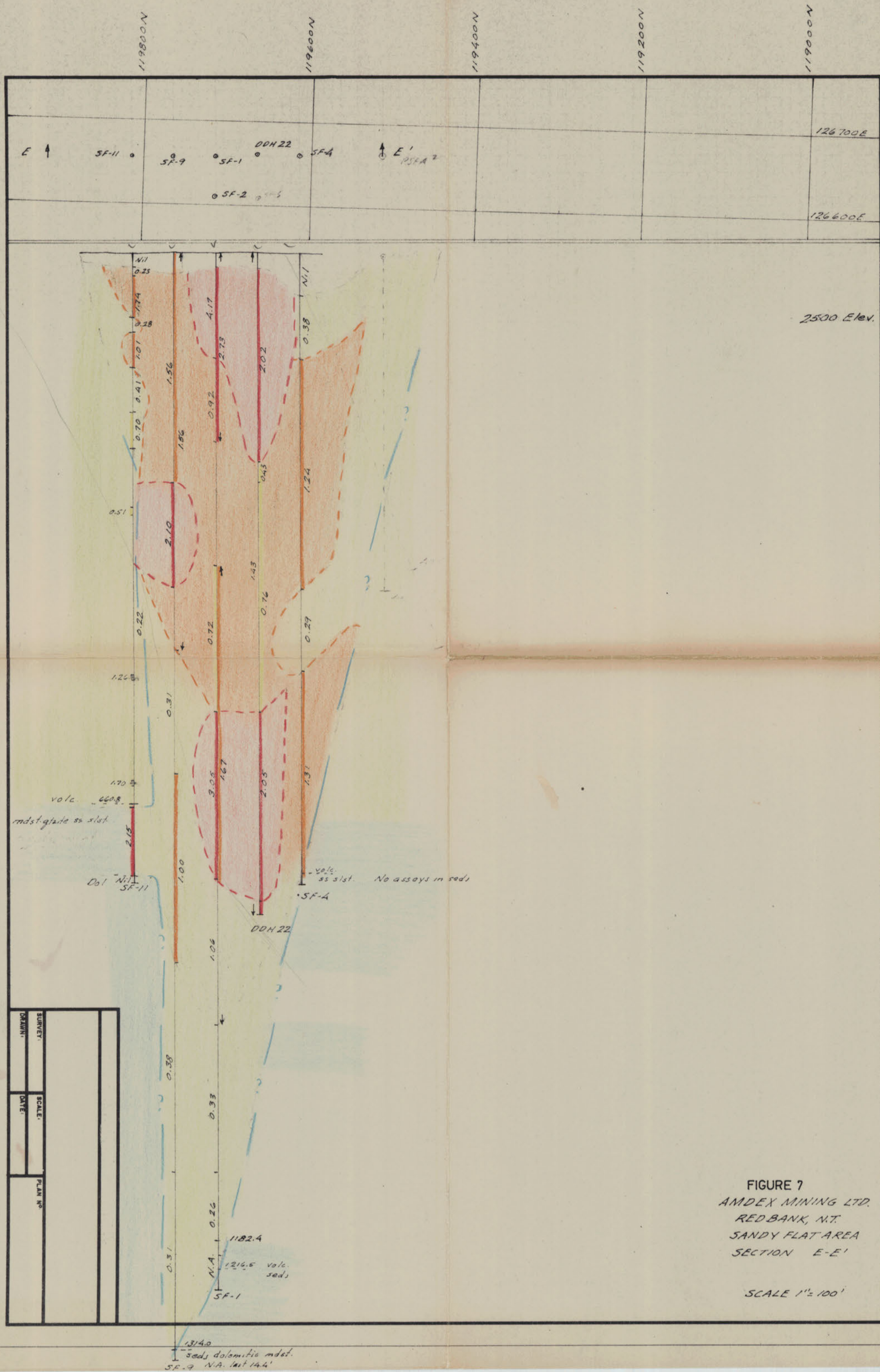


FIGURE 6





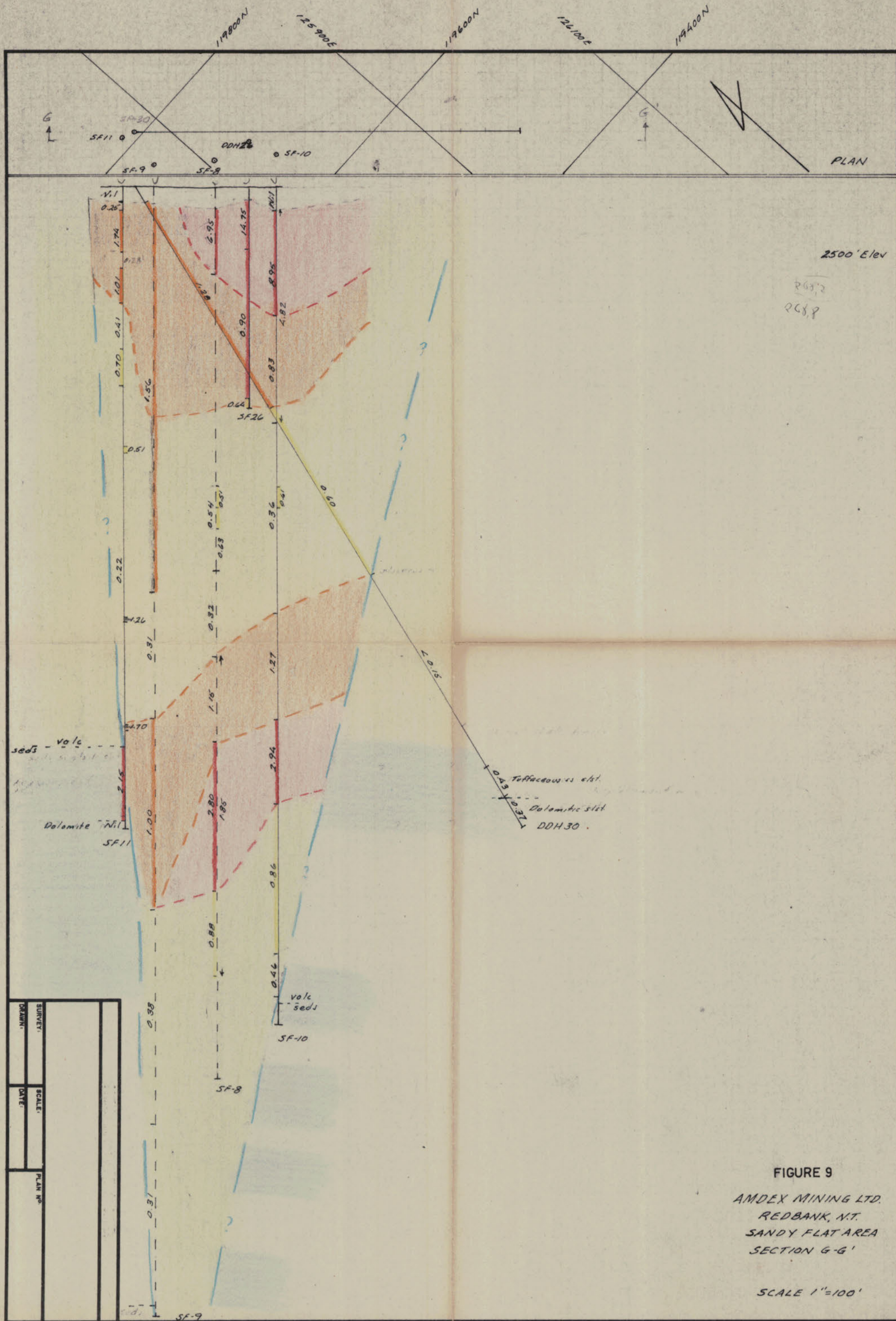
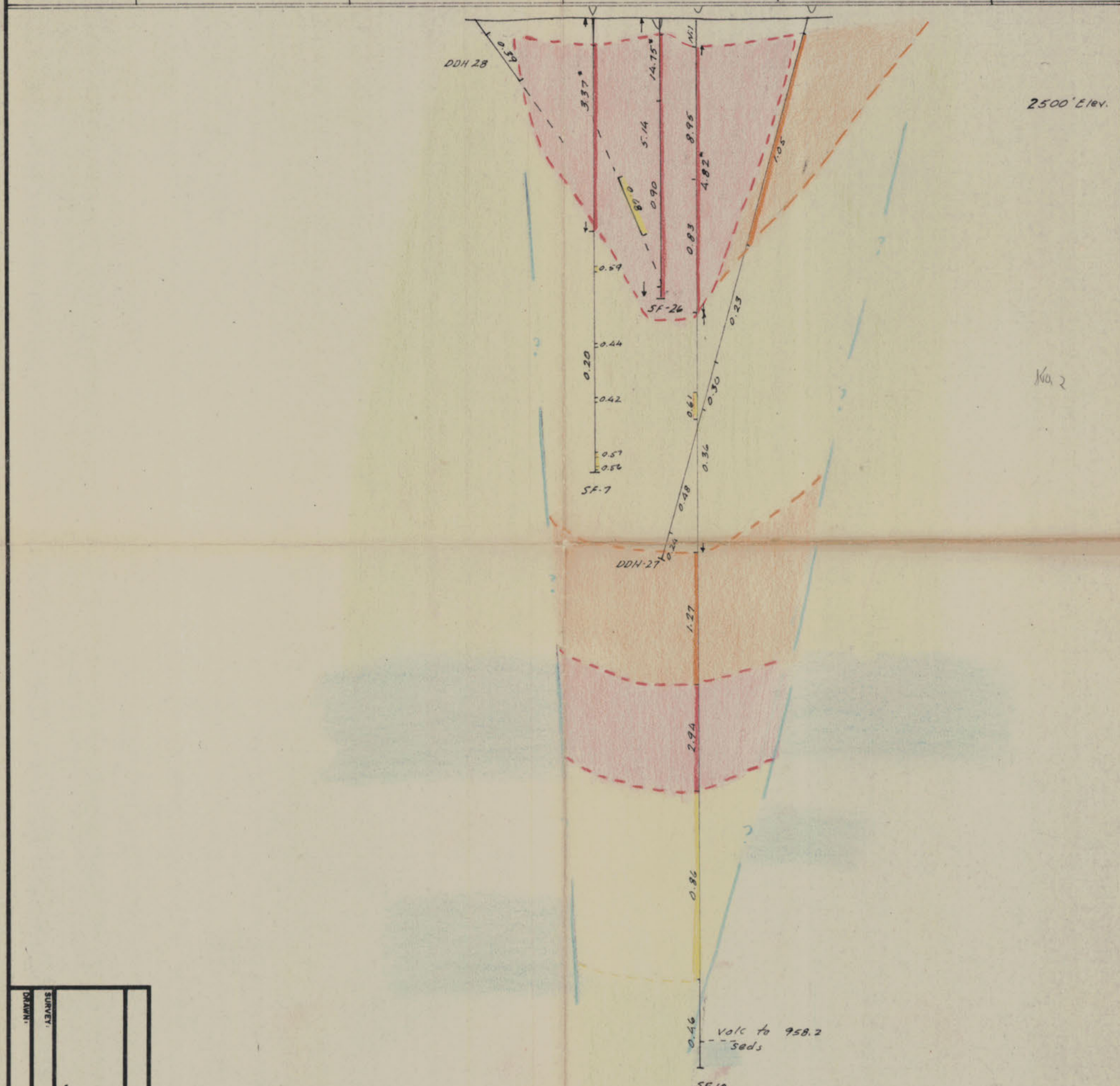
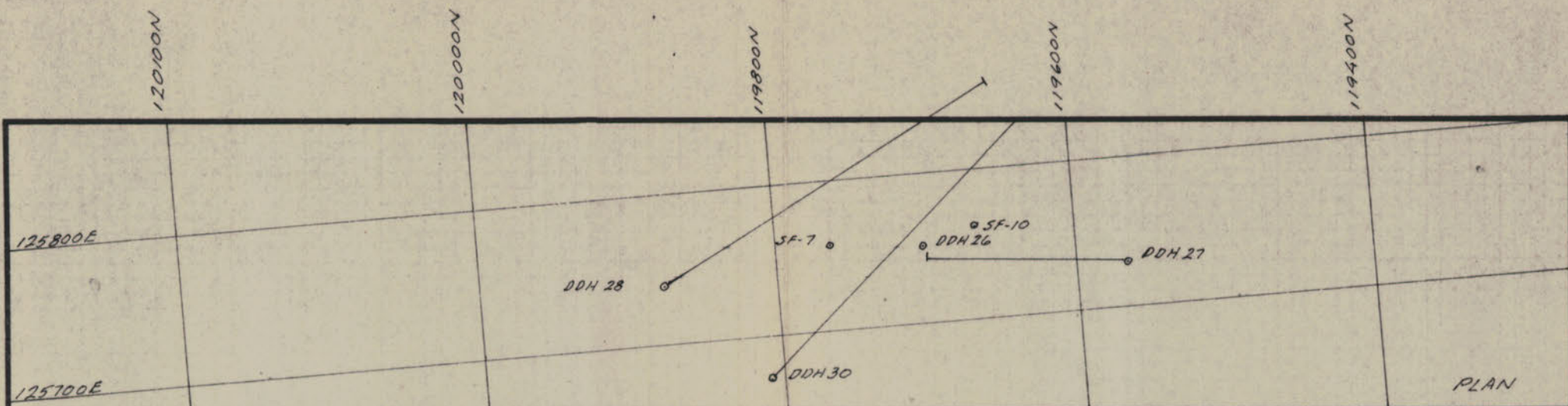


FIGURE 9
AMDEX MINING LTD.
REDBANK, N.T.
SANDY FLAT AREA
SECTION G-G'
SCALE 1"=100'



SURVEY:	SCALE:	PLAN N°:
DRAWN:	DATE:	

FIGURE 10
 AMDEX MINING LTD.
 REDBANK, N.T.
 SANDY FLAT AREA
 SECTION H-H'
 SCALE 1"=100'

SCALE 1" = 100'

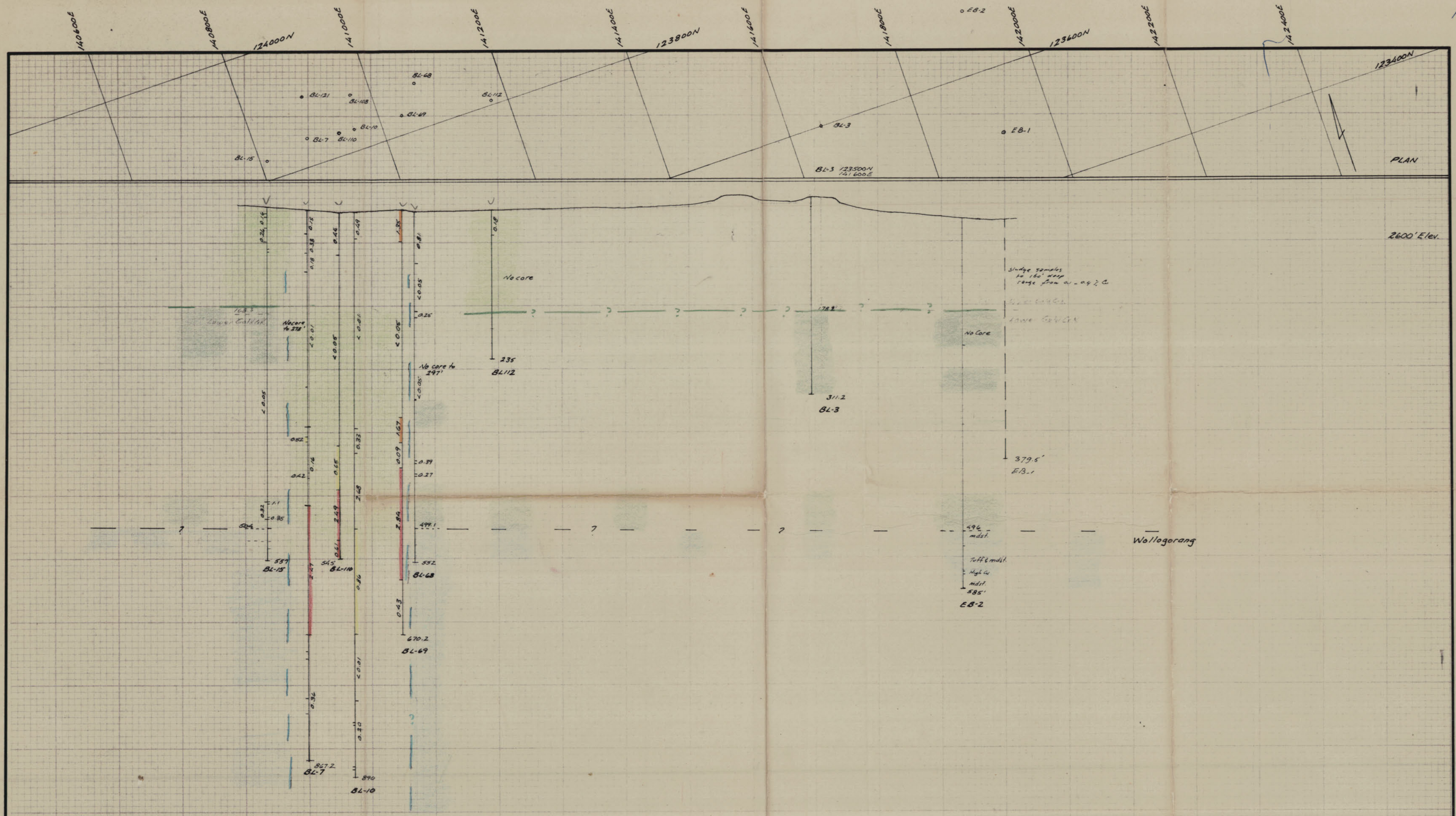


FIGURE 16
AMDEX MINING LTD.
REDBANK, N.T.
SECTION LOOKING N19E
BLUFF TO EAST BLUFF
SECTION III
SCALE 1"=100'

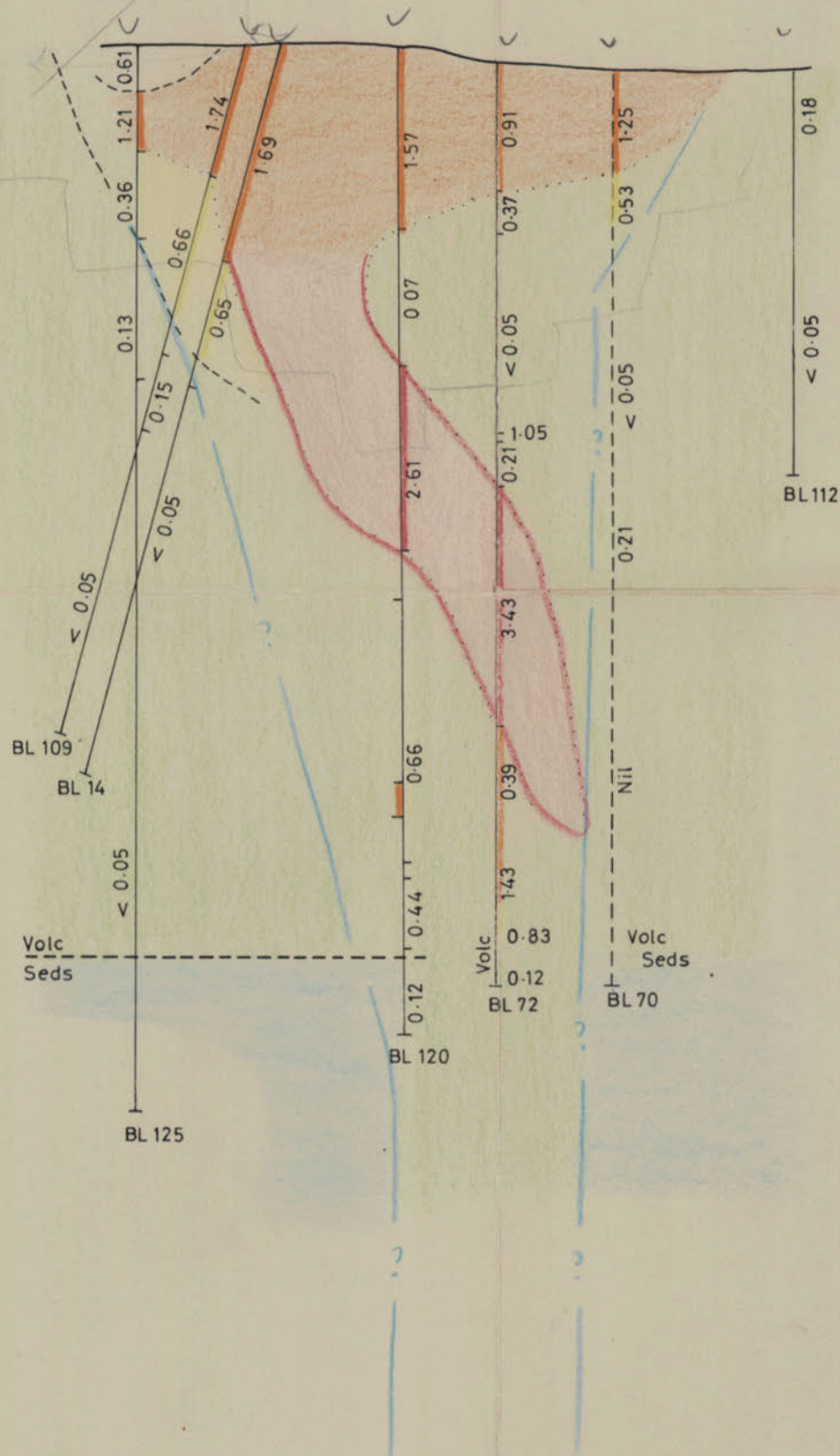
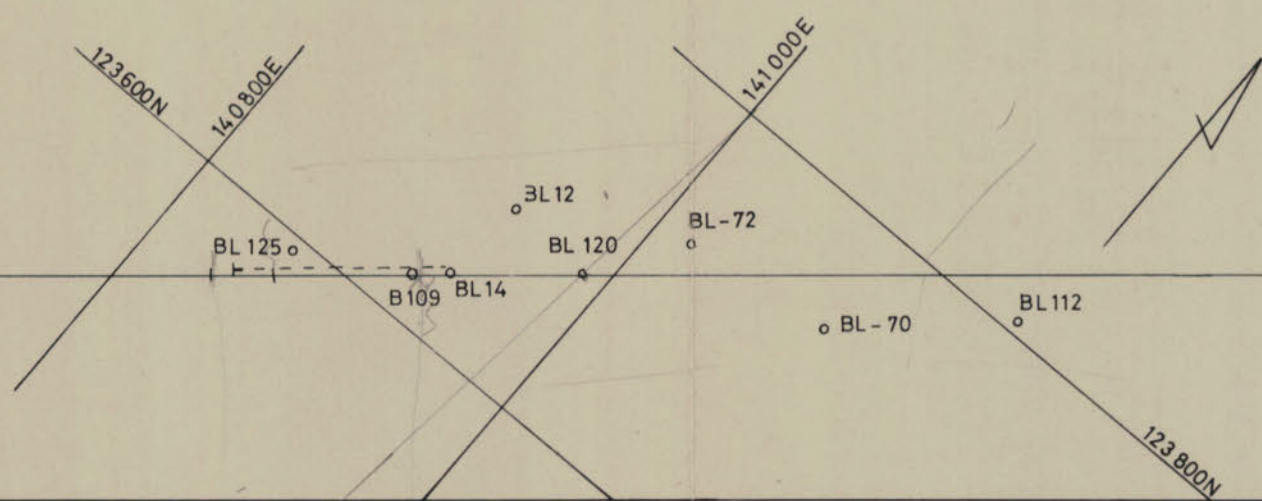


FIGURE 17
 AMDEX MINING LTD
 REDBANK, N.T.
 BLUFF AREA
 SECTION IV
 SCALE 1"=100'

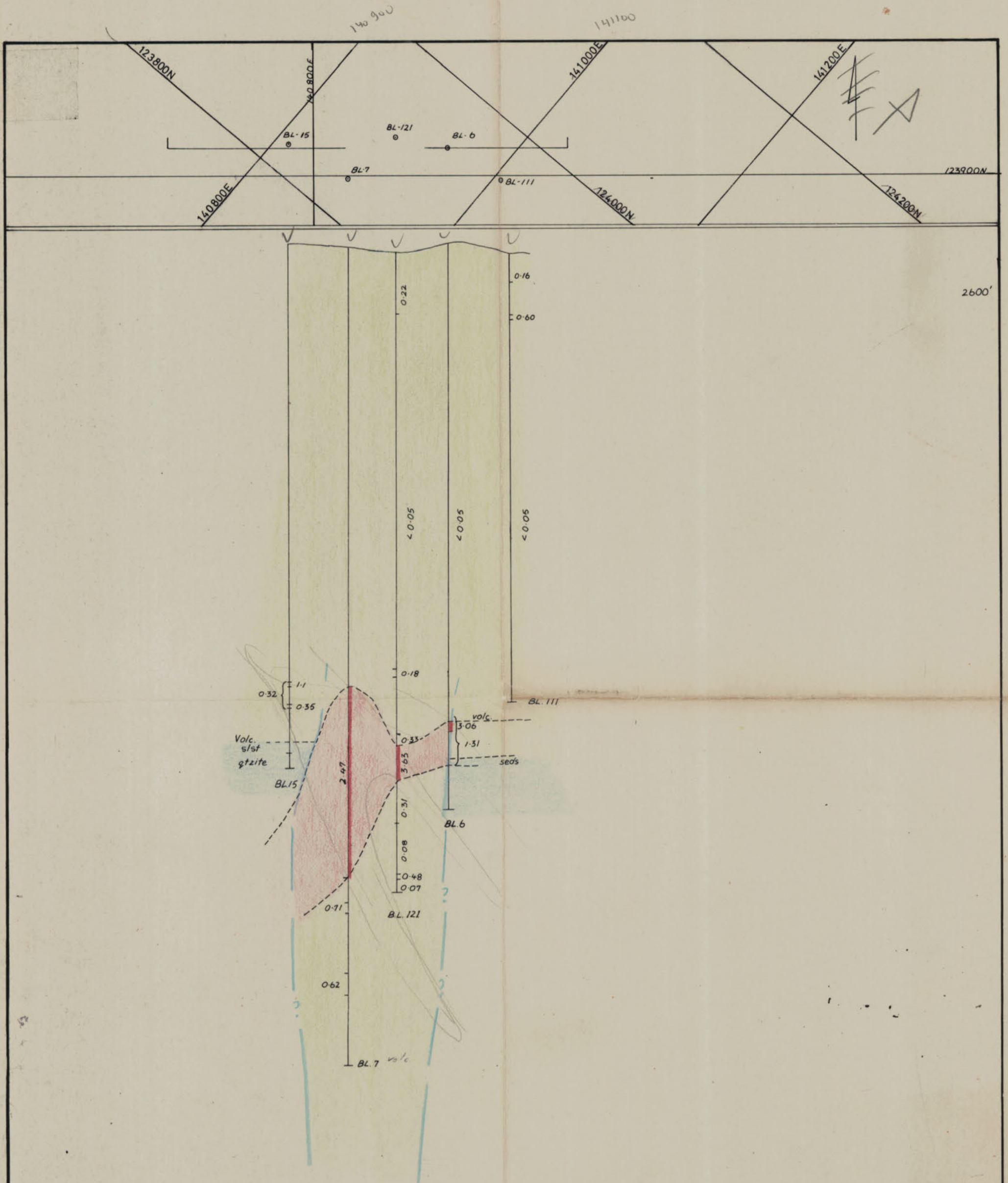


FIGURE 19

AMDEX MINING LIMITED

REDBANK PROSPECT, N.T.
BLUFF AREA

SECTION VI

SCALE: 1"=100'

ANNUAL REPORT
22. 10. 1972 TO 22.10.1973 /
EXPLORATION LICENCE NO. 689
REDBANK, NORTHERN TERRITORY

APPENDIX IV

OPEN FILE

VOLUME IV of IV

TRIAKO MINES N.L.

JANUARY, 1974

CR1974 0017

INTERPRETATION REPORT
AIRBORNE ELECTROMAGNETIC SURVEY
BARRINGER INPUT SYSTEM

of the
Redbank Area
Northern Territory
Australia
for Andex Mining Limited.

by
Geoterrex Ltd.

83-156

OTTAWA, CANADA,
OCTOBER, 1973.

A.R. RATTEW, P. ENG.,
R.K. DOWSE, B.A.,
GEOPHYSICISTS.

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V. INTERPRETATION OF SELECTED CONDUCTORS	7
VI. TABLE 1 - Summary of Selected Conductors	11
VII. CONCLUSIONS AND RECOMMENDATIONS	12

ACCOMPANYING THIS REPORT

Appendix A - Input Equipment and Procedures ✓

Appendix B - Input Interpretation ✓

✓ EM Plan Map - 1 sheet - 1:12,000 (approx.) ✓

Isomagnetic Contour Map - 1 sheet - 1:12,000 (approx.) ✓

APPENDIX IV

PART A

I. INTRODUCTION

On July 18, 1973, Geoterrex Pty. Limited conducted an airborne electromagnetic INPUT survey for Amdex Mining Limited. in the Redbank Area in the Northern Territory. The survey, flown out of Tennant Creek, consisted of 230.2 line miles with line direction of N30°E and spacing of 1/8 mile.

The aircraft used was a Super Canso under registration VH-EXG, and it carried the following geophysical equipment: Barringer Mark V Input system, Barringer Mark VI Input system, Barringer Am101A nuclear precession magnetometer, Honeywell Visicorder, APN-1 Radio Altimeter, a 35mm. continuous strip tracking film and a 50 c/s monitor.

Navigation was by visual means utilizing photo-mosaics and mean terrain clearance of 400 feet was maintained.

A Geoterrex data compiler recovered the flight path on photo-mosaics while a field geophysicist selected the INPUT anomalies. These were then plotted on overlays to the mosaics, providing the basis for the preliminary interpretation in the field. Complete compilation and analysis of the data was carried out in Ottawa, Canada.

II. PERSONNEL

The following Geoterrex personnel participated in the field phase of the survey.

Pilot	- G. Gaillardetz
Co-Pilot	- A. Johnston
Aircraft Engineer	- B. Mitchell
Electronics Technician	- L. Williams
Data Compiler	- P. Smith
Geophysicist	- J.J. Debeaupuis

Drafting of the INPUT data was carried on in Ottawa under the direction of M. Dostaler, drafting supervisor.

The final interpretation was completed by R.K. Dowse, under the direction of A.R. Rattew and J. Hansen.

III. DATA PRESENTATION

The INPUT data is presented as an overlay to a photo-mosaic at an approximate scale of 1:12,000.

A normal INPUT anomaly is portrayed on the EM plan map by symbolism and figures which provide the following:

- a) anomaly peak position
- b) anomaly half-peak width
- c) number of INPUT channels affected
- d) amplitude of the first and fourth channels
- e) terrain clearance of the aircraft
- f) amplitude of any apparently associated magnetic anomaly
- g) any associated response on the 50 c/s monitor.

Zones definitely attributed to surficial sources are outlined on the plan map but not discussed individually.

All conductive zones which are considered to have any reasonable chance of being due to a bedrock source are numbered for identification purposes and discussed in the report. This includes any conductors considered to be questionable surficials.

Isomagnetic contours were also prepared, again at a scale of 1:12,000. Values shown represent relative intensities and intervals of 10 gammas are shown wherever gradient permits.

IV. INTERPRETATION GENERAL

The primary purpose of the airborne survey is the direct exploration for conductive massive sulphides. One of the first objectives of the interpretation is thus the classification of each zone into one of three categories, according to its most likely origin. These categories are cultural, surficial and bedrock. The next objective is to give each zone a rating or priority for followup, according to its potential as a sulphide prospect, if it should prove to be a bedrock conductor.

A. Cultural Anomalies

There is no definite evidence of man-made conductors within the survey grid and none of the selected conductive zones have been interpreted as possible culture. Certainly the typical fence type or powerline type anomalies were not observed. For reference purposes, however, the characteristics of this type of INPUT response are described in detail, as is the procedure used in checking the tracking film. (See Appendix B).

B. Surficial Conductors

This term is used for geological conductors in the overburden either residual soils or the weathered layer of the bedrock. Most surficial conductors are caused by clay minerals, but in some

environments salty deposits give rise to highly conductive surficial features. Other possible electrolytic conductors include residual soils, swamps, brackish groundwater and lake or river bottom deposits.

In the Redbank area many of the INPUT anomalies identified could be explained by surficial origin. Conductivity is generally very poor, amplitudes are very low, shapes are broad to suggest horizontal lying sheets and there is often a shift in peak position depending on line direction, all characteristics associated with surficial origin. With such weaker anomalies, unfortunately, shape can often be insufficiently clear for a reliable interpretation. In a deeper type of environment in particular, a low amplitude, similarly shaped response might also be associated with a flat lying, or deeply buried bedrock source. For this reason, some of the Redbank zones, especially those with some magnetic support and/or good strike length, should be verified on the ground.

Any outlined conductive zone not assigned an identification number can be taken as an interpreted surficial feature. Similarly, any isolated anomaly not assigned a zone number is interpreted as probable surficial.

C. Bedrock Conductors

Reference should be made to Appendix B which outlines in detail the criteria considered as favorable indications of a bedrock

source. Briefly stated, these include intermediate to high conductivity, good anomaly shape and decay, no serious displacement of anomaly peak position with line direction, possibly associated magnetic response with similar strike, and often small to intermediate amplitude.

No definite bedrock sources were identified in the Redbank area but four zones warrant at least some further consideration. These selected zones have been assigned a priority for followup, according to the criteria listed below.

Priorities of Targets

Priority 1 selections are conductors which have a high probability of being massive sulphides.

Priority 2 selections indicate either massive sulphites, graphite or certain weathering products which have a possibility of being derived from sulphides.

Priority 3 selections are most probably caused by surficial material, but there is a minor chance of sulphides being present.

Priority 4 selections are very marginal, questionable type sulphide prospects.

V. INTERPRETATION OF SELECTED CONDUCTORSA. Redbank AreaZone R-1Priority 3

Line 116S Fid. 259.56

Line 117N Fid. 245.43

This zone occurs on the north side of a long, easterly striking conductive trend which extends from line 108 through to line 121. The whole trend relates quite consistently to a similar striking magnetic "low", and for the most part is very poorly conductive and unfavorably broad.

Surficial material is most probably the prevailing source here, but there is at least some faint doubt concerning the two selected anomalies on lines 116 and 117. They are slightly sharper than the usual surficial and they also persist to the third channel just fractionally better than those on adjacent lines. The fact that the two responses show well aligned peaks and no dependence on line direction also implies a possible narrow, and localized occurrence. There is a weak 20-40 gamma magnetic association here as well, although the isomagnetic contours seem to suggest a longer axis rather than a short strike one.

Note also that the anomaly on line 122 at fid. 205.15 is somewhat similar geophysically, also showing some sharpness in character. It too, however, reflects only very low apparent conductivity.

Zone R-2Priority 3

Line 107N Fid. 344.30

Line 108N Fid. 325.85

This zone is one of several zones identified in the central part of the grid. All reflect a poorly developed or low conductivity source but each attracts minor attention because of favorable short extent and apparent isolation within a resistive environment. We suggest investigation of at least one of these conductors, on the understanding that surficial material might well be the origin of the conductivity.

Zone R-2 is given slight preference because of its possible association to a 30 gamma magnetic feature. Like all these short conductors, however, the INPUT responses are very weak, persisting barely to the third channel. They also reflect a narrow source rather than an unfavorably broad one.

Zone R-3Priority 2

Line 106S Fid. 338.75

through

Line 110S Fid. 307.10

This zone, although rather long looking in extent, is probably the best target identified in the Redbank grid. The INPUT responses are stronger and better developed than those seen to the south and conductivity improves to intermediate or even high. The magnetic association is also more consistent, although still of a very weak nature (20-30 χ). Note also that the conductor appears to cut across the magnetic axes to some degree, as if reflecting possible structural control in this locale.

Investigation could initially begin at line 108 and secondly at line 106.

Zone R-4Priority 2

Line 114S Fid. 270.28

through

Line 117N Fid. 252.26

Most of the anomalies in this zone are weak, broad and offset from line to line as if mapping a wide zone of surficial material. The zone has been slightly upgraded, however, because of the better character seen on line 117. This anomaly is sharper and

well defined with a rather intriguing offset character. It suggests a horizontal or shallow dipping source lying on the flank of an 80 gamma magnetic high.

The indicated conductivity is low and not significantly different from the remainder of the zone.

V. TABLE 1 - Summary of Selected Conductors

<u>Priority 1</u>	<u>Priority 2</u>	<u>Priority 3</u>	<u>Priority 4</u>
Nil	R-3	R-1	Nil
	R-4	R-2	

VI. CONCLUSIONS AND RECOMMENDATIONS

1. Table 1 summarizes the interpretation of the conductors in the survey area which have any reasonable chance of originating from a bedrock source.
2. The Redbank area presents a very resistive environment with overburden conductivity very poorly conductive and generally confined to the perimeters of the grid. The magnetic data shows a weakly magnetic unit predominating (20-40 γ) with a few magnetic axes in the north reaching 100 gammas. The regional strike is more or less NW-SE.
3. No top priority, massive sulphide prospects were conclusively identified, but zone R-3 and possibly zone R-4 as well are recommended for followup. These are rated as Priority 2 targets.
4. Zones R-1 and R-2 are borderline Priority 3 selections, but if geology is known to be favorable, these might also be worth some consideration.

Respectfully submitted,

R.K. Dowse

R.K. Dowse, B.A.

APPENDIX A

INPUT EQUIPMENT AND PROCEDURES

I. DARRINGER INPUT SYSTEM

a) General:

The INPUT (INDuced PULse Transient) method is based upon the study of the decay of secondary electromagnetic fields created in the ground by short pulses generated from an aircraft. The time-varying characteristics of the decay curve are analyzed and interpreted in terms of information concerning the conductivity characteristics of the terrain.

The principle of separation in time between the production of the primary field and the detection of the measured secondary signal gives rise to an excellent signal-to-noise ratio and an increased depth of penetration compared to conventional continuous wave electromagnetic systems. It also makes the INPUT system relatively independent of air turbulence.

At a normal survey altitude of 400 feet (120 meters) above terrain, the typical effective depth penetration is estimated at about 400 feet (120 meters) below surface, depending on the conductivity contrast between the conductive body and surrounding rocks, the size and attitude of the conductor and the presence or lack of conductive overburden. In optimum conditions a penetration of 600 feet (185 meters) subsurface can be achieved.

One of the major advantages of the INPUT method lies in good differentiation between flat-flying surface conductors and bedrock conductors so that the latter can be detected even under a relatively thick overburden such as glacial or pedological formations (laterite, weathered zone, etc.).

However, the application of the airborne INPUT electromagnetic method is limited to the solution of problems that are characterized by a reasonable resistivity contrast. The method is not considered to be applicable to the direct search for disseminated mineralization, except where this resistivity contrast exists.

b) Equipment:

The INPUT system has been developed by Barringer Research Limited of Toronto, Canada.

The transmitted primary field is discontinuous in nature (Fig. 1A) with each pulse lasting one millisecond; the pulse repetition rate is 288 per second. The electromagnetic pulses are created by means of powerful electrical pulses fed into a 3-turn shielded transmitting loop surrounding the survey aircraft and fixed to the nose and tail of the fuselage and to the wing tips.

The secondary field reception is made by means of a receiving coil wound on a ferrite rod and mounted in a "bird" towed behind the aeroplane on a 500-foot (150 meter) co-axial cable.

INPUT SIGNAL

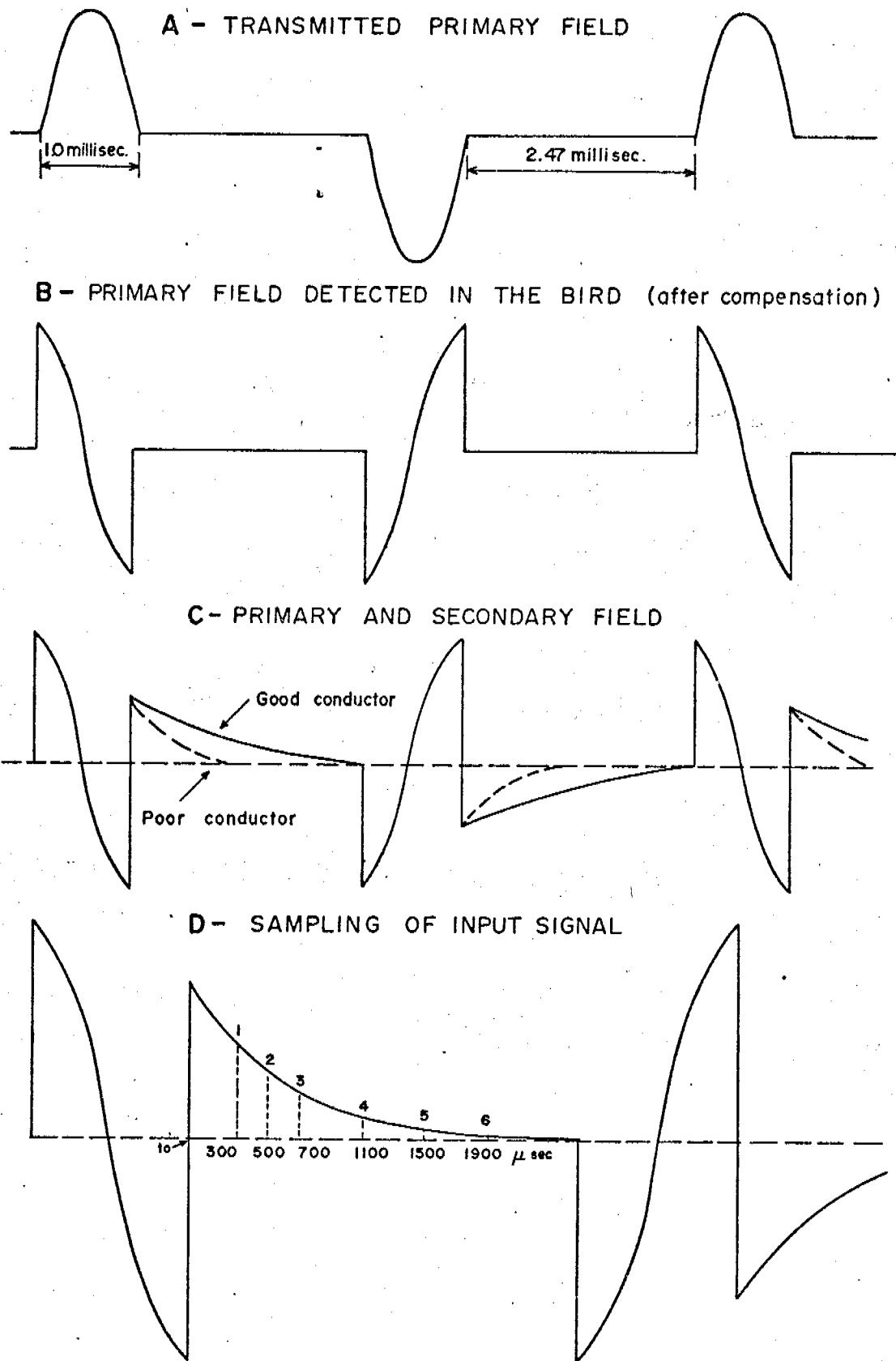


FIGURE 1

The axis of the pickup coil is horizontal and parallel to the flight direction. Gaps of two and a half milliseconds between successive primary pulses (Fig. 1B) are used for detecting the INPUT voltage, which is a transient voltage (Fig. 1C) corresponding in time to the decay of the eddy currents in the ground.

The analysis of the signal is made in the INPUT receiver by sampling the decay curve at several points or gates, the centre and width of which have a fixed relationship with respect to time zero (t_0) corresponding to the termination of the pulses. The INPUT system has six sampling gates, the centres of which are commonly at a mean delay of 300, 500, 700, 1100, 1500 and 1900 microseconds after time zero (Fig. 1D).

The signals received at each sampling gate are processed in a multi-channel receiver to give six analog voltages recorded as six continuous analog traces (Fig. 2) on a Honeywell Visicorder direct-reading optical galvanometer recorder. Each trace represents the coherent integration of the transient sample, the time constant of integration being about three seconds on the Mark V unit and about 0.6 seconds on the Mark VI equipment. This integration delay plus the separation between the receiving bird and tracking camera installed in the aircraft introduces a delay which has to be taken into consideration and corrected prior to correlating the electromagnetic data with the other simultaneously recorded data.

TYPICAL INPUT RECORDING

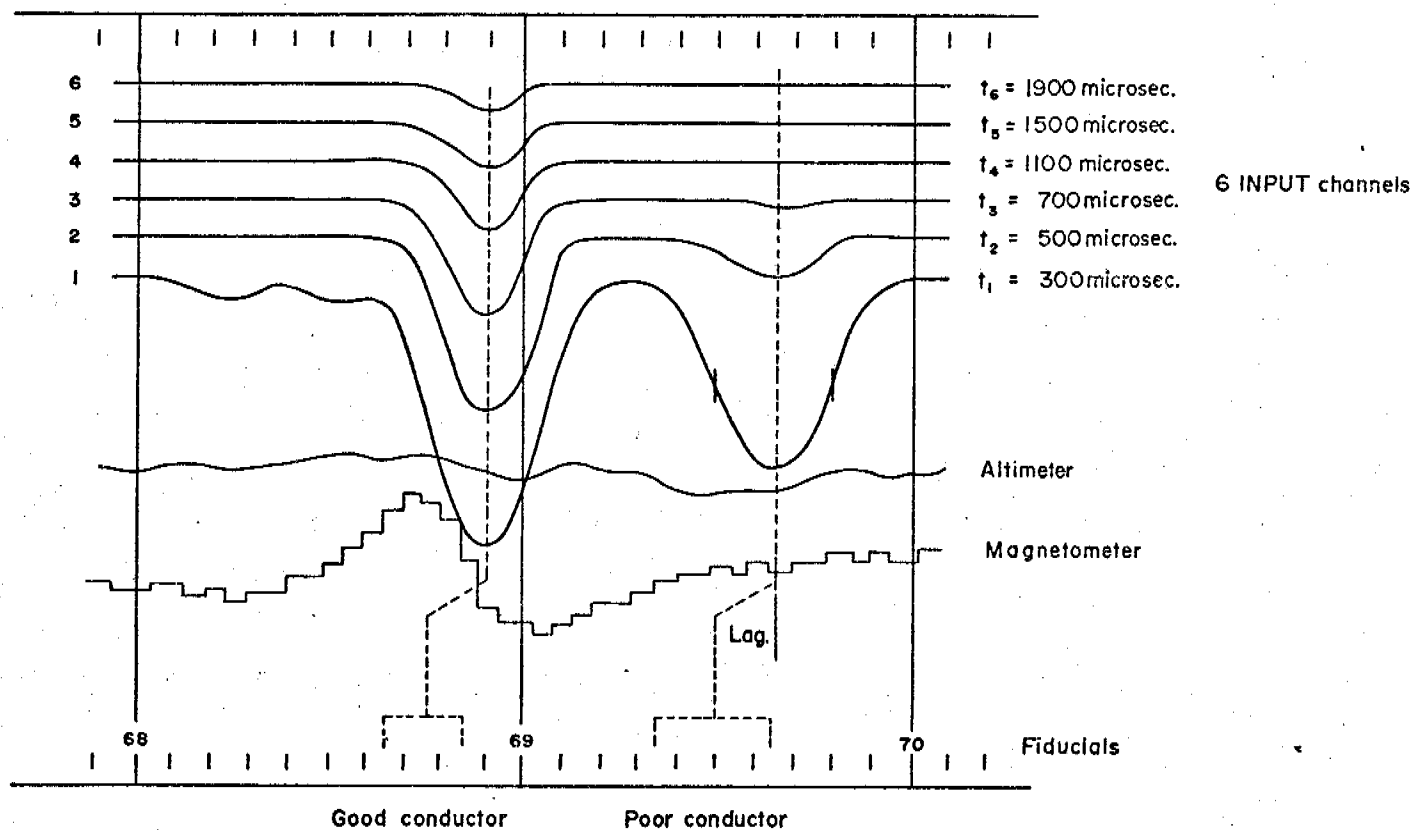


FIGURE 2

Other recorded data are:

- fiducial marks
- altimeter trace
- earth's total magnetic field
- Hz monitor
- radiometric levels (optional)

An eddy current is induced in the airframe by the primary field. To compensate for this effect a special device is used which feeds into each channel of the INPUT receiver a signal equal in amplitude and waveform but opposite in polarity to the signal induced by the airframe eddy current. The compensation signal is derived from the voltage induced in the receiving coil by the primary field. It is constantly proportional to the inverse cube of the distance between the bird and the aircraft. Thus, swinging of the bird and changes of coupling are automatically corrected. The compensation adjustment is a simple procedure carried out during flight at a terrain clearance of 2,000 feet (600 meters) to eliminate the interference of ground conductors.

II. MAGNETOMETER

The magnetometer is a Geometrics G-803 nuclear precession unit (with high performance option) especially adapted to operate in conjunction with the INPUT equipment. Readings are taken every second with a sensitivity of plus or minus 2 gammas and recorded at a full scale of 5 inches for 200 gammas. The coarse trace is recorded at a full scale of 5 inches for 20,000 gammas. The sensing head is mounted at the end of a 3-meter stinger, on the tail of the PSY aircraft. The magnetometer record is also shown in Figure 2.

III. OTHER EQUIPMENT

The tracking camera is a 35 mm Aeropath AS-5 continuous strip camera equipped with a wide-angle lens. The 35 mm film is synchronized with the geophysical record by means of fiducial marks printed every 20 seconds, the counter of the intervalometer being driven by the clock of the magnetometer.

An APN-1 Altimeter is used, and its output is recorded on the chart.

In most cases a Hz monitor is employed to assist in the detection of power lines.

Optional equipment can include a Doppler navigation system, frame camera (in addition to the strip camera), spectrometer and a digital recorder.

IV. PROCEDURES

a) Field Operations:

The flight line spacing is normally in the range of $1/8$ mile to $1/4$ mile. During survey flights, the altitude of the aircraft is maintained at approximately 400 feet (120 meters) above the ground with the bird flying about 200 feet (60 meters) below the aircraft.

The heading of the aircraft is such that two adjacent lines are normally flown in opposite directions. Visual navigation is based on airphoto mosaics or in some cases on topographic maps of suitable scale.

Just after take-off, the calibration of the altimeter is checked by flying straight and level over the runway at a barometric altitude AGL of 400 feet (120 meters). The compensation adjustment is checked during ferry from the base to the survey area.

b) Compilation:

At the end of each flight, all records and films are developed, edited and all synchronized fiducial marks are checked. Then, the actual flight path recovery is made by picking visible marks common to both 35 mm film and photo mosaics. Identified points with their fiducial number are plotted on the mosaic. Then, the electromagnetic anomalies are transferred from the records onto the mosaic overlay by interpolation according to their own fiducial number.

The position of the INPUT anomalies must be corrected to take into account the separation between the bird and the aircraft as well as the delay introduced in the integration circuitry. This offset of lag, is plotted towards the smaller fiducial numbers (to the left on the record).

The INPUT anomalies are represented on a map by means of symbols that condense the most significant characteristics: the location of the centre and half-peak width of the electromagnetic anomaly; the number of INPUT channels affected by a

noticeable deflection; the peak amplitudes of the first and fourth channels. Shown also are the altitudes at which the anomalies were recorded, the amplitude of any magnetic features which coincide with INPUT anomalies and any associated response on the Hz monitor.

The only subjective elements introduced by this processing are in the decision as to whether a deflection corresponds to a genuine anomaly or to a noise source (electrostatic atmospheric discharge, compensation noise, etc.) and in the correlation of the anomalies from line to line to delineate a conductive zone.

APPENDIX B

INPUT INTERPRETATION

I. INTRODUCTION

Although the approach to interpretation varies from one survey to another depending upon local conditions, the following generalizations may provide the reader with some helpful background information.

The main purpose of the interpretation is to determine the probable origin of the conductors detected during the survey and to suggest recommendations for a further exploration programme by taking into account a limited amount of available geophysical data. This is possible through an objective analysis of all characteristics of the different types of conductors and correlating magnetics, if any. Then, the maps of electromagnetic results are compared to the available geological maps. A certitude is seldom reached, but a high probability is obtained in the appreciation of the conductive causes in most cases. One of the most important problems is usually the differentiation between non-economic surface conductors and bedrock conductors.

II. TYPES OF CONDUCTORS

a) Bedrock Conductors:

The different types of bedrock conductors that are normally encountered are the following:

1. Graphites (including a large variety of carbonaceous rocks) occur in the sedimentary formations of the Precambrian as well as in volcanic tuffs, often concentrated in shear zones. They correspond generally to long, multiple conductors lying in parallel bands. They are not magnetic unless associated with pyrrhotite or magnetite. Their conductivity is variable but generally high.

2. Massive sulphides. Syngenetic sulphides often correspond to long multiple conductors and their conductivity which varies considerably may be very high, as for graphites. Pyrrhotite, often associated with other sulphides may be the cause of coincident magnetic anomalies. Generally, sulphides are not as frequently encountered as is graphite.

Isolated orebodies of massive sulphides give rise to short conductors of high conductivity. They present quite often a direct magnetic anomaly and are easily recognized. However, some sulphide orebodies are not magnetic, some are not very conductive (discontinuous mineralization), and they can be located among formational conductors so that one must not be too dogmatic in the selection of the prospects.

3. Magnetite and some serpentized ultra-basic rocks are conductive and very magnetic.

4. Manganese oxides may give a weak electromagnetic response.

b) Surface Conductors:

1. Clayey alluvium or residual soils, some swamps and brackish groundwater are usually poorly conductive to medium conductive.

2. In unglaciated areas lateritic formations, residual soils and the weathered layer of the bedrock often cause surface anomalous zones, the conductivity of which is generally low to medium but can occasionally be high. Their presence is often related to the lithology of the underlying bedrock.

c) Man-made Conductors (Cultural):

1. Power Lines. These frequently, but not always produce a conductive type response on the INPUT record. In the case of direct radiation of their field, the anomaly shows phase changes with the different channels which are recognized easily. In the case of a grounded wire, or steel pylon, the anomaly may look very much like a bedrock conductor.

2. Grounded fences or pipelines. These will invariably produce responses much like a bedrock conductor. Whenever they cannot be identified positively a ground check is recommended.

3. General Culture. Metal barns or houses, tailings ponds, dumps, etc., may produce INPUT anomalies. However, their instances are rare and can generally be verified by identification on the path recovery film.

III. ANALYSIS OF THE CONDUCTORS

The apparent conductivity alone is not generally a decisive criterion in the diagnosis, and other factors are also very important:

- the pattern of conductors
- the shape and size
- the associated geophysical parameter
(aeromagnetics)
- the position with respect to the direction
of structures
- the geological environment
- the local variations of characteristics
within conductive zones.

The first objective of the interpretation, then, is to classify each zone under one of three categories, according to its most likely origin. The categories are cultural, surficial, and bedrock. A second objective is to give each zone a rating as either good, fair, or poor, according to its potential as a sulphide prospect if it were considered as a bedrock conductor.

The characteristics of each of the three major classifications are discussed below in subsections a, b, and c.

For any particular anomaly or zone the criteria used to analyze it are applied as rigorously and consistently as possible in order to establish the correct classification. In the vast majority of zones finally selected, the evidence is never totally conclusive. Consequently, the ultimate class selection is the one which appears to be the most probable, bearing in mind that every zone which is discussed in detail has some chance of being a bedrock conductor.

The experience of handling a large amount of INPUT data and observing the ground followup results over a large portion of this data has confirmed the validity of our interpretational criteria.

a) Cultural Conductors

The vast majority of cultural anomalies occur along roads and are accompanied by a 60 Hz response. Power lines are clearly the most common source. Although some power lines are recognized immediately on the records by virtue of phase reversals or an abnormal rate of decay, most yield INPUT anomalies of a normal "high conductivity" character which would be mistaken for bedrock responses. There are also many power lines which cause no INPUT response whatsoever.

Fences, pipelines, communication lines, railways and other man-made conductors can give rise to INPUT responses, the strength of which will obviously depend on the grounding of these objects.

Our analysis of suspected cultural anomalies is helped a great deal by the 60 Hz monitor. It is important to note, however, that the 60 Hz response must be sharply peaked in order to be a reliable indicator and it is equally noteworthy that the 60 Hz response along a power line will occasionally vanish on one or more lines.

The exact location of an INPUT anomaly with respect to the associated 60 Hz response is important. In cases where a definite cultural conductor is known, the lag between the monitor and INPUT responses is consistent from line to line. Any departure of the lag interval from the "normal" would raise suspicion of an additional conductor being present.

The direction of the power line must also be considered, as the inductive response diminishes, sometimes markedly, with reduced coupling when the power line makes a shallow angle with the flight line. In other cases, the shallow angle results in a broadening of the anomaly shape and of the 60 Hz response.

Geological conductors often carry 60 Hz response in the vicinity of power lines but these usually have the appearance of broad swells on the monitor record rather than sharp peaks.

Invariably, there are a few borderline cases which are uncertain; hence the "Hz?" nomenclature appears occasionally on the maps.

It is also necessary to utilize the tracking film. The exact positions of all anomalies, with the exception of the obvious broad surficial features, are checked on the film and possible cultural sources, or the lack thereof, are noted on the work sheets. In this way, cultural features are located which may not be apparent on the planimetric maps, as are small offsets from cultural features which can be very significant in the interpretation of the data.

Another facet of this analysis is the line-to-line comparison of anomaly character along suspected man-made conductors. In general, cultural anomalies should be very narrow, sometimes exhibiting small negatives on their leading edge, and the lag for plotting is often slightly greater than for geological conductors. The INPUT amplitude, the rate of decay, and the anomaly width should not vary a great deal along any one man-made conductor, except for the variation in amplitude related to terrain clearance variation. A marked departure from the average response character along any given feature gives rise to the possibility of a second conductor.

Any monotonous string of narrow anomalies along a road with a sharp 60 Hz response can be discarded immediately. Even the more localized narrow anomalies can usually be eliminated if a potential cultural source is evident on the tracking film and there is a sharp 60 Hz response. A response over a farm or a farm laneway can be eliminated with confidence if the source of power to the farm is obvious. Similarly, an apparently isolated response along a

road can often be discarded by checking for feeble, unplotted anomalies on adjacent lines or for 60 Hz responses with no INPUT anomalies.

Anomalies identified as cultural with a very high degree of reliability (designated by "C") can be ignored in the followup programme. In those cases where any reasonable element of doubt remains as to the type of source and/or where the anomalies have sufficiently favourable character to be considered sulphide prospects, a "C?" is shown and the conductive zone is outlined and a ground check is usually recommended.

In most cases a visual examination of the site will suffice as it is only necessary to verify the presence of a man-made conductor. In a few instances we know already that one cultural conductor is present and the object of the ground check is to determine if there is a second cultural source, a variation in the construction of the single source, a change in the grounding conditions, or perhaps a bedrock source. This type of check is obviously more difficult to accomplish.

b) Surficial Conductors

This term is used for geological conductors in the overburden, either glacial or residual, and in the weathered layer of the bedrock. Most surficial conductors are probably caused by clay minerals. In some environments, salty deposits give rise to highly conductive surficial features.

Other possible electrolytic conductors are residual soils, swamps, brackish groundwater and lake or river-bottom deposits.

Fortunately, most conductive surficial features have low, or at best, intermediate conductivity so they are not easily mistaken for highly conducting bedrock features. Many of them are very broad features and their anomaly shapes are typical of broad horizontal sheets.

When the conductivity is higher, it is usually still possible to identify a flat-lying surficial conductor, thanks to a typical asymmetry in the INPUT responses observed on both edges of the conductor (edge effect) when flying adjacent lines in opposite directions (Figure 1). Flying from A to B, the coupling between the transmitting coil and the flat-lying conductor AB is maximum when the coil is over the leading edge A and minimum when the coil is over the edge B. The INPUT response appears stronger over Point A than over Point B. The phenomenon is reversed when flying from B to A. The actual limits of the conductive zone correspond, in fact, to the envelope of the leading edges of staggered anomalies. In practice there are many variations on this basic pattern caused by variations in width, thickness and conductivity.

Other surficial conductors may be recognized by analyzing the radio-altimeter trace, e.g. conductive deposits in the valleys or increased thickness of the weathered zone on top of the hills. Also, a comparison to the altimeter profile is essential when flying over a surface layer of

EDGE EFFECT

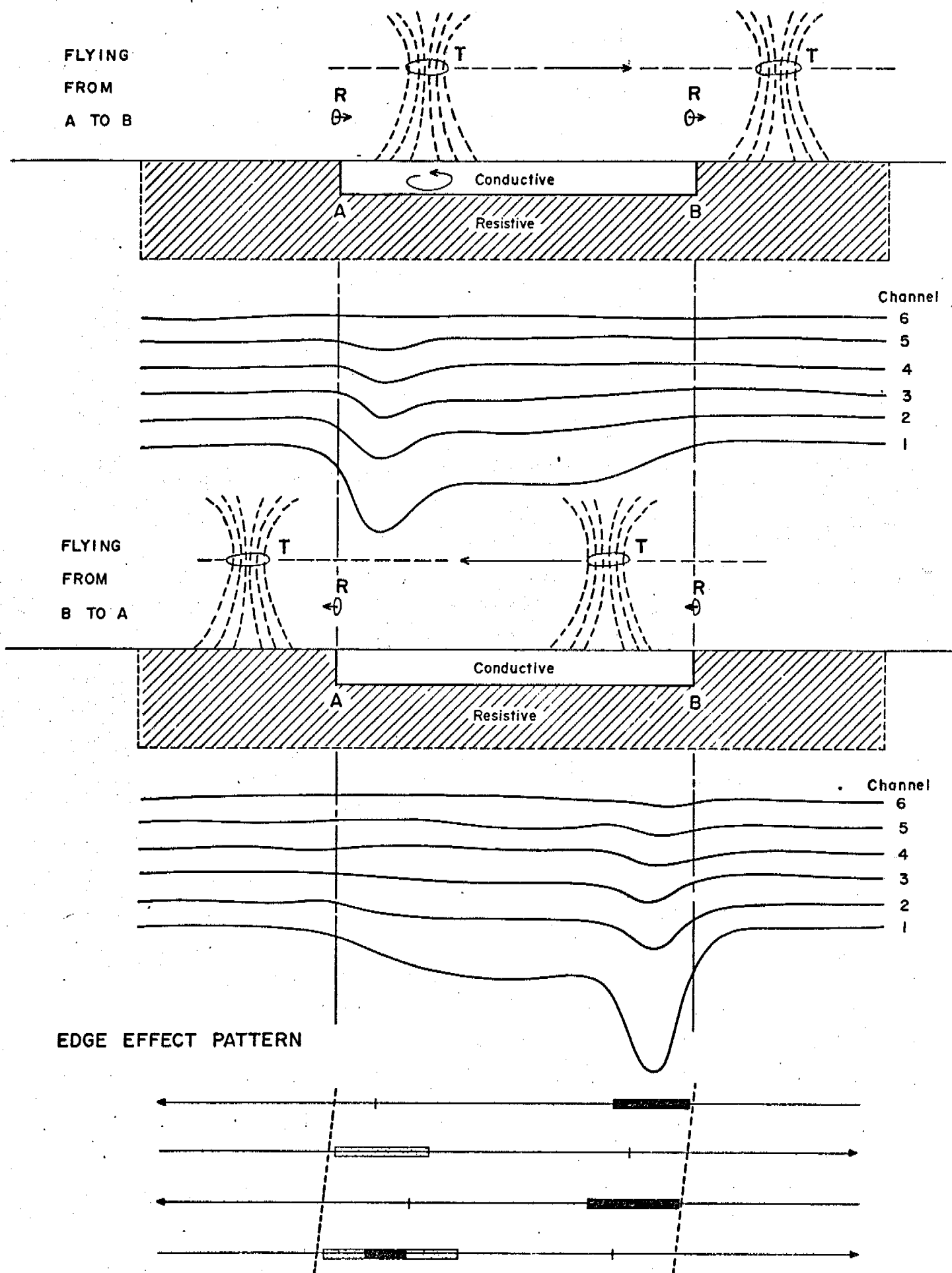


FIGURE 1

apparently high conductivity where a sudden dip of short duration (or small hill) can cause an apparent anomaly which is quite sharp.

However, the existence of surficial conductors related to bedrock lithology does introduce ambiguities into the interpretation. There are instances where we cannot distinguish between weakly conductive serpentine or poorly developed graphite within the bedrock and weakly conducting soils or weathered layer above the bedrock. This does not generally detract from the prime purpose of the survey which is the location of highly conducting massive sulphides, but it does complicate the overall analysis of the data.

If the anomaly shapes show a dependence on line direction, a surficial source is probable; if they show multiple peaking and a lack of dependence on line direction a bedrock source is probable; but in the weaker anomalies the shape is often insufficiently clear for a reliable interpretation.

Formational surficial conductors seem to be most commonly related to rocks of intermediate to basic composition, as they tend to follow magnetic highs. (This is also true of most of the formational bedrock conductors.) However, there are also examples of formational surficial conductors in acidic environments.

Surficial conductors are not always portrayed completely on the EM Map because weaker INPUT responses are not usually plotted. Sometimes, the distribution of this

type of conductor is indicated by the stronger sections which are plotted and by the conductor outline which delineates the entire zone.

Any outlined conductive zones which are not assigned an identification number can be taken as interpreted surficial features. Similarly, any isolated anomalies which bear no zone number and no "C" designation are interpreted as surficial.

c) Bedrock Conductors

This category is comprised of those anomalies which do not fit the criteria laid down for classifications a and b. It is difficult to assign a specific set of values which signify bedrock conductivity because any individual zone or anomaly might exhibit some, but not all, of these values and still be a bedrock conductor.

The criteria considered as favourable pointers to a bedrock conductor are:

1. Intermediate to high conductivity. Channels five and six are generally affected. Where the conductivity drops (i.e. first to fourth channel ratios greater than 15) it is difficult to distinguish narrow surficial conductors from bedrock ones.
2. Good anomaly shape. Narrow, relatively symmetrical, anomalies with well defined peaks are preferred to wider anomalies with rounded peaks. The leading flank

should show a gradual increasing response with no abrupt change in slope or tendency to go negative.

3. No serious displacement of anomaly peak position with line direction, i.e. edge effect. Some displacement can be expected from a wide bedrock source or banded bedrock source which is not resolved into more than a single peak. However, major displacements in peak position appears to be associated with surficial conductors only.
4. Small to intermediate amplitude. Large amplitudes do occur but, generally, the amplitude of the response is smaller than for thick, extensive surficial conductors. The amplitude varies according to the depth of the source.
5. A degree of continuity. Maintenance of any, or all, of characteristics 1, 2, 3 and 4 is strong evidence in favour of a bedrock conductor.
6. Associated magnetic response with similar strike. A related magnetic response is usually interpreted as signifying a lithologic unit carrying the magnetic and conductive material.

However, as discussed in subsection b, some basic rocks which weather to produce a conductive upper layer will possess this magnetic association. In the absence of characteristics 1, 2, 3 or 4, the related magnetic response does

not help to distinguish between surficial conductivity related to a bedrock feature and genuine bedrock conductivity.

Interference, then, with a conductive overburden can make the identification of a bedrock conductor somewhat difficult but a careful and consistent comparison of residual responses to the above criteria results in a high level of success.

Residual anomalies, basically, are those which, in comparison to other deflections, appear to be located "on" rather than "in" the INPUT traces.

Most obvious bedrock conductors occur in long, relatively monotonous, sometimes multiple zones following formational strike. Graphitic material is usually the most probable source. Massive syngenetic sulphides running for many miles are known in nature but, in general, they are not common.

Other sources of bedrock conductivity are massive magnetite and serpentine. We rely heavily on the amplitude and dimensions of the associated magnetic activity plus the geological setting of the conductor to distinguish these cases.

The criteria used for selection of a bedrock conductor which is considered to have a good chance of being due to a massive sulphide are:

- high conductivity,
- good anomaly shape,
- small to intermediate amplitude,
- isolation,
- short strike length,
- preferably with a localized, small amplitude magnetic anomaly of the same width.

If the magnetic anomaly has similar lateral dimensions, has an amplitude of the order of 20 to 400 gammas, and correlates directly with the EM response, there is a strong possibility of pyrrhotite being present.

We must consider, however, the possibility of localized occurrences of massive sulphides within or near formational conductors. The selection of targets from within these extensive belts is a difficult problem. They are singled out primarily on the basis of a marked local increase in conductivity and/or amplitude or some evidence for a relatively localized occurrence. Variations within the conductive formations themselves can account for these characteristics so the reliability of this type of selection is considered to be quite poor.

Localized magnetic correlations within long formational conductors can be taken as evidence of pyrrhotite. In some environments, however, this criterion is very difficult to apply due to the prevalent association of conductors to magnetically active rock types. The compilation of the magnetic data into isomagnetic contour maps assists this type of selection.

COMBINED AIRBORNE EM AND MAGNETOMETER SURVEY
BARRINGER "INPUT" ELECTROMAGNETIC SYSTEM

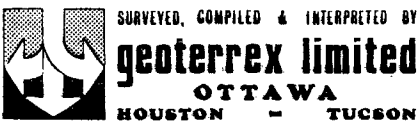
EM PLAN MAP

REDBANK AREA
NORTHERN TERRITORY

FOR

AMDEX MINING LIMITED

SCALE = 1 : 12,000 (APPROX.)

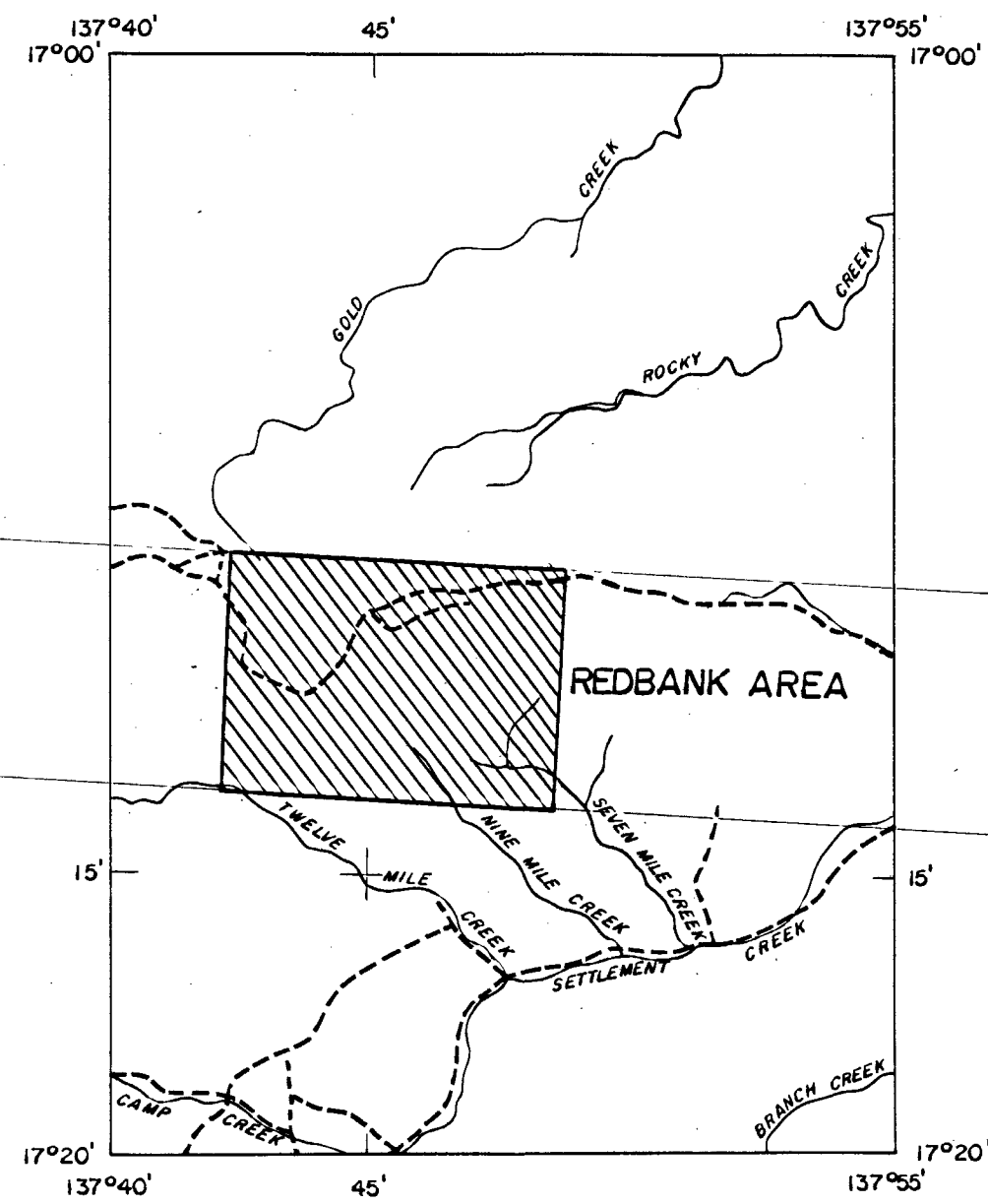


FLOWN IN AUGUST, 1973

GEOTREX PROJECT NO. 85-156

LOCATION MAP

SCALE = 1/250,000

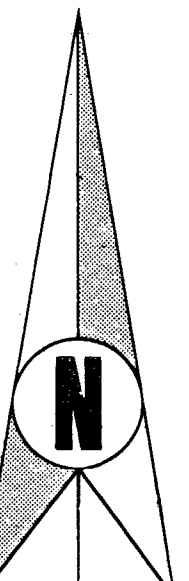


INPUT LEGEND

- 6 CHANNEL ANOMALY
- 5 CHANNEL ANOMALY
- 4 CHANNEL ANOMALY
- 3 CHANNEL ANOMALY
- 2 CHANNEL ANOMALY
- 1 CHANNEL ANOMALY
- PEAK POSITION
- 1st and 4th CHANNEL AMPLITUDES
- ALTITUDE (FEET)
- COINCIDENT MAGNETIC ANOMALY (GAMMAS)
- OFFSET MAGNETIC ANOMALY
- CULTURAL ANOMALY (INTERPRETED)
- RESIDUAL ANOMALY (INTERPRETED)

INTERPRETATION LEGEND

- CONDUCTOR OUTLINE AND IDENTIFICATION NUMBER
- SELECTED CONDUCTOR



COMBINED AIRBORNE EM AND MAGNETOMETER SURVEY
BARRINGER "INPUT" ELECTROMAGNETIC SYSTEM

ISOMAGNETIC CONTOUR MAP

REDBANK AREA
NORTHERN TERRITORY

FOR

AMDEX MINING LIMITED

SCALE = 1:12,000 (APPROX.)

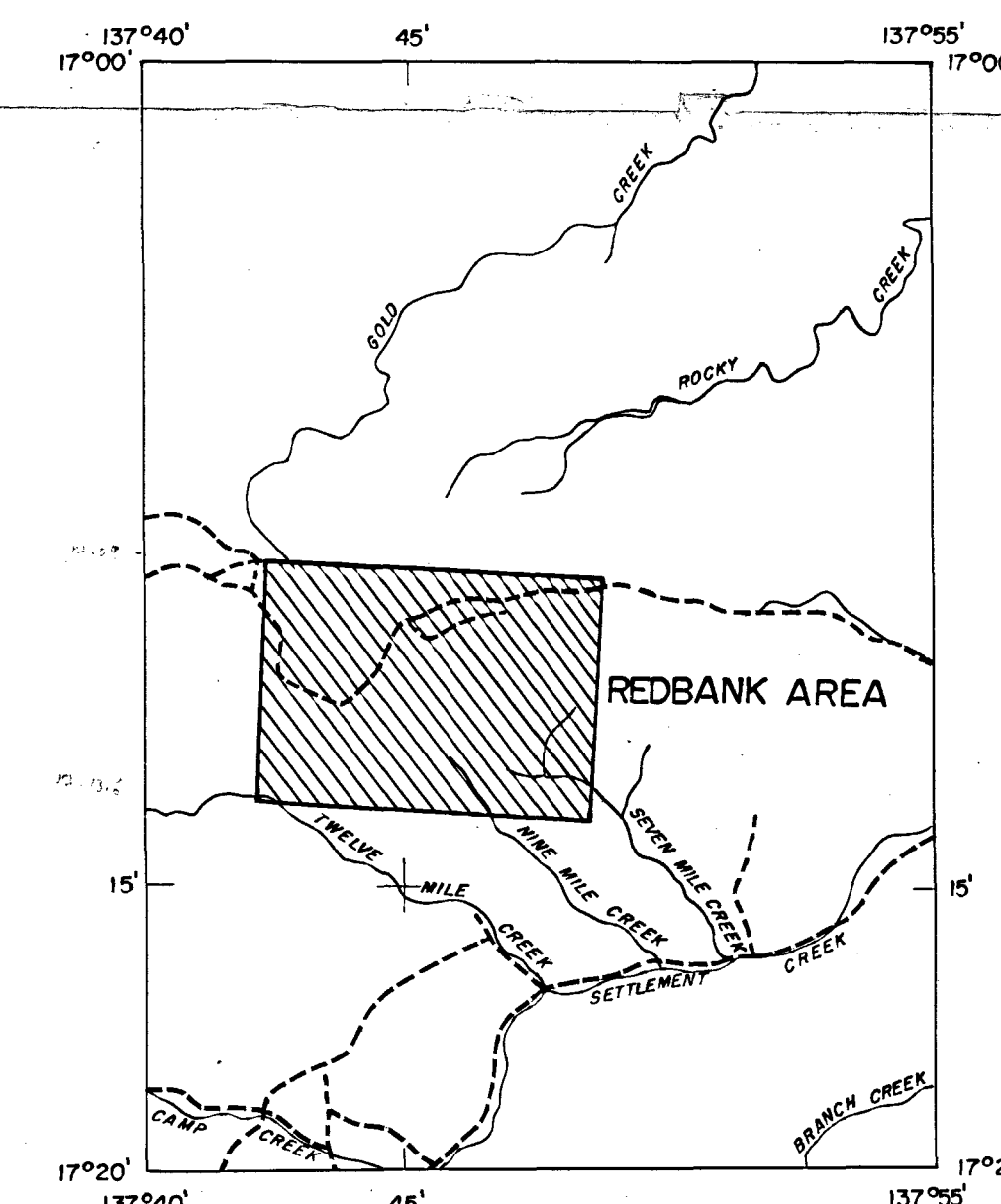


FLOWN IN AUGUST, 1973

GEOTREX PROJECT No. 83-156

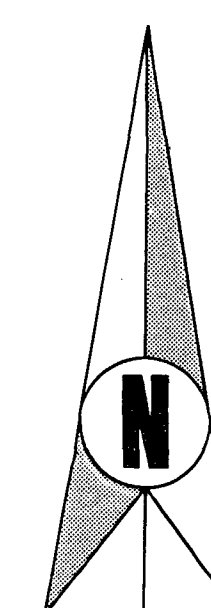
LOCATION MAP

SCALE: 1:250,000



LEGEND

- 500 GAMMAS
- 100 GAMMAS
- 20 GAMMAS
- 10 GAMMAS
- MAGNETIC LOW
- CONTOUR INTERVAL 10 GAMMAS



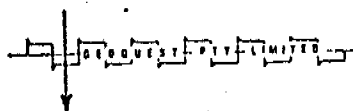
APPENDIX IV

PART B



Amdex mining limited

**GEOPHYSICAL SURVEY
REDBANK PROSPECT N.T.
NOVEMBER 1973**



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1 INTRODUCTION

At the request of Mr L. Furlong of Amdex Mining Limited, a Resistivity and Induced Polarisation survey was carried out over portions of the Redbank prospect, Northern Territory. This survey was carried out over the period August 29 - November 03, 1973.

This report contains various information relating to that survey, as well as a presentation of all data gathered.

It is beyond the requirements of this company to provide a formal interpretation and evaluation of data. Amdex personnel maintained a daily appraisal of results on site, and final reporting is also being done by Amdex geophysicists.

2 PREVIOUS WORK

Amdex have previously completed, or are in the process of completing, an extensive exploratory programme. In addition to geological mapping, other work has included geochemical sampling and analysis, various airborne geophysical techniques and photography, magnetrometry, and so on.

Additionally, information is available covering surveys - geophysical and other - completed by previous explorers in the area.

It is beyond the requirements of this report to include any but the work completed by Geoquest.

3 AREA OF OPERATION

The Redbank prospect is located approximately 20 miles west of Wollorgorang homestead in the Northern Territory. Air distance from Mt Isa - the nearest town of appreciable size - is about 300 miles. Bearing from Mt Isa is about 233° .

Global coordinates are $139^{\circ}30'$ east, $20^{\circ}45'$ south.

4 OPERATING CONDITIONS

The areas surveyed have relief ranging from flat, sandy semi desert conditions, to physically difficult terrain. Access to equipment "set-up" sites was possible in all cases with a four wheel drive vehicle, although in some instances such access was difficult and time consuming.

Weather conditions ranged from hot to very hot, with humidity becoming extremely oppressive during the latter stages of the survey.

Additionally, the isolation of the area caused problems with supplies of equipment and so on, especially when spare or replacement items were required.

5 EQUIPMENT

Variable frequency induced polarisation equipment was employed. This may be categorised:

McPhar P660 I.P. transmitter

McPhar P660 I.P. receiver

Homelite 127V 400Hz 4.5KVA generator driven by
a Sachs rotary engine, model KM48

Miscellaneous equipment included two-way radios, cable, spools, winders, porous pots, tools, spares, and so on.

A Toyota four wheel drive vehicle was made available by Amdex for the survey.

6

GRIDDING

The geophysical survey grid had previously been established, and grid coordinates are common for all other surveys carried out by Amdex over the property. Wooden stakes were used to mark the grid on a 100' by 200' grid pattern, although in some areas, this grid density was reduced.

7

OPERATING PERSONNEL

Geoquest were required to provide two only field assistants, with extra personnel as required being supplied by Amdex.

Geoquest personnel on site were P. Mewkill and M. Bertie (party leaders), G. Nolan and D. MacGregor.

8 OPERATING PROCEDURES

8.1 Gradient Array (10)

Five gradient array surveys were carried out. In each case the current electrode spacing (AB) was 9,000 feet, with traverses being surveyed with potential electrode spacings (MN) of 400 feet. Potential readings were recorded every 200 feet, with line spacings of 400 feet. In anomolous areas, in-fill lines 200 feet apart were added, and in part of the Sandy Flat area potential readings were taken at 100 feet increments.

Operating frequencies were 2.5 and 0.3Hz. To eliminate the effects of electromagnetic coupling, the transmitting cable was well removed from the survey area. Current electrodes were aluminium foil wetted with salt water (current electrode pits had been pre-prepared by Amdex personnel), whilst potential electrodes were standard porous pots, with Cu/CuSO₄ as the electrode/electrolyte.

8.2 Dipole-Dipole

Anomalous areas of the gradient array work were followed up using the dipole-dipole technique, and the Wanyi, El Rae, and Five Channel areas were also covered in part with dipole-dipole I.P.

Electrode spacings (x) were wither 400 or 200 feet, and readings were taken to $n = 4, 5, \text{ or } 6$. Again, operating frequencies were 2.5 and 0.3Hz and current and potential electrodes were as for the gradient array work.

8.3 Mise-a-la-Masse

To the latter stages of the survey, five mise-a-la-masse studies were made. This was completed as a resistivity survey only, with operating frequency of 2.5Hz. The operating frequency was selected to (1) eliminate spurious DC self potential signals, and (2) allow reasonably rapid accumulation of data. Potential electrodes were porous pots. The down-hole current electrode was an iron or copper rod taped to the transmitting cable. The second transmitting electrode was removed to a distance great enough to be considered as infinity.

In all cases potential readings were recorded across a dipole of 100 feet. Traverse intervals were either 200 or 100 feet, dependant upon the nature of results.

9 REDUCTION AND PRESENTATION OF DATA

Most data was reduced on site using slide rule computation. Later all data was checked in Sydney using an electronic calculator.

Much time was spent in computing the three-dimensional geometric constant required to reduce the mise-a-la-masse data to apparent resistivity.

Three plan drawings are presented for each gradient array survey. These are Apparent Resistivity (expressed in ohm.feet/ 2π), Percentage Frequency Effect (PFE), and Metallic Conduction Factor (MCF).

In each case the scale is one inch equalling 200 feet.

The Apparent Resistivity data is contoured logarithmically, with contour intervals of 1, 1.5, 2, 3, 5, 7.5, 10, 15....

PFE information is linearly contoured, with contour values 1, 2, 3, 4.....

MCF data is contoured as the Apparent Resistivity.

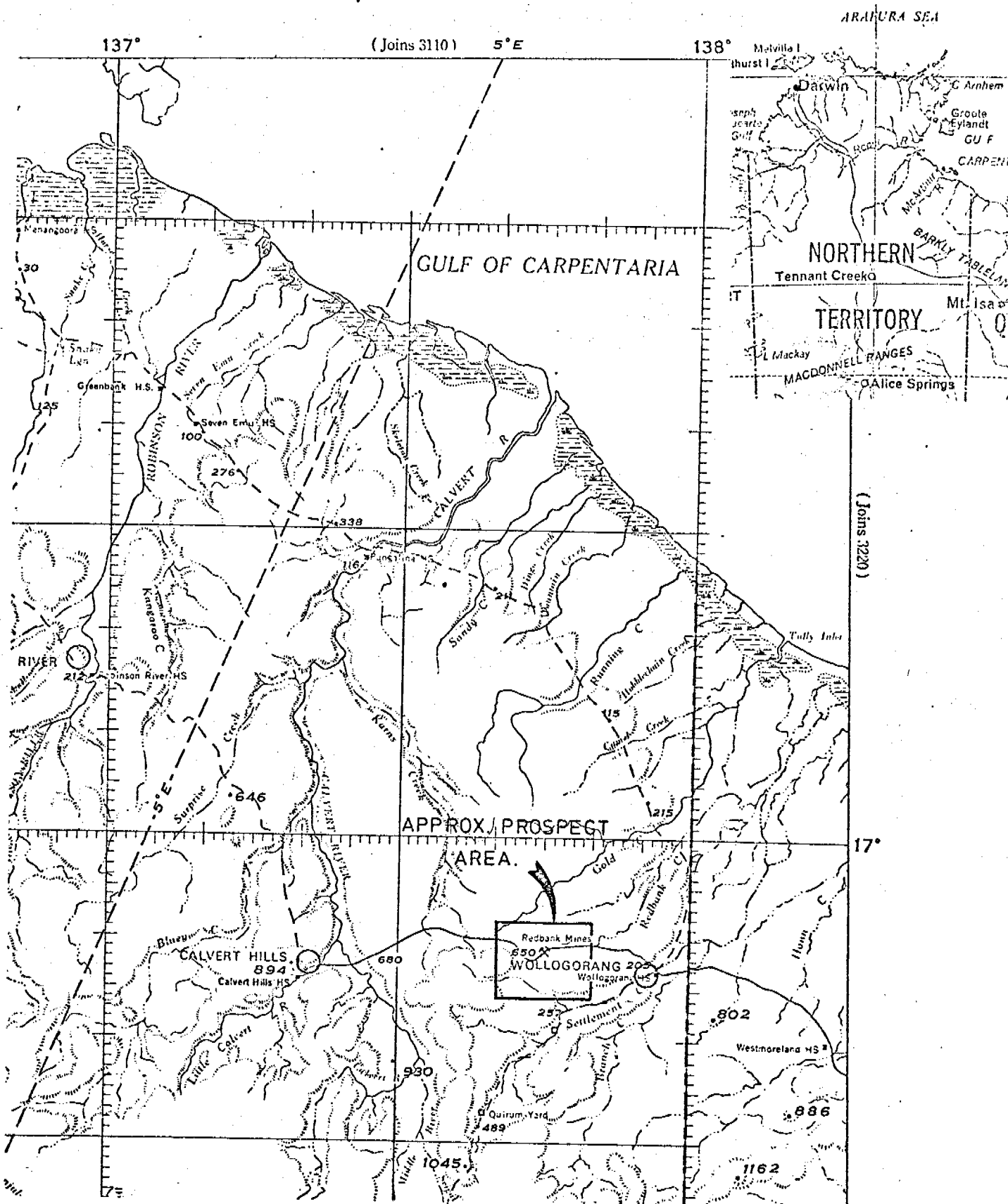
The dipole-dipole results are presented in the standard pseudo section format. Parameters displayed are Apparent Resistivity, Percentage Frequency Effect, and Metallic Conduction Factor. These parameters are expressed in the same units as data for the gradient array work, with similar contouring techniques.

Mise-a-la-masse information is presented as a plan drawing displaying Apparent Resistivity (expressed in ohm.feet/2.pi).

10 DISTRIBUTION

Three copies of this report have been prepared - two have been presented to Amdex Mining Limited, whilst the third copy is retained by Geoquest Pty Limited.

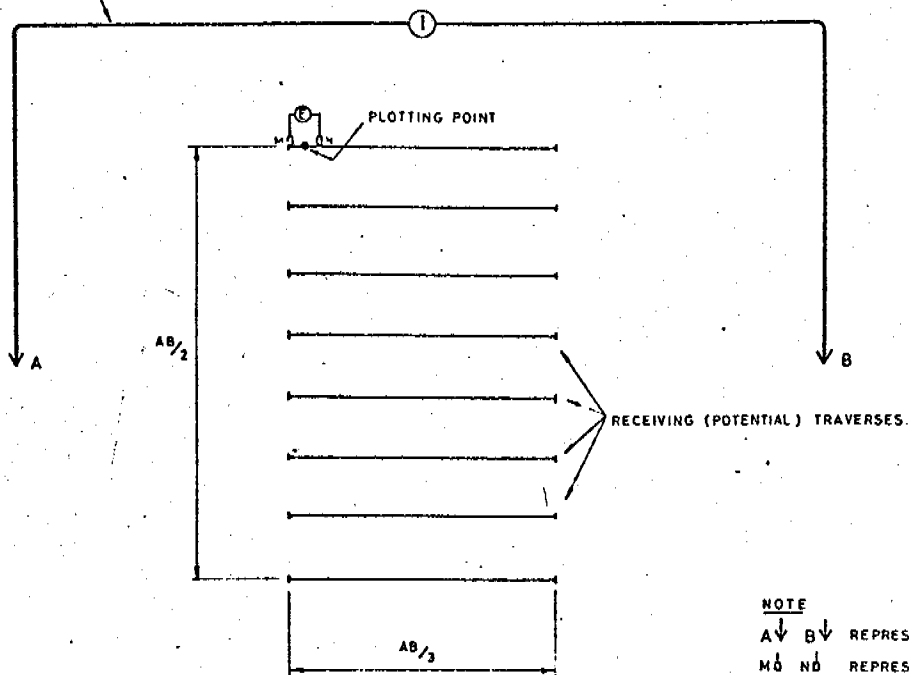
All information contained within Geoquest's copy is considered as being confidential, and shall not be divulged to other parties unless at the express request of Amdex.



AMDEX MINING LIMITED
REDBANK PROSPECT N.T.

GENERAL LOCALITY

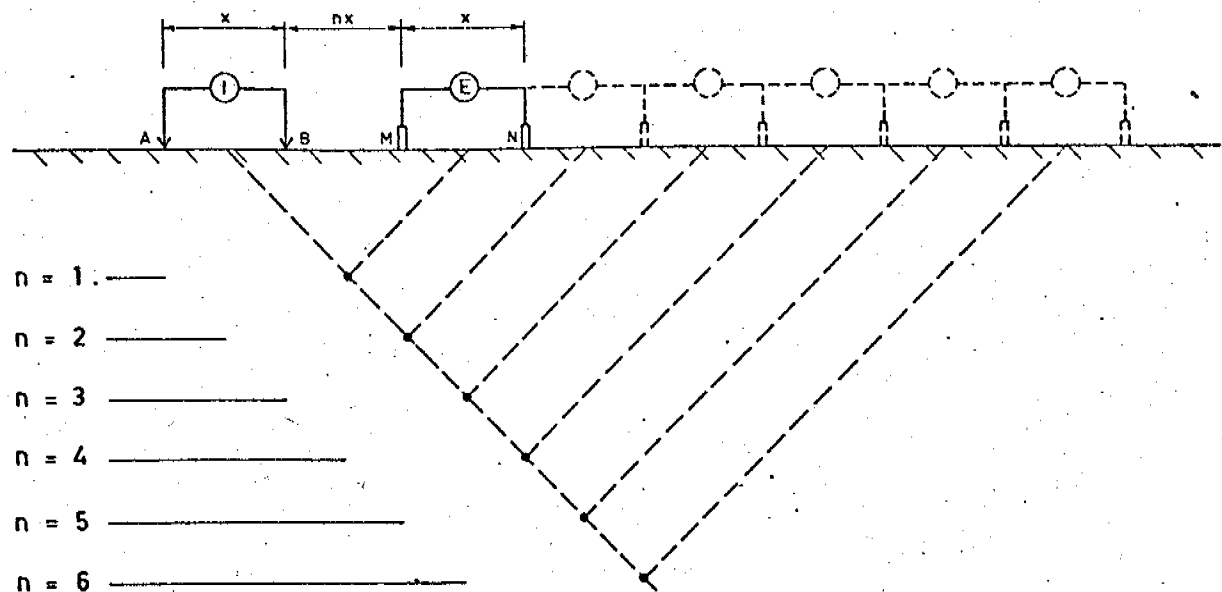
CURRENT CARRYING CABLE - NOTE: CURRENT CARRYING CABLE
WELL REMOVED FROM SURVEY
AREA.



NOTE
A ↓ B ↓ REPRESENT CURRENT ELECTRODE.
M ↓ N ↓ REPRESENT POTENTIAL ELECTRODE.

SCHEMATIC OF GRADIENT ARRAY ELECTRODE CONFIGURATION
PLAN VIEW.

SCHEMATIC OF ELECTRODE CONFIGURATION

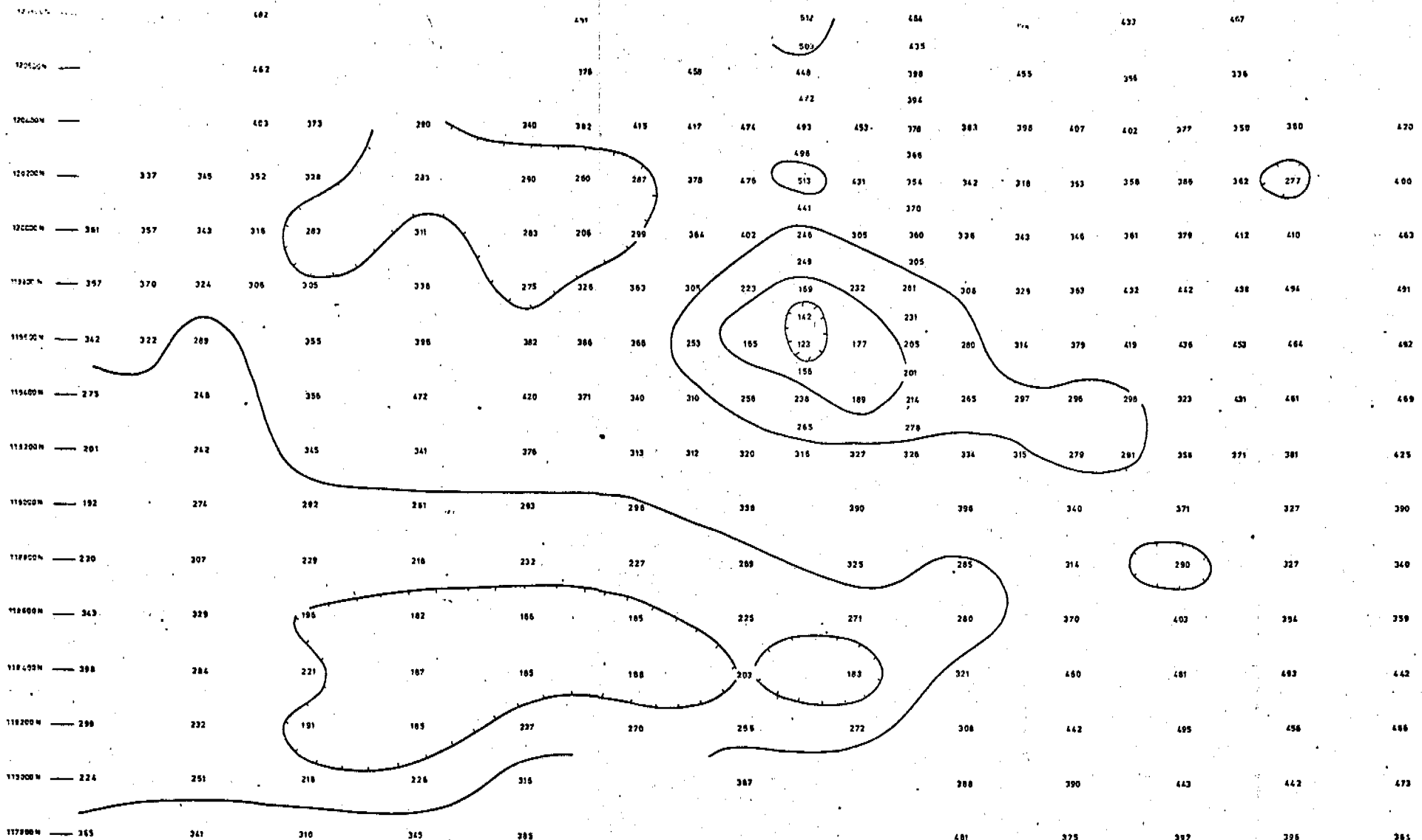


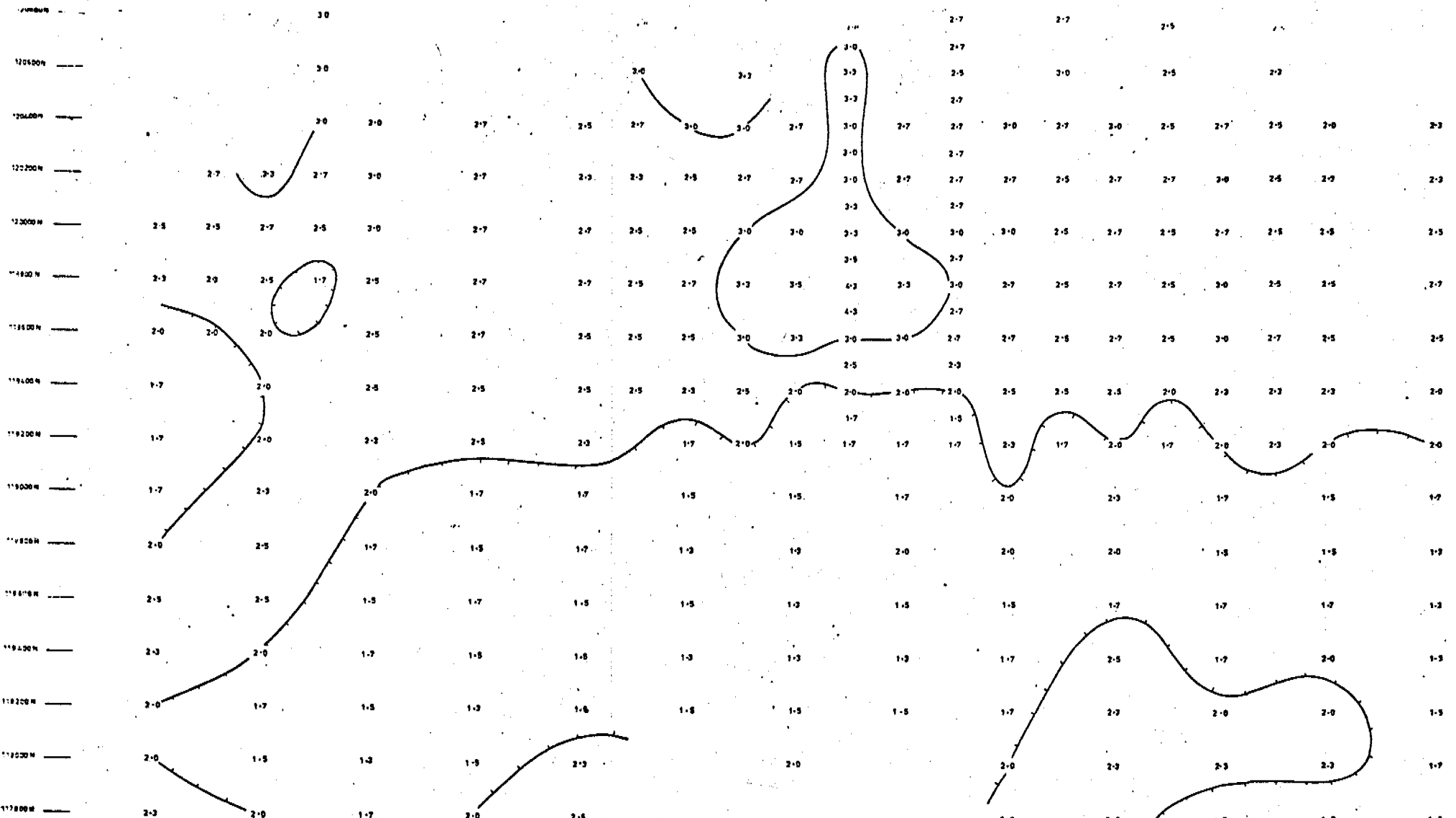
NOTE

A ↓ B ↓ REPRESENT CURRENT ELECTRODE.
M ↑ N ↑ REPRESENT POTENTIAL ELECTRODE.

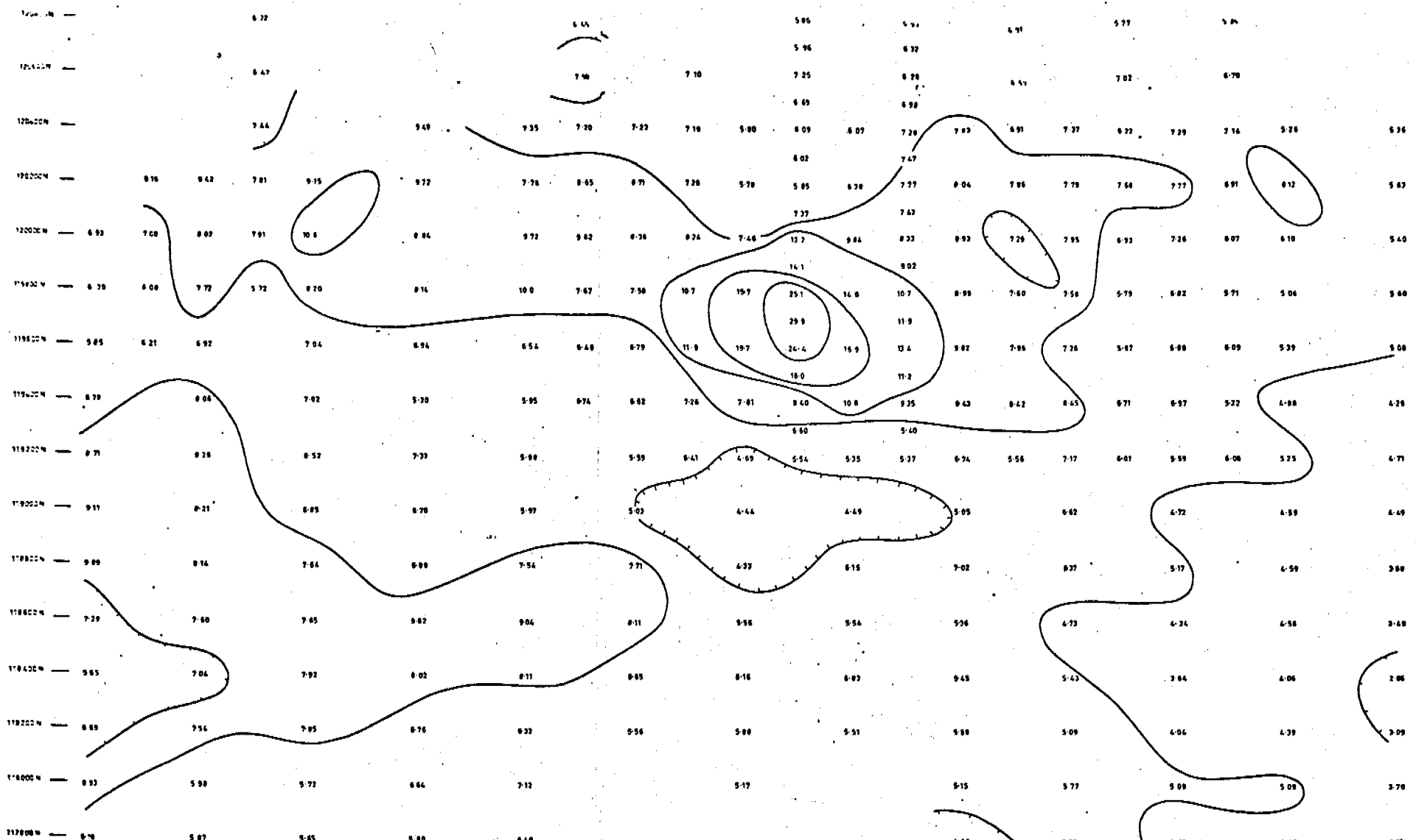
SCHEMATIC OF DIPOLE - DIPOLE ELECTRODE CONFIGURATION
SHOWING IDEALISED PLOTTING POINTS
SECTIONAL VIEW

SCHEMATIC OF ELECTRODE CONFIGURATION





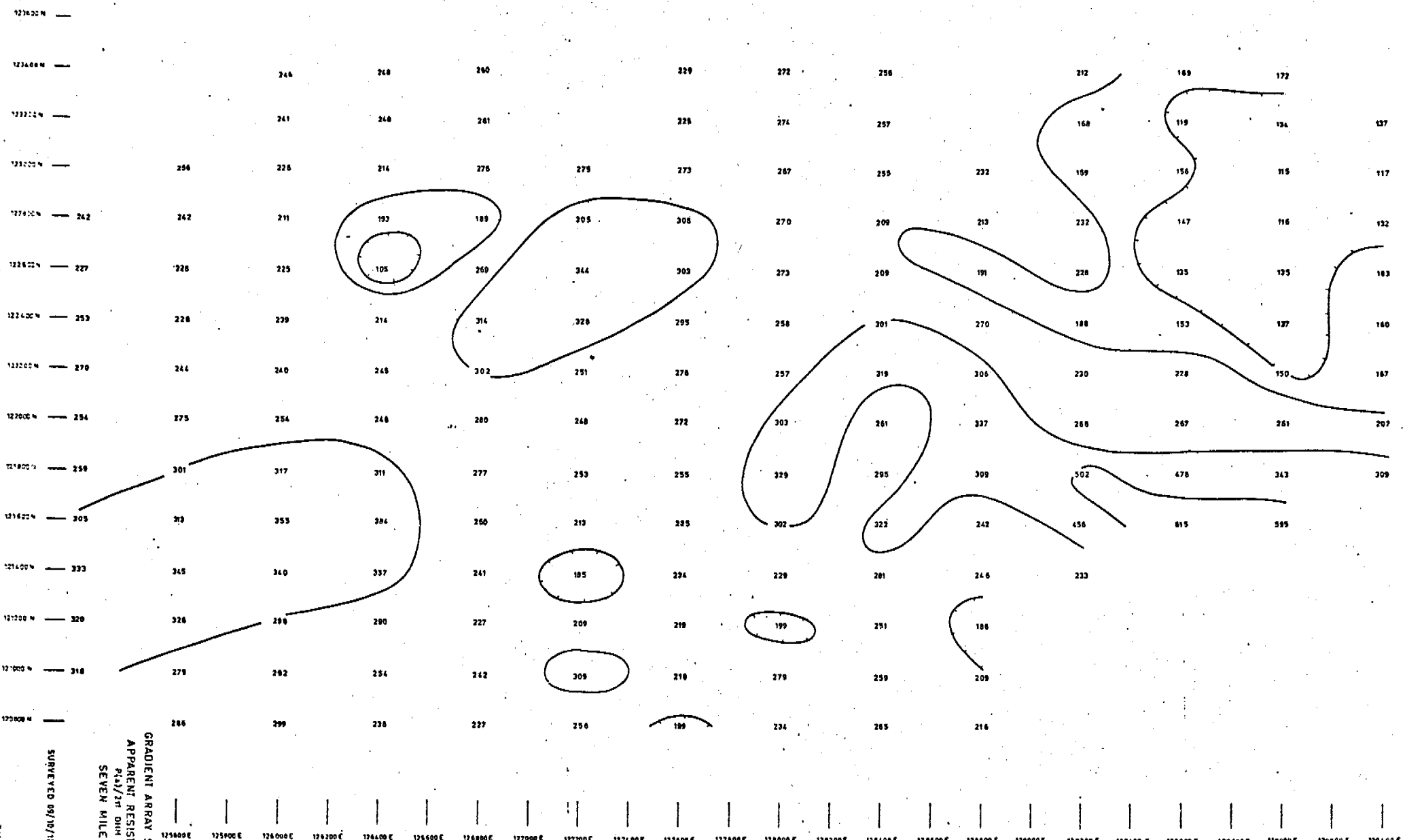
SURVEYED 04/05/01-09-13



GRADIENT ARRAY SURVEY
METALLIC CONDUCTION FACTOR
SANDY FLAT

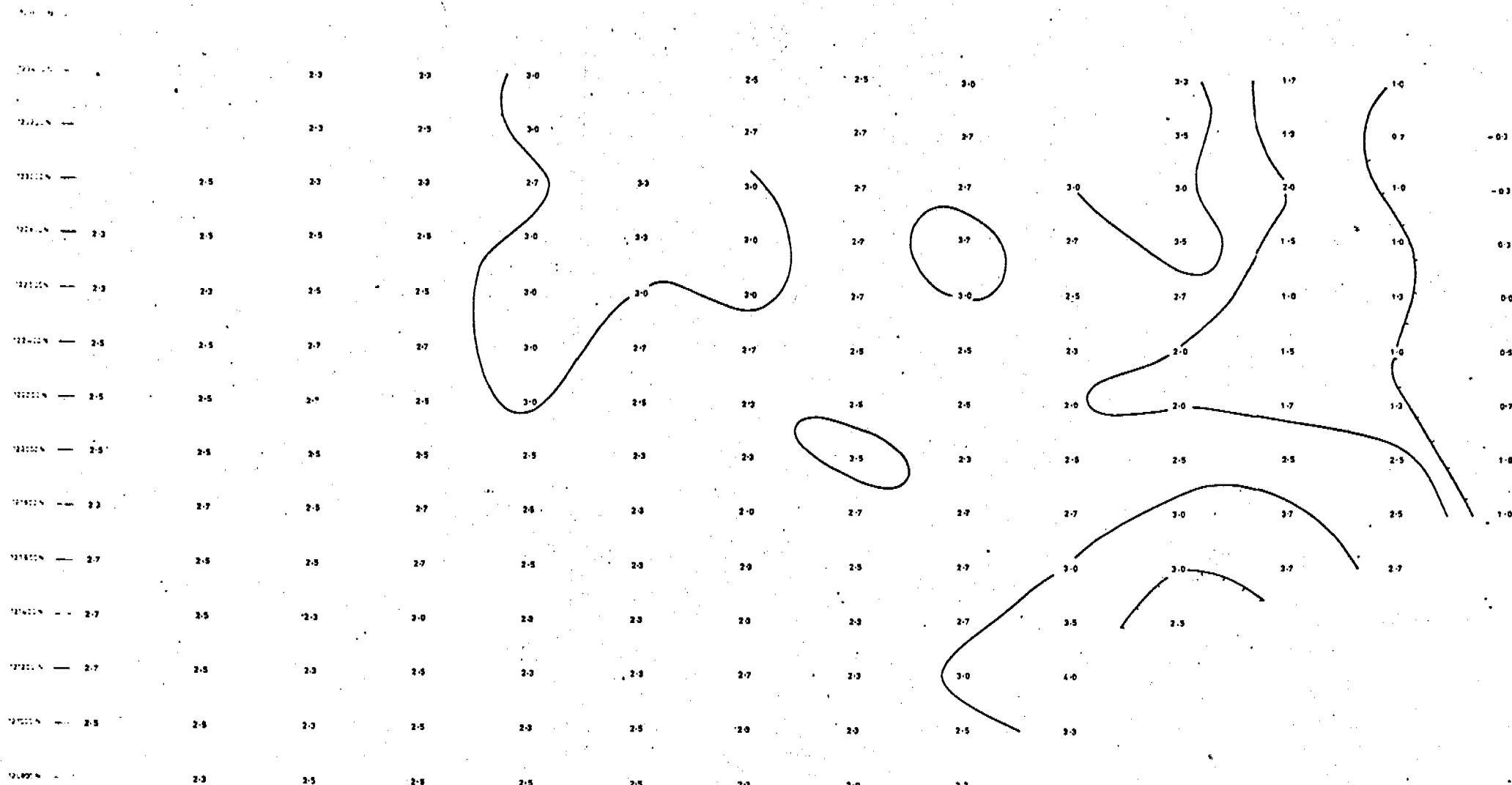


SURVEYED 04/05/06/07-09-197



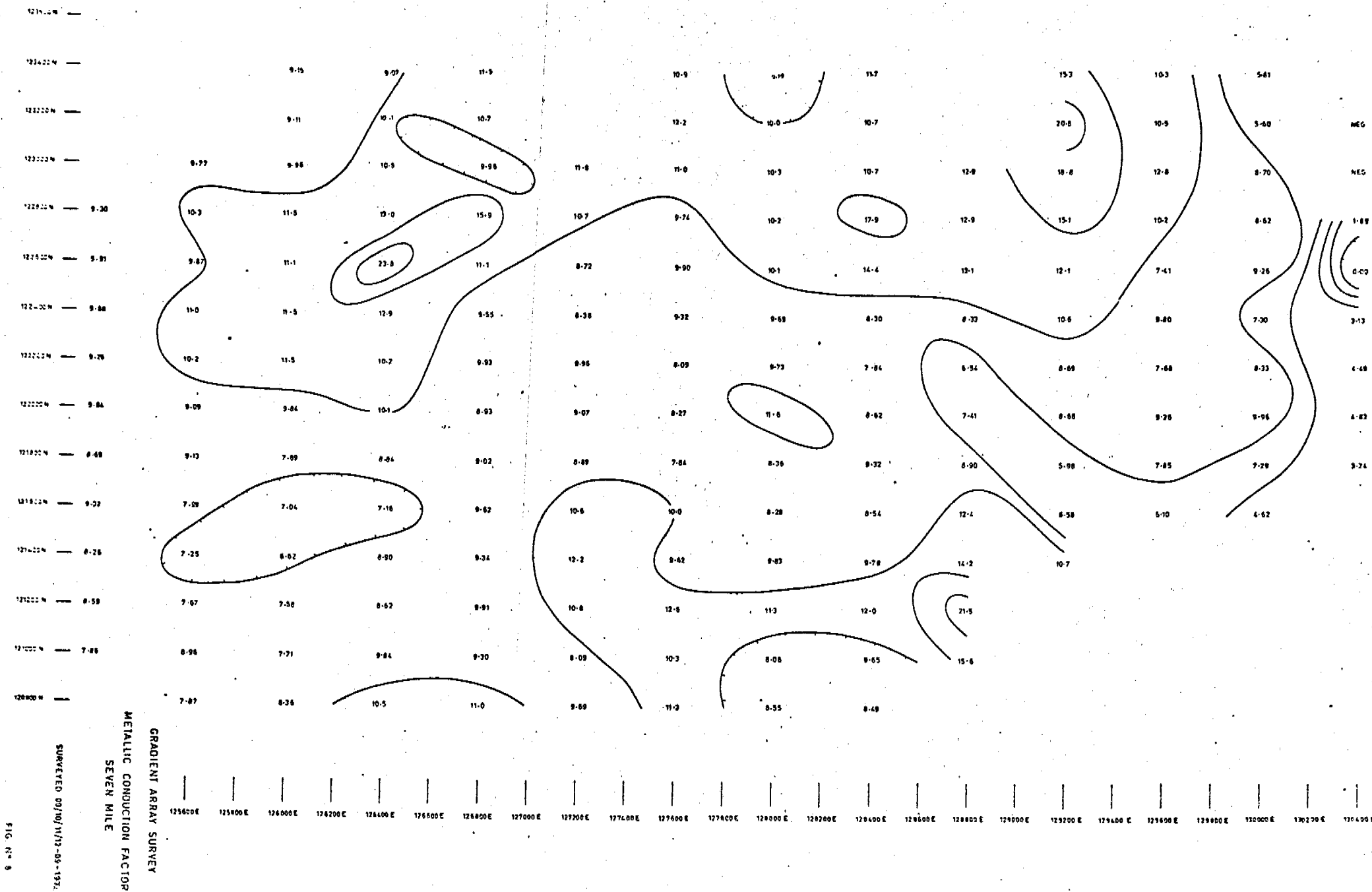
GRADIENT ARRAY SURVEY
APPARENT RESISTIVITY
PL3/JT OHM FEET
SEVEN MILE

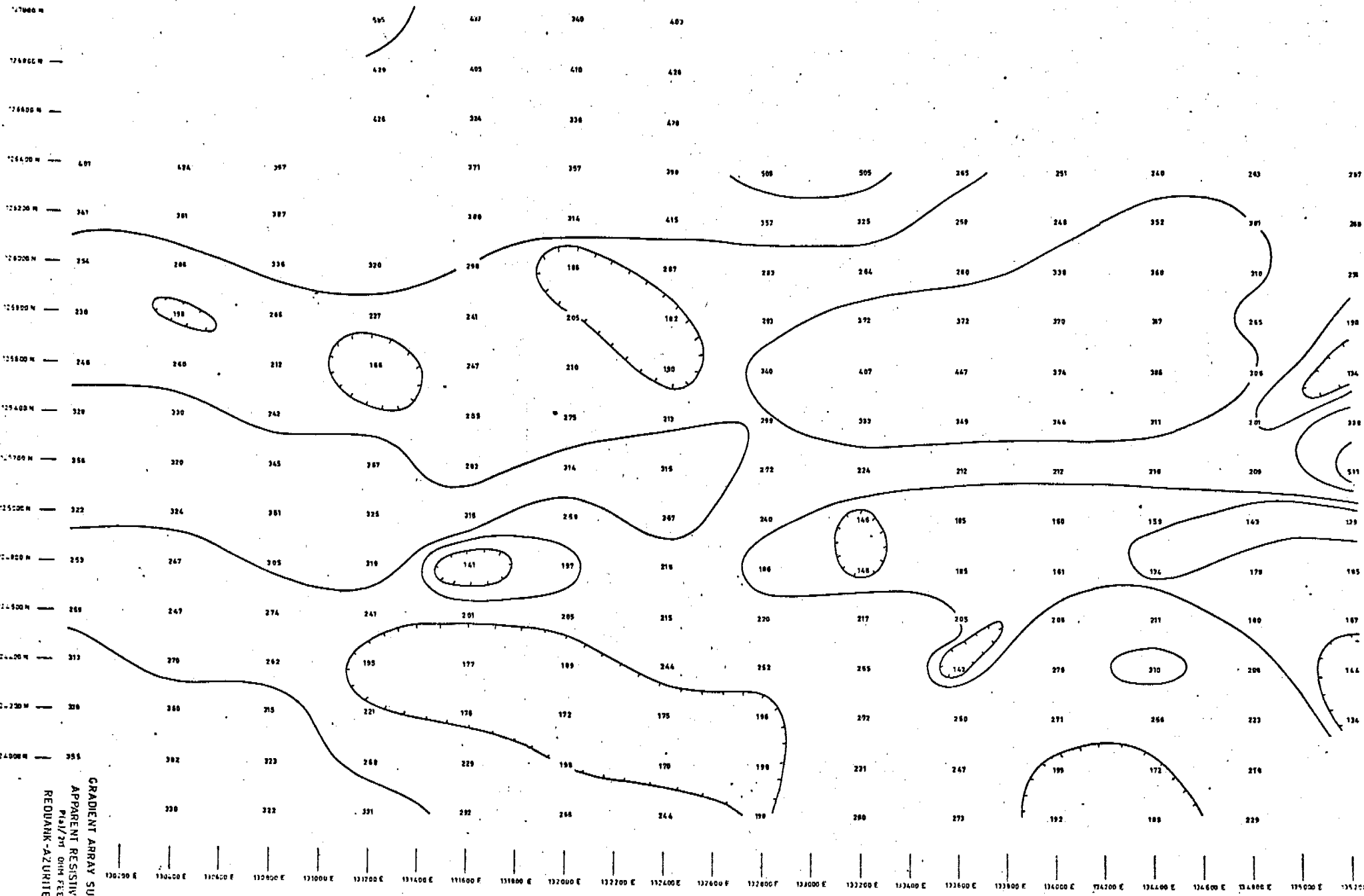
SURVEYED 09/10/11/13-08-1977



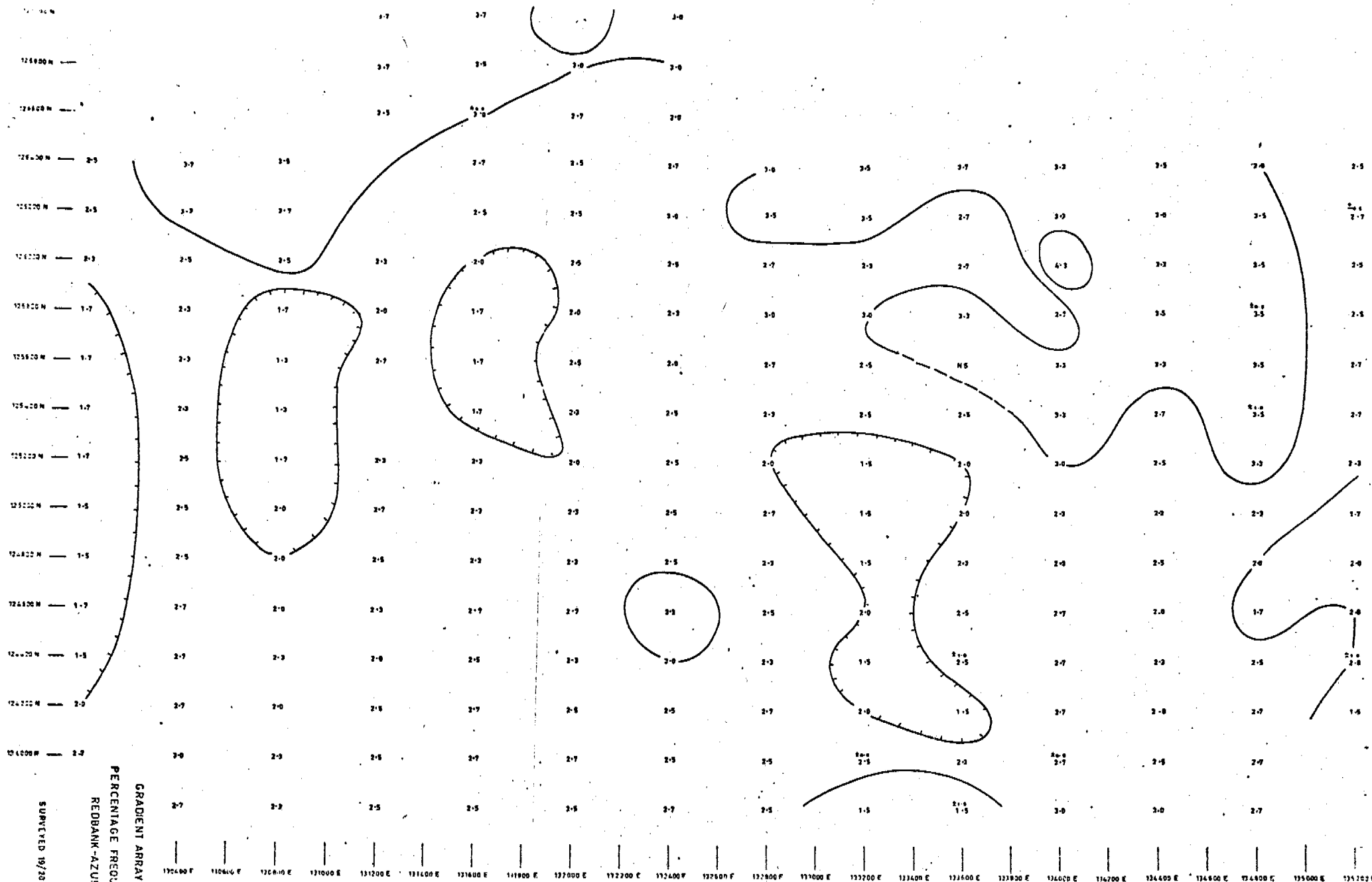
GRADIENT ARRAY SURVEY
PERCENTAGE FREQUENCY EFFECT
SEVEN MILE

SURVEYED 08/10/11-12-03-1573

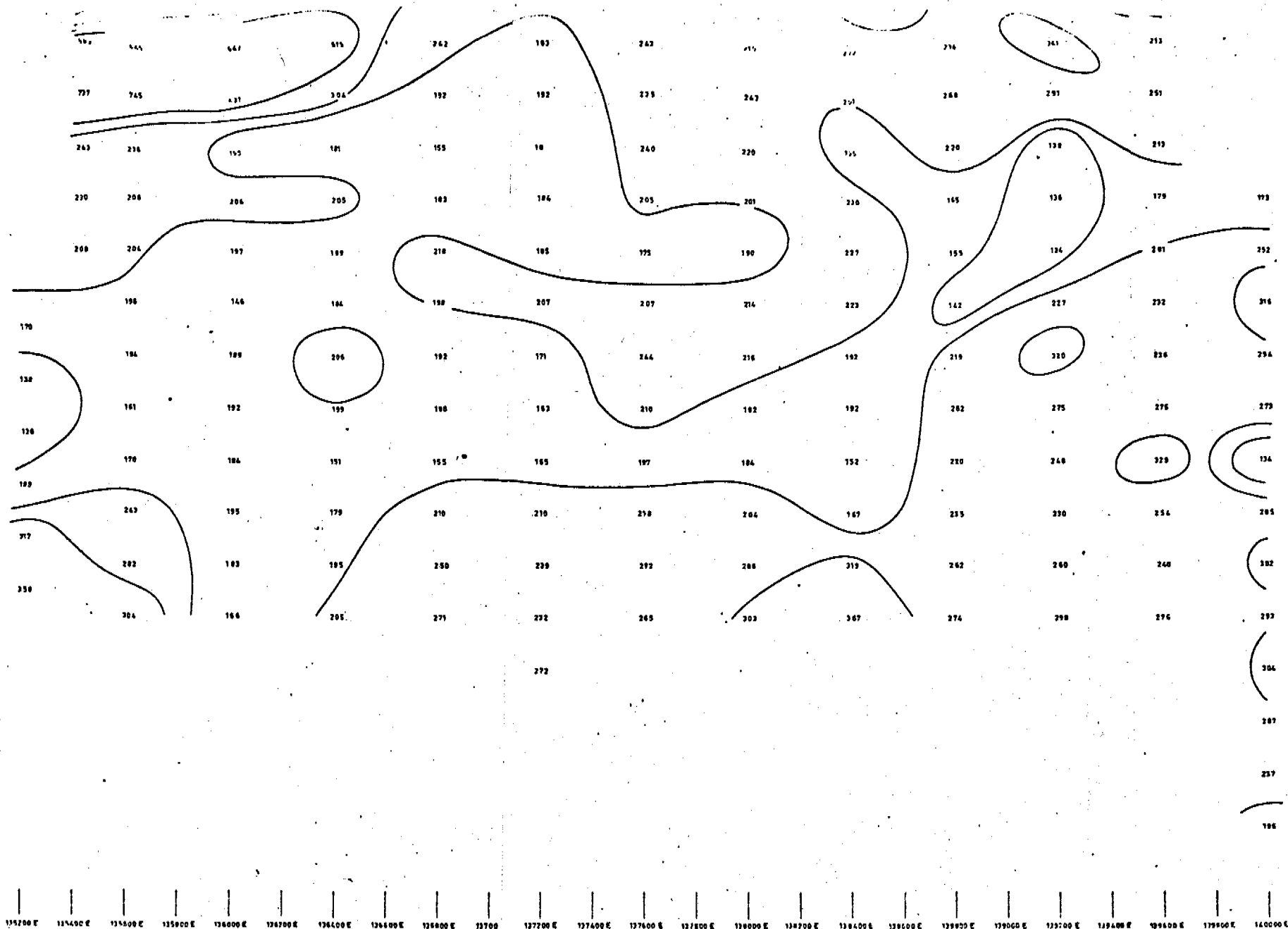




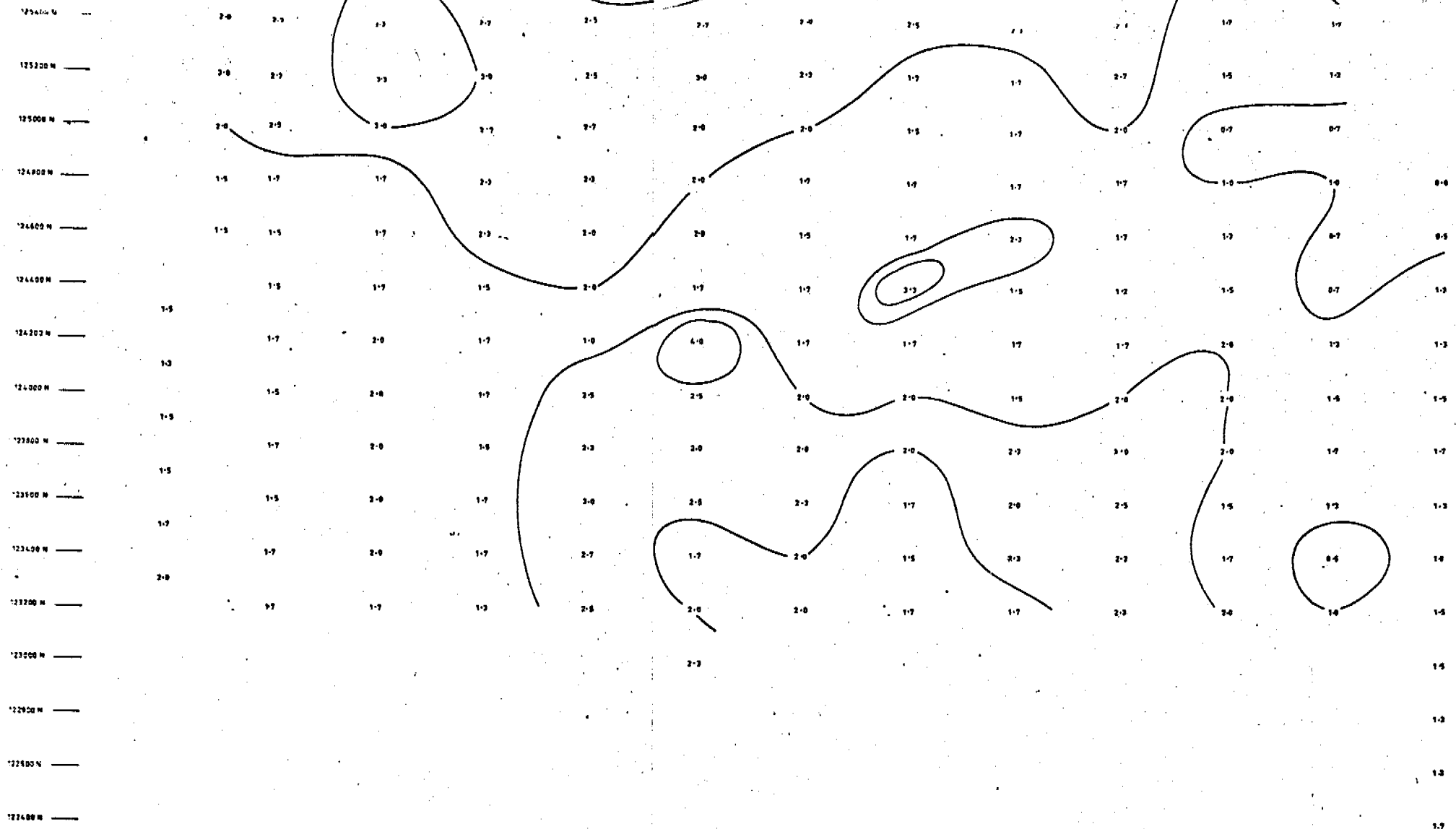
GRADIENT ARRAY SURVEY
 APPARENT RESISTIVITY
 P14/71 00M FEET
 RED BANK-AZURITE
 SURVEYED 9/26/73/24-10-1973
 FIG. No. 9



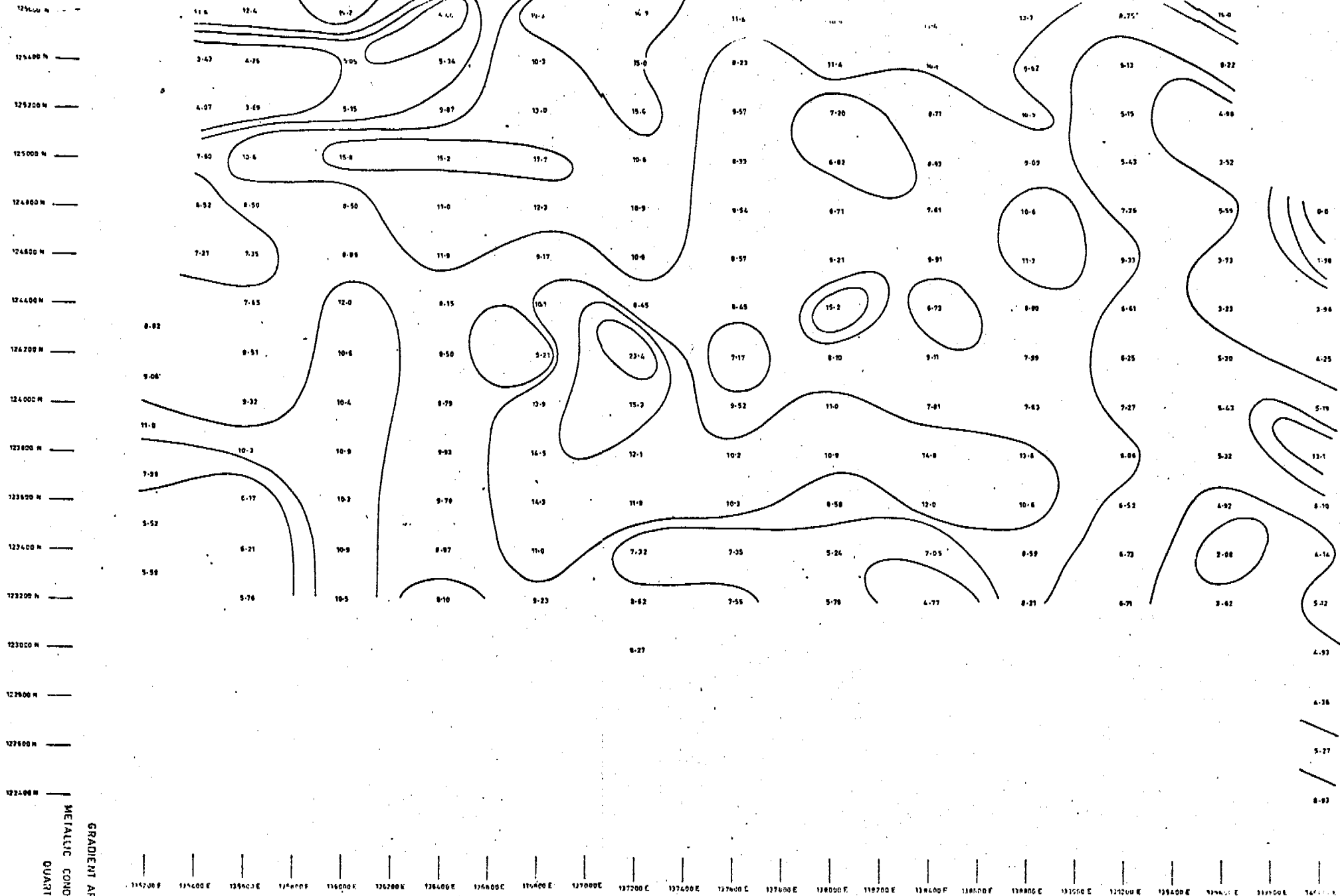
GRADIENT ARRAY SURVEY
PERCENTAGE FREQUENCY EFFECT
REDBANK-AZURITE
SURVEYED 10/20/77 (24-9-1977)
FIG. 8-10



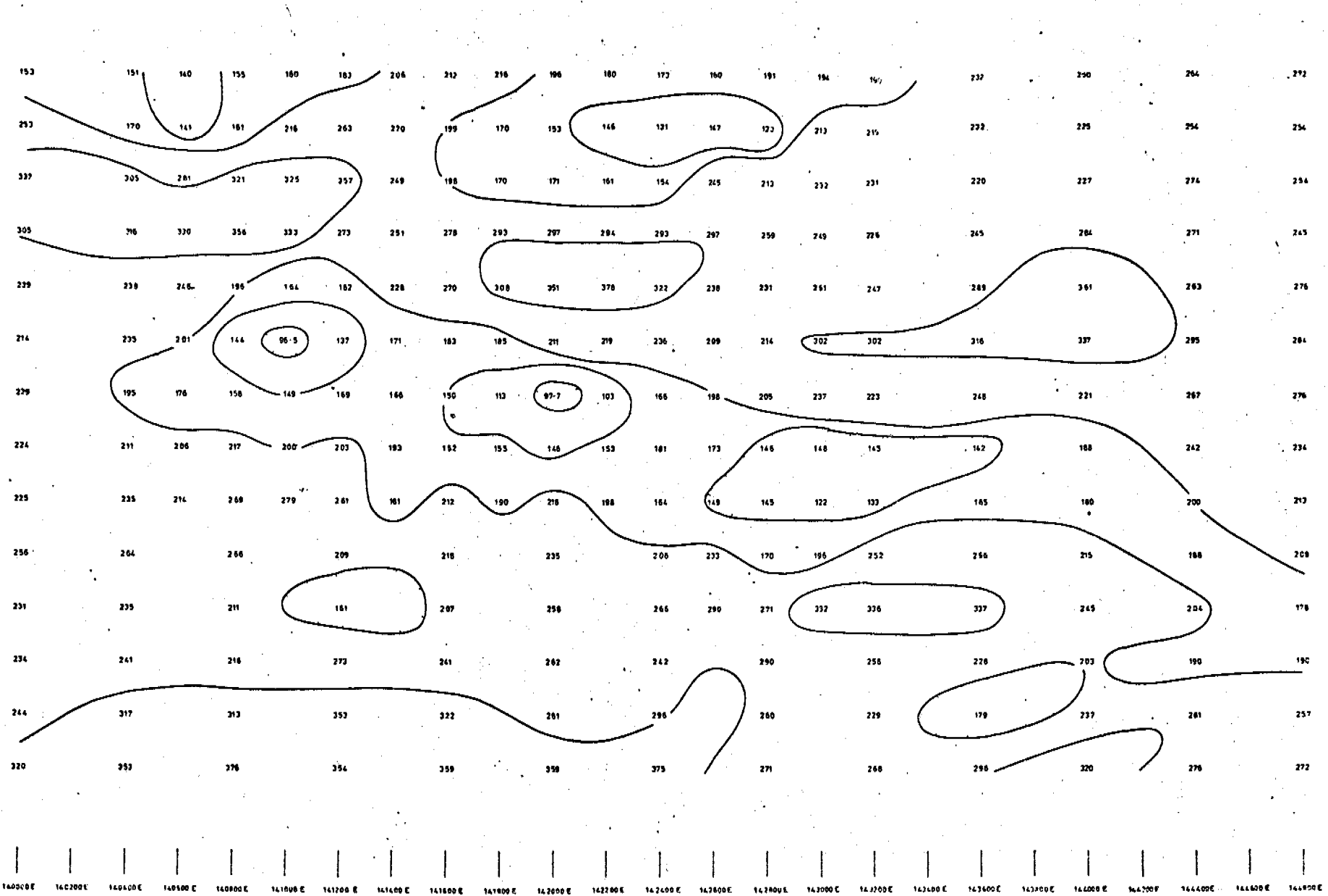
GRADIENT ARRAY SURVEY
APPARENT RESISTIVITY
mho/ft 0.0m FEET
QUARTZITE



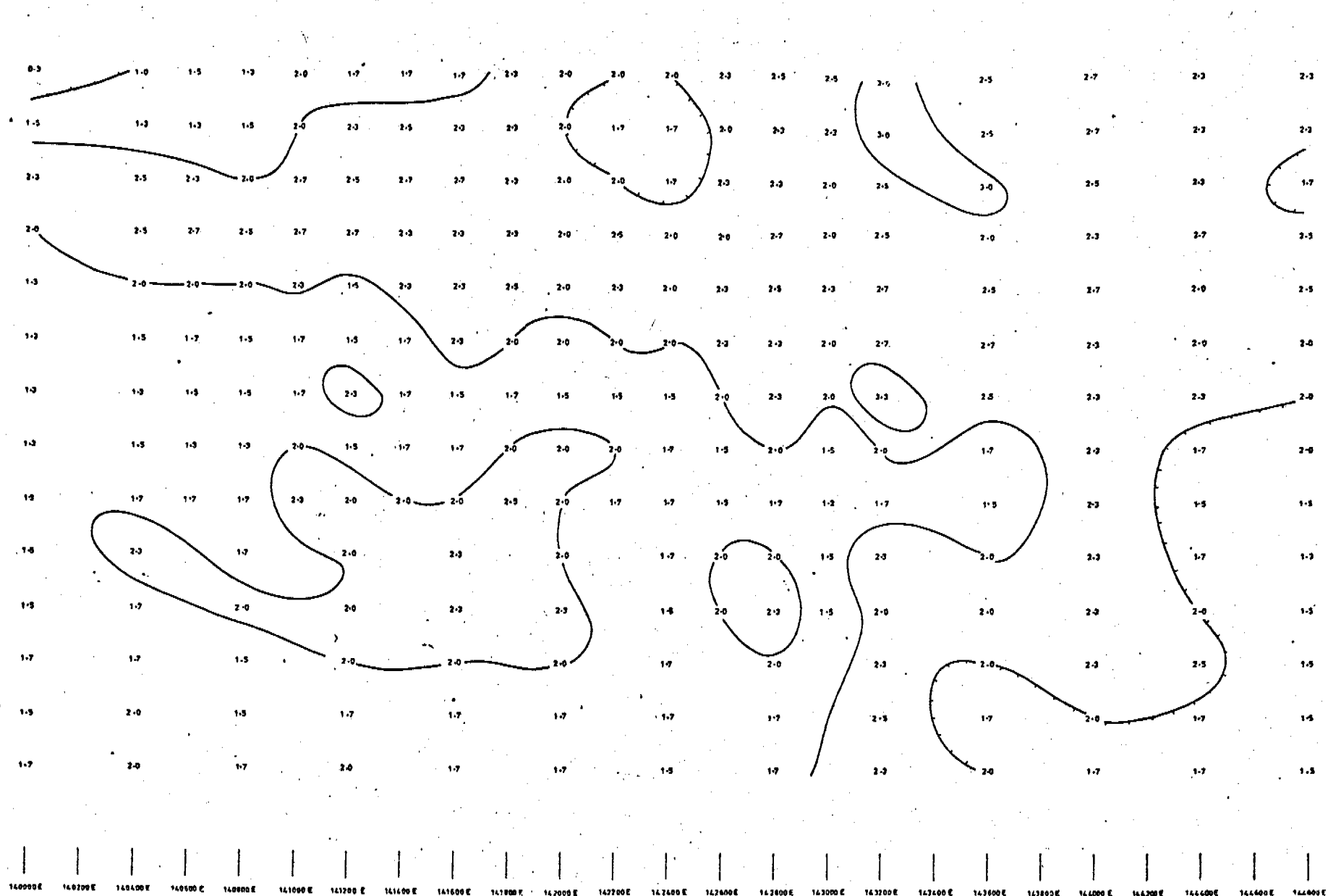
GRADIENT ARRAY SURVEY
PERCENTAGE FREQUENCY EFFECT
QUARTZITE



GRADIENT ARRAY SURVEY
METALLIC CONDUCTION FACTOR
QUARTZITE

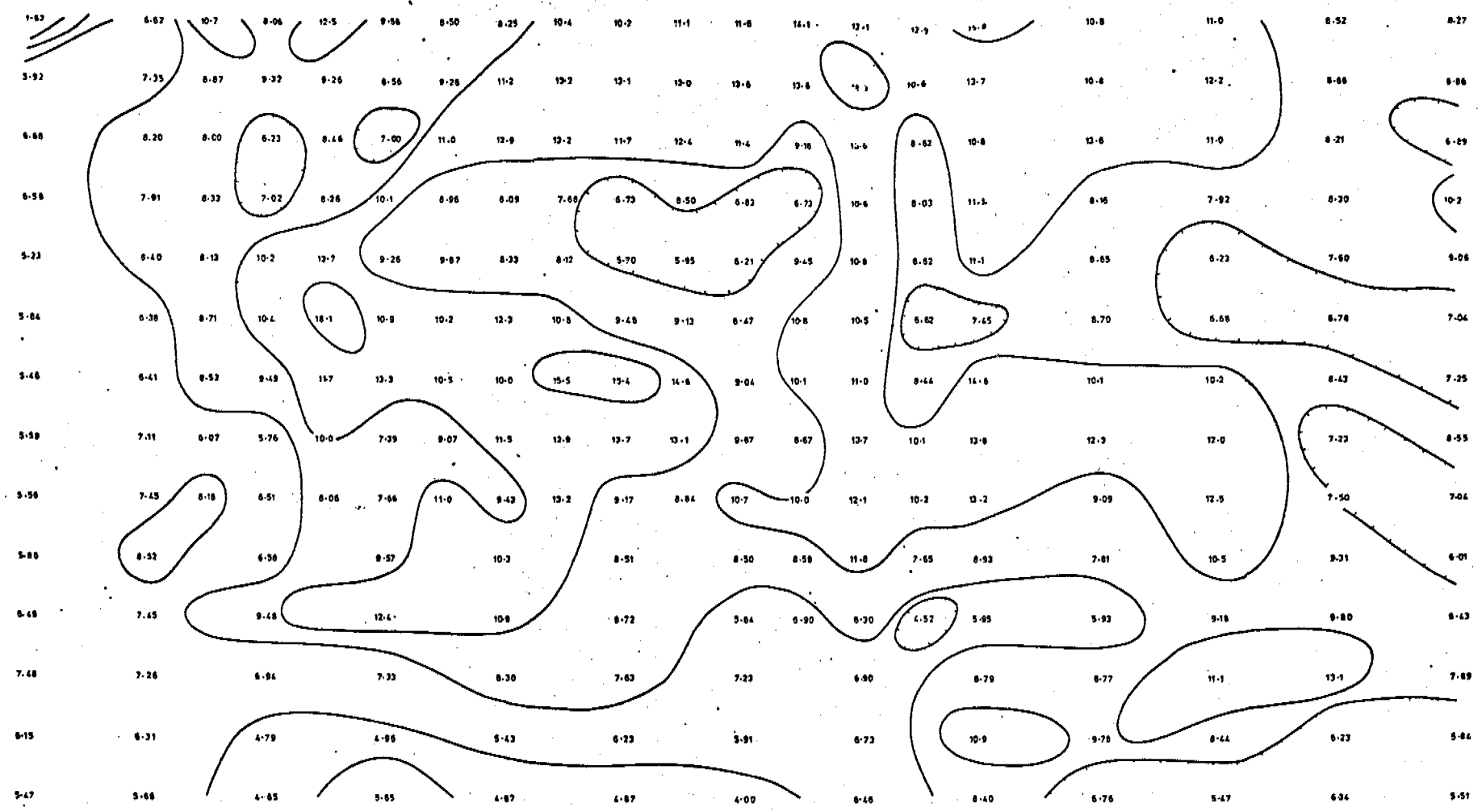


GRADIENT ARRAY SURVEY
 APPARENT RESISTIVITY
 (m)/20 OHM FEET
 BLUFF



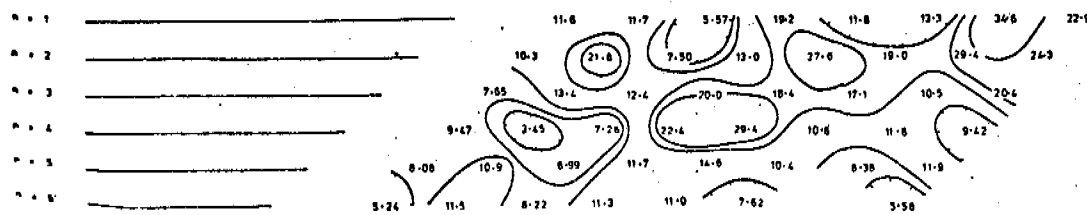
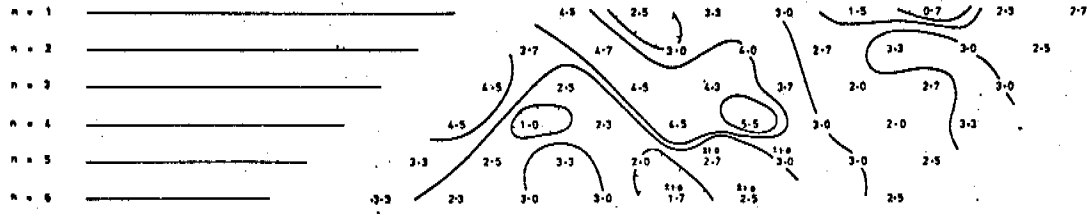
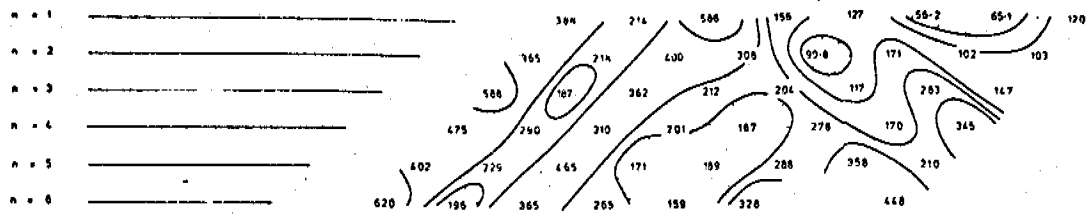
GRADIENT ARRAY SURVEY
PERCENTAGE FREQUENCY EFFECT

BLUFF



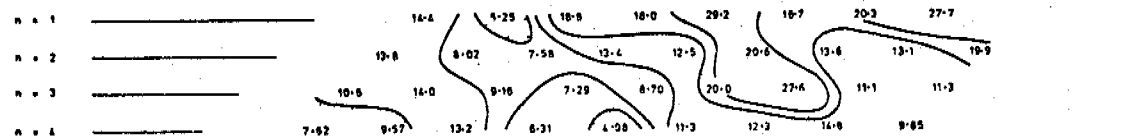
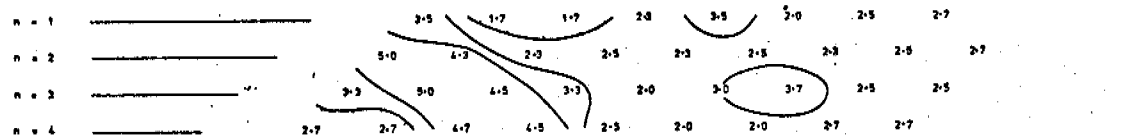
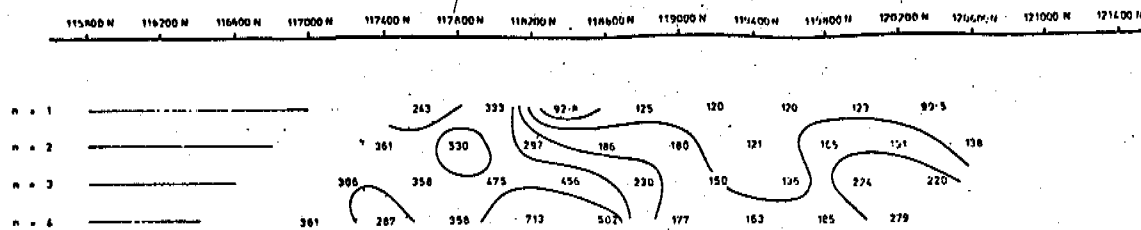
GRADIENT ARRAY SURVEY
METALLIC CONDUCTION FACILITY
BLUFF

114600 N 115000 N 115400 N 115800 N 116200 N 116600 N 117000 N 117400 N 117800 N 118200 N 118600 N 119000 N 119400 N 119800 N 120200 N 120600 N



INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION
SANDY FLAT
TRAVERSE 122200 E

W = 400 FEET
FREQUENCY 25-30 Hz
SPACING 90 TO 1475
HORIZONTAL SCALE - ONE INCH EQUAL TO 400 FEET



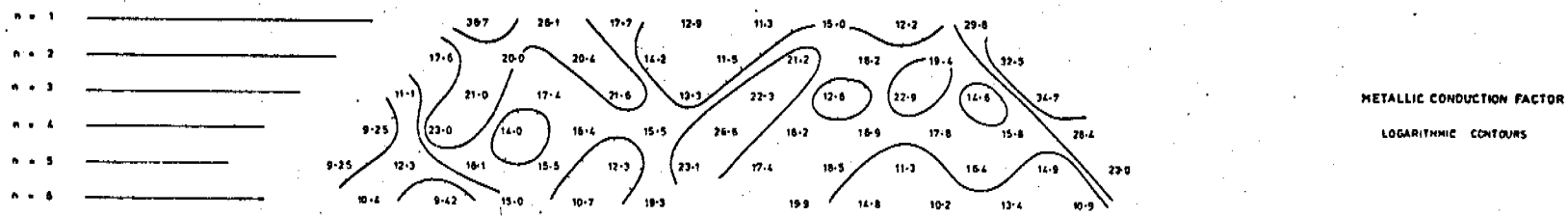
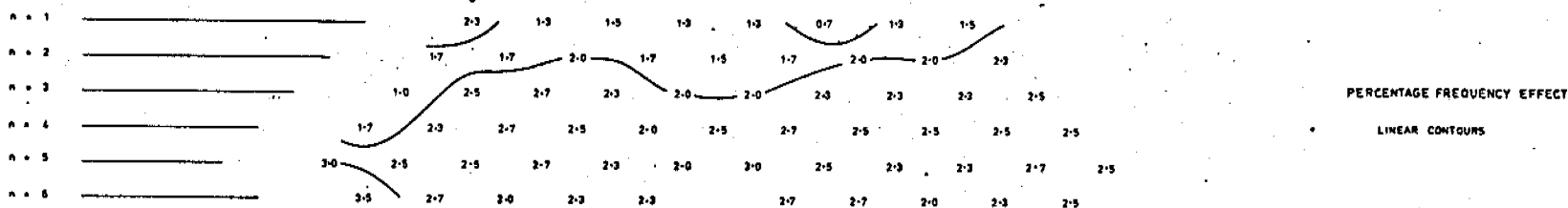
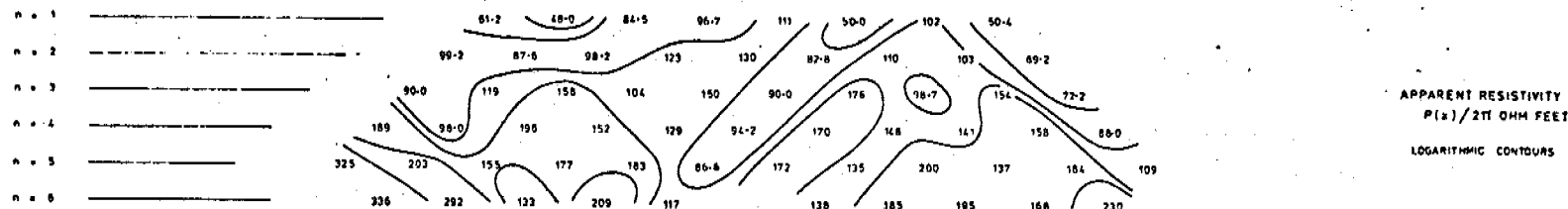
INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

SANDY FLAT

TRAVERSE 124000 E

9.400 FEET
FREQUENCIES 2.5-0.1 Hz
SURVEYED N-100-1973
HORIZONTAL SCALE - ONE INCH EQUALS 100 FEET

117600 N 117800 N 118000 N 118200 N 118400 118600 N 118800 N 119000 N 119200 N 119400 N 119600 N 119800 N 120000 N 120200 N 120400 N 120600 N 120800 N 121000 N 121200 N

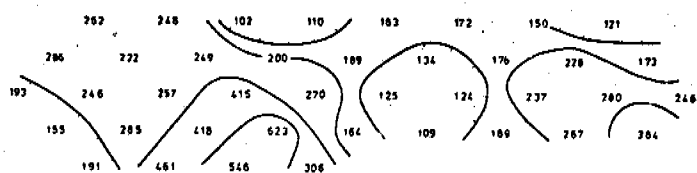
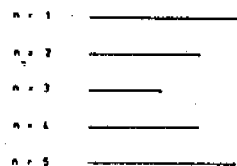


INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION
SANDY FLAT

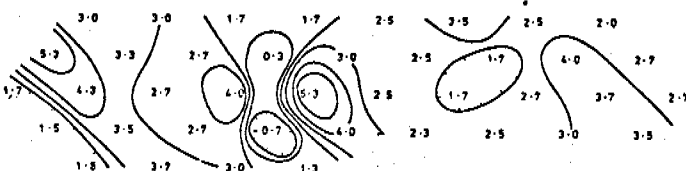
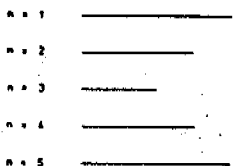
TRAVERSE 12-000E

8 = 800 FEET
FREQUENCY 1.5 0.1 Hz
SURVEYED 17-26-1973
HORIZONTAL SCALE - ONE INCH EQUAL TO 100 FEET

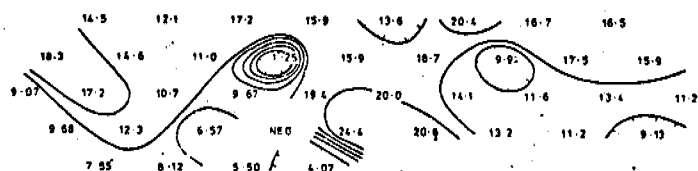
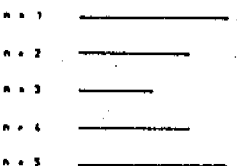
116000 N 116500 N 117000 N 117500 N 118000 N 118500 N 119000 N 119500 N 120000 N 120500 N 121000 N 121500 N 121800 N



APPARENT RESISTIVITY
 $P(a) / 2\pi$ OHM FEET
LOGARITHMIC CONTOURS



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURS



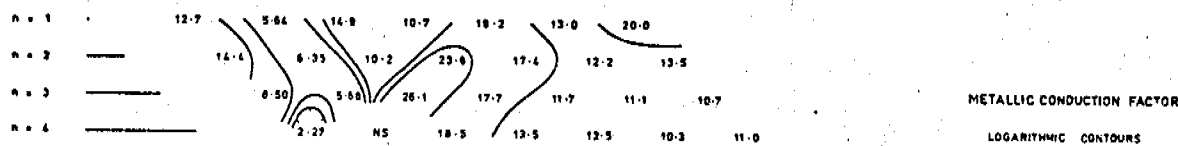
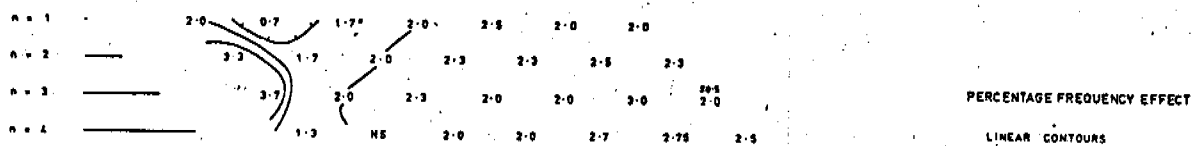
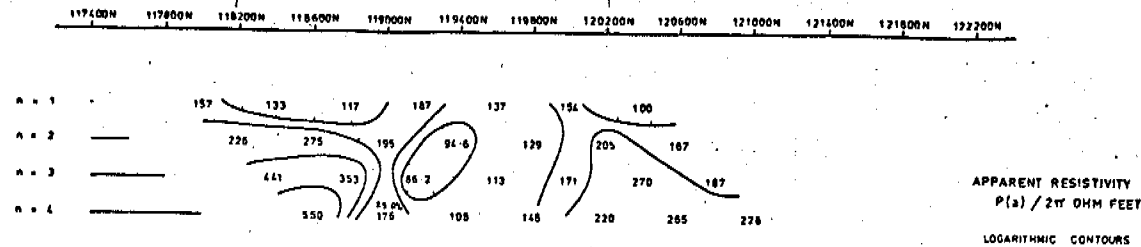
METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURS

INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

SANDY FLAT

TRAVERSE 12690E

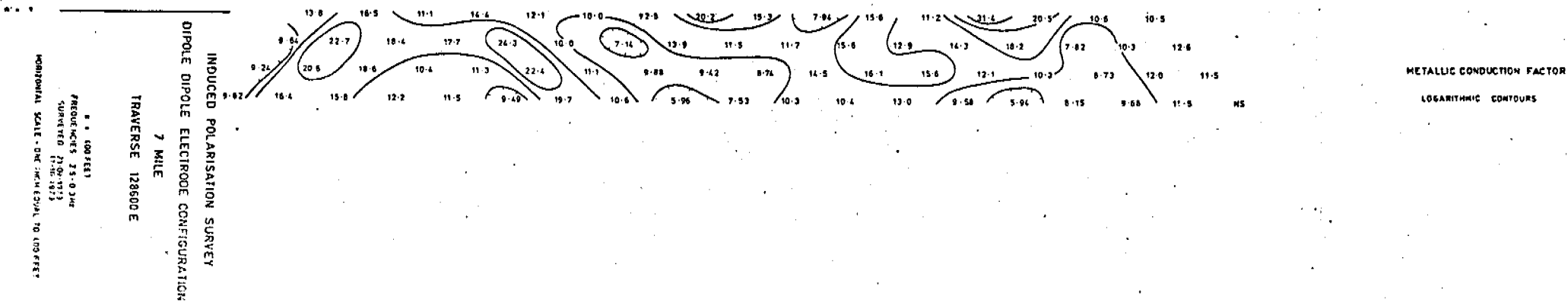
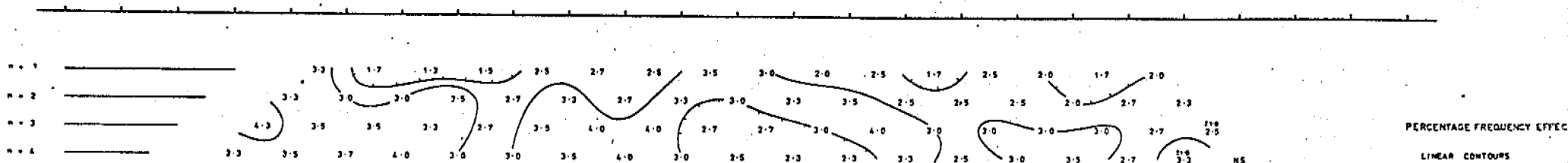
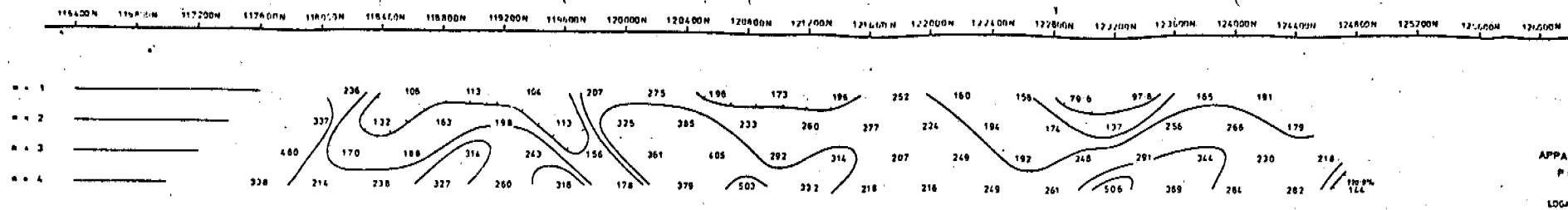
SPACING 400 FEET
PERIODICITY 2.5.0.344
NUMBER OF 20.04.973
HORIZONTAL SCALE - ONE INCH EQUAL TO 100 FEET

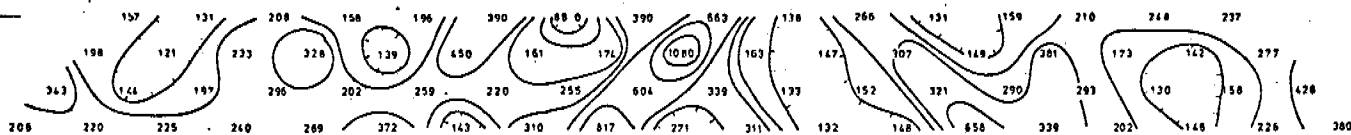
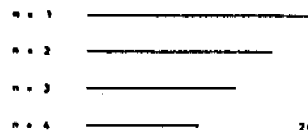
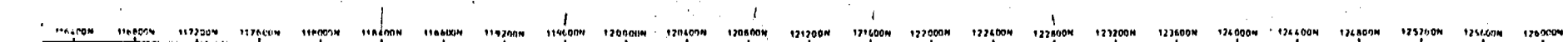


INDUCED POLARISATION SURVEY
 DIPOLE DIPOLE ELECTRODE CONFIGURATION

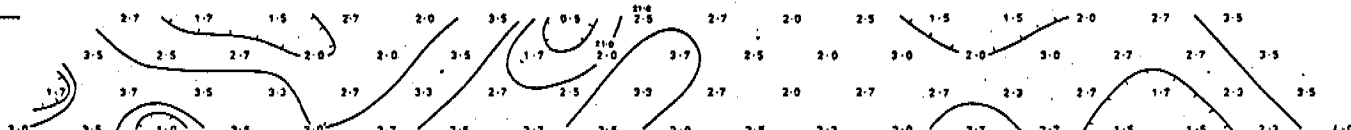
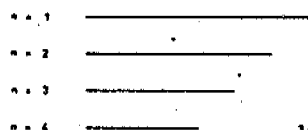
SANDY FLAT
 TRAVERSE 125200E

n = 400 FEET
 FREQUENCIES 3.5-8.3HZ
 SUPPLIED 21.96 VOLT
 HORIZONTAL SCALE - ONE INCH EQUAL TO 400 FEET

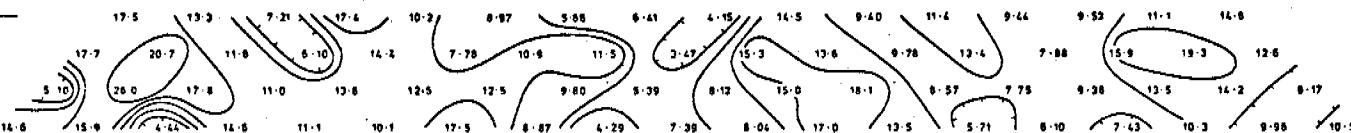




APPARENT RESISTIVITY
 $P(a)/2\pi$ OHM FEET
 LOGARITHMIC CONTOURS



PERCENTAGE FREQUENCY
 LINEAR CONTOURS

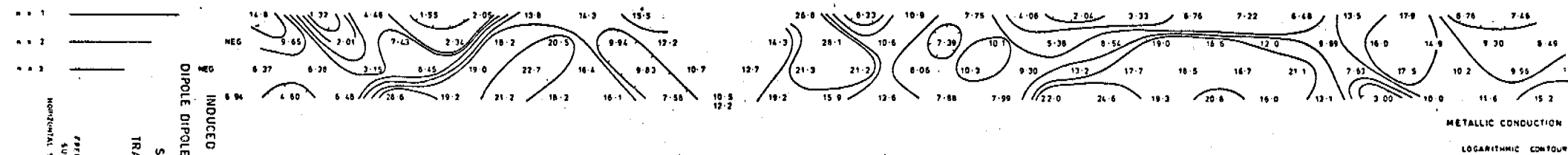
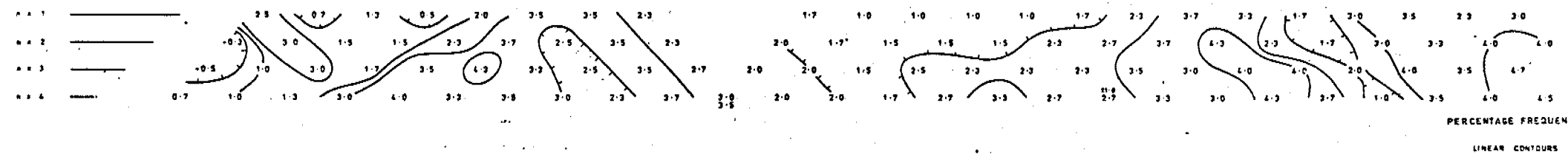
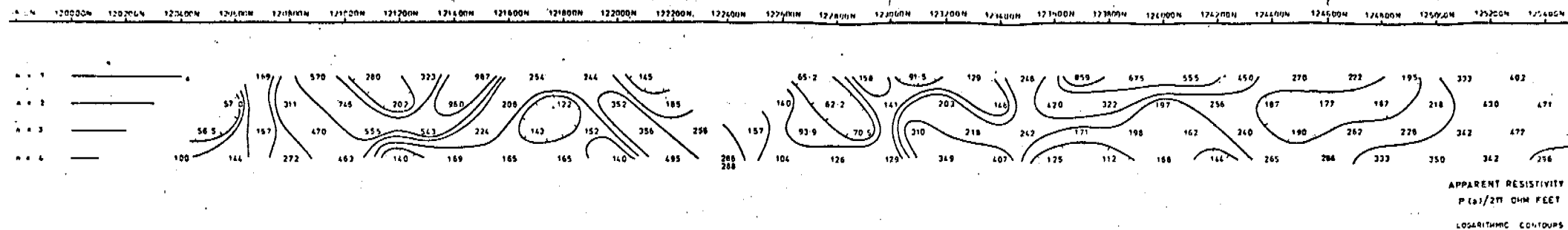


METALLIC CONDUCTION FACT
 LOGARITHMIC CONTOURS

INDUCED POLARISATION SURVEY
 DIPOLE DIPOLE ELECTRODE CONFIGURATION

7 MILE
 TRAVERSE 129200 E

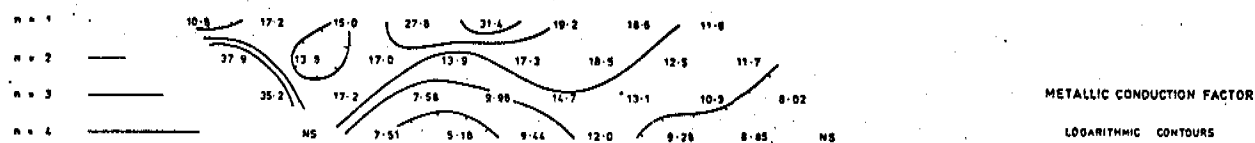
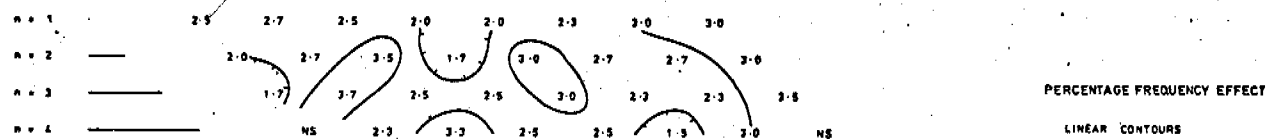
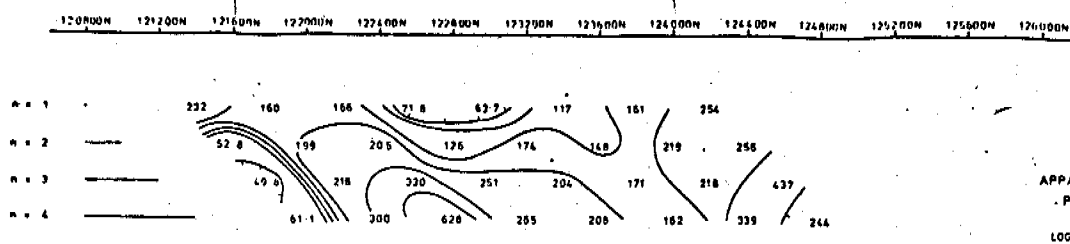
n = 400 FEET
 FREQUENCIES 3.5-0.3 Hz
 SURVEYED 19.05.1973
 10.0.20.73
 HORIZONTAL SCALE - 1000 METERS TO 1 CM



INDUCED POLARISATION SURVEY
DIPLOLE DIPOLE ELECTRODE CONFIGURATION

SEVEN MILE
TRAVERSE 123200 E

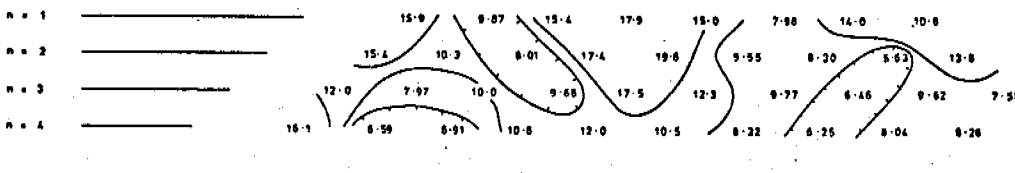
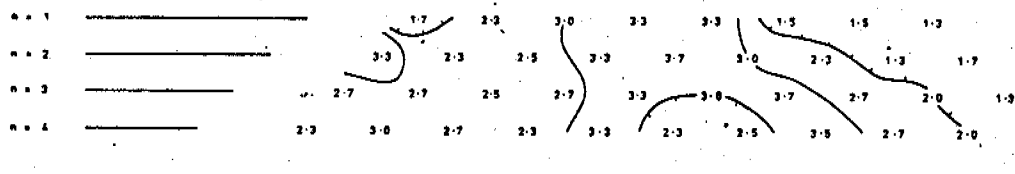
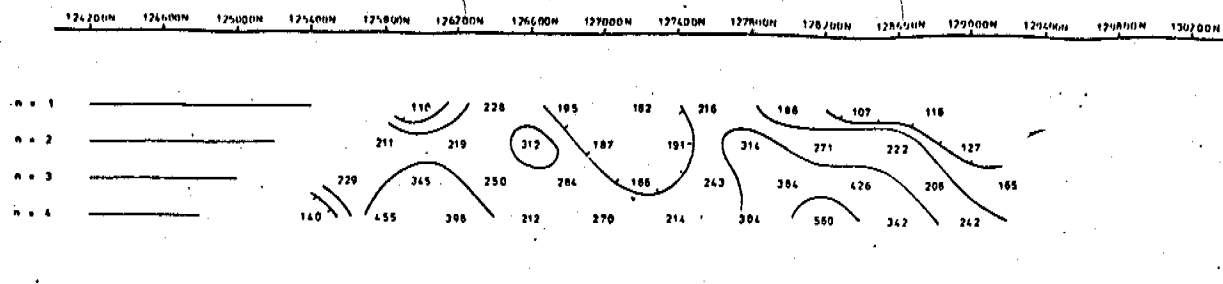
W = 1200 FEET
POTENTIALS 2.5-0.0 VDC
SPACED 0.125 TO 75
HORIZONTAL SCALE - ONE INCH EQUAL TO 200 FEET



INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

SANDY FLAI
TRAVERSE 123800 E

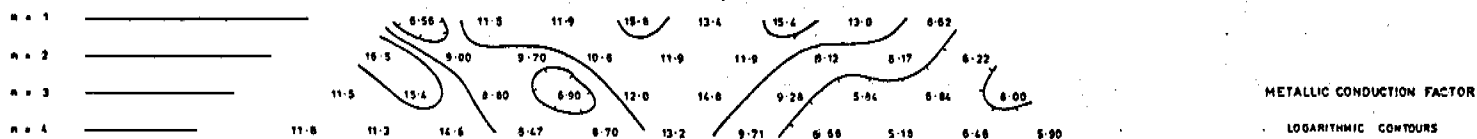
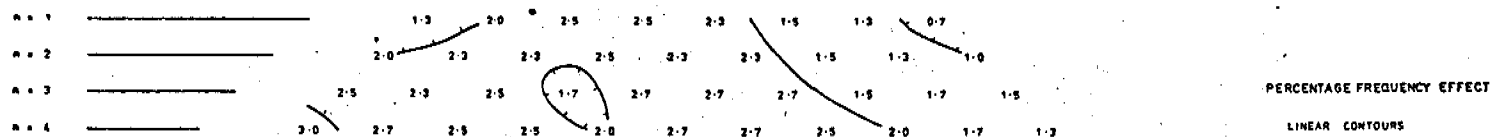
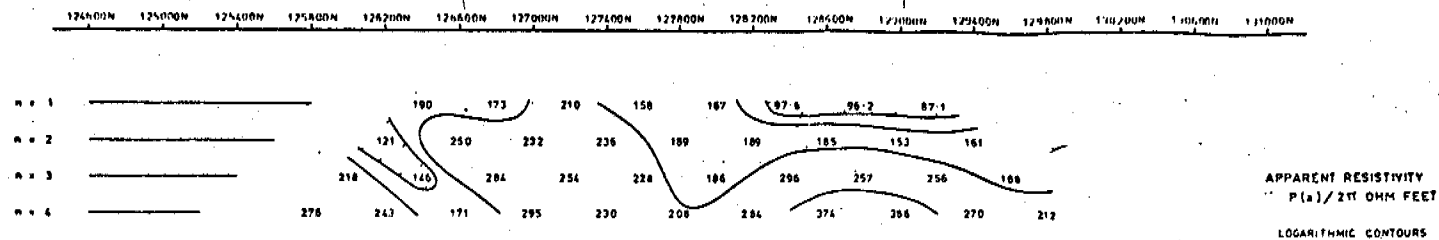
S = 400 FEET
PROM WGS 2.5 CPM
SURVEYED 27/04/87
HORIZONTAL SCALE - ONE INCH EQUAL TO 400 FEET



INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION
TITILEYS FLAT

TRAVERSE 131200 E

8 x 400 FEET
POTENTIALS 2.5-0.34V
SURVEYED 13.10.83
HORIZONTAL SCALE - ONE INCH EQUAL TO 100 FEET

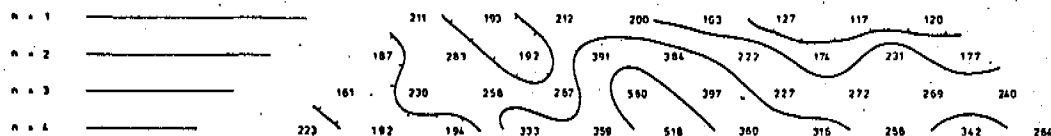


INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

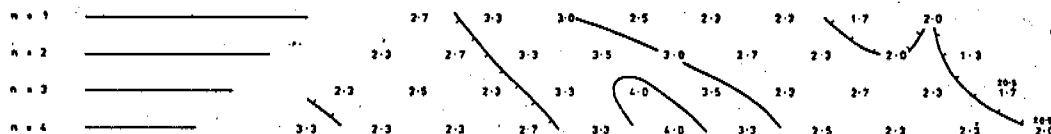
TITLEYS FLAT
TRAVERSE 132000 E

n = 400 FEET
POTENTIALS 5.25-0.34V
SURVEYED 28 DEC 1973
HORIZONTAL SCALE - ONE INCH EQUAL TO 400 FEET

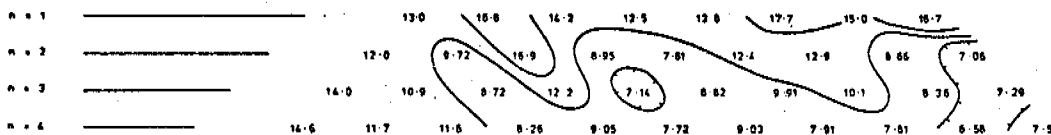
126700N 126600N 126500N 126400N 126300N 126200N 126100N 126000N 125900N 125800N 125700N 125600N 125500N 125400N 125300N 125200N 125100N 125000N



APPARENT RESISTIVITY
 $P(a)/2\pi$ OHM FEET
LOGARITHMIC CONTOURS



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURS



METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURS

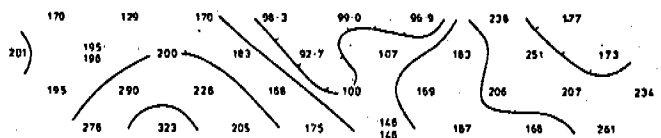
INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION
HILLEY'S FLAT

TRAVERSE 132800E

2 x 400 FEET
APPROX. 25-0.31m
SUBMITTED TO 10-1-73
HORIZONTAL SCALE - ONE INCH EQUALS 10 MET. FEET

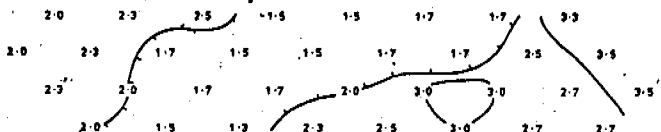
122000N 122400N 122800N 123200N 123600N 124000N 124400N 124800N 125200N 125600N 126000N 126400N 126800N 127200N

n = 1
n = 2
n = 3
n = 4



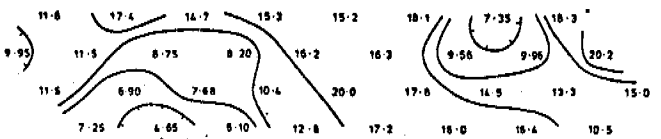
APPARENT RESISTIVITY
 $P(a) / 2\pi$ OHM FEET
LOGARITHMIC CONTOURS

n = 1
n = 2
n = 3
n = 4



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURS

n = 1
n = 2
n = 3
n = 4

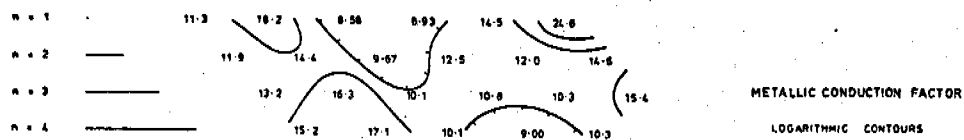
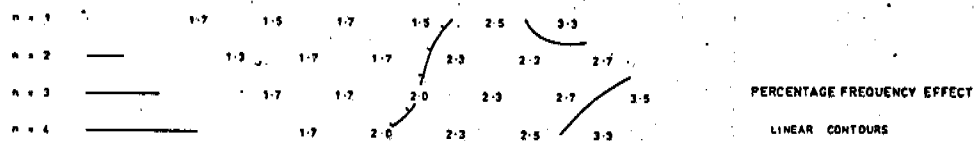
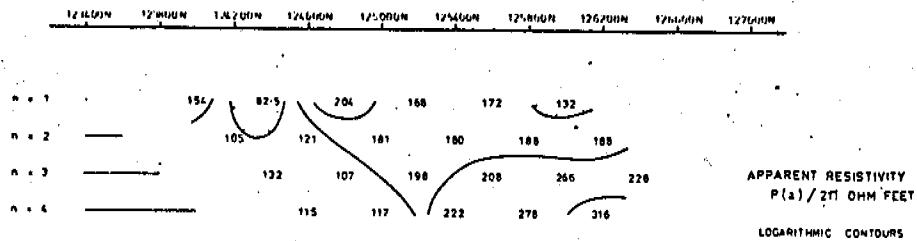


METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURS

INDUCED POLARISATION SURVEY
DIPLOLE DIPOLE ELECTRODE CONFIGURATION

BLUFF
TRAVERSE 137200E

8 x 40 FEET
PIL DIRECTION 2.5-0.20V
SURVEYED 10-10-1977
HORIZONTAL SCALE - ONE INCH EQUALS 100 FEET

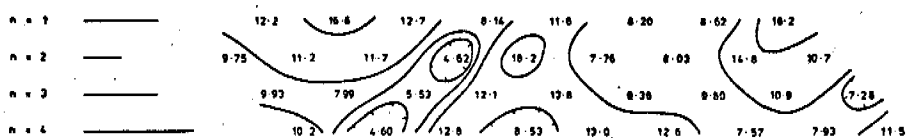
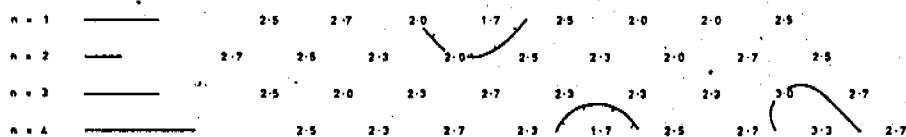
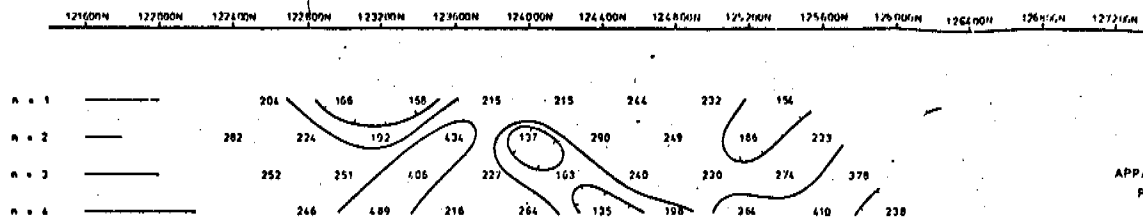


INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

BLUFF

TRAVERSE 138000 E

n = 100 FEET
FREQUENCIES 2.5-9.3 Hz
SPACING 16-10-1973
HORIZONTAL SCALE - ONE INCH EQUAL 10 000 FEET



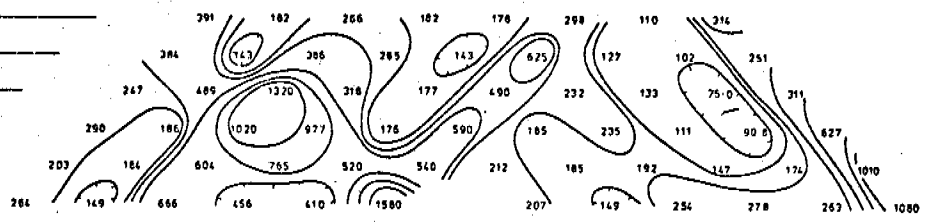
INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

BLUFF
TRAVERSE 141800 E

4 x 400 FEET
FREQUENCY 25-0.3 Hz
SURVEYED 22-05-1973
HORIZONTAL SCALE - ONE INCH EQUAL TO 100 FEET

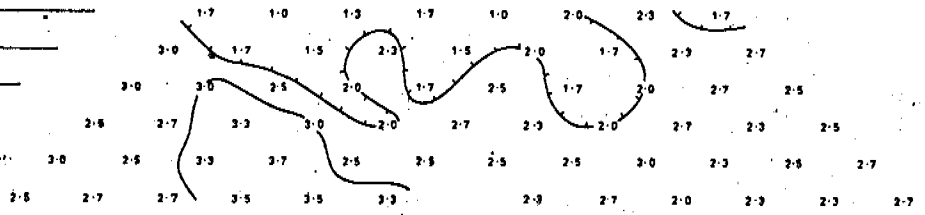
11600M 11700M 117200M 117400M 117600M 117800M 118000M 118200M 118400M 118600M 118800M 119000M 119200M 119400M 119600M 119800M 120000M 120200M 120400M 120600M 120800M

n = 1
n = 2
n = 3
n = 4
n = 5
n = 6



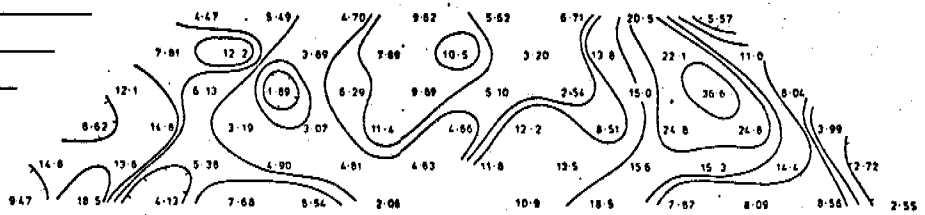
APPARENT RESISTIVITY
 $P(z)/2\pi$ OHM FEET
LOGARITHMIC CONTOURS

n = 1
n = 2
n = 3
n = 4
n = 5
n = 6



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURS

n = 1
n = 2
n = 3
n = 4
n = 5
n = 6



METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURS

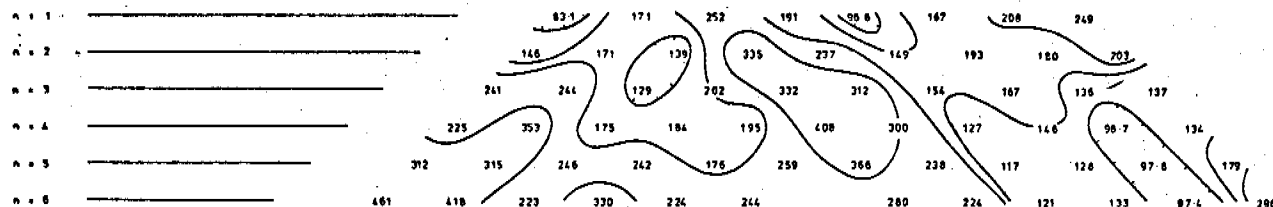
INDUCED POLARISATION SURVEY
DIPOLE DIPOLE ELECTRODE CONFIGURATION

TRAVERSE 145500E

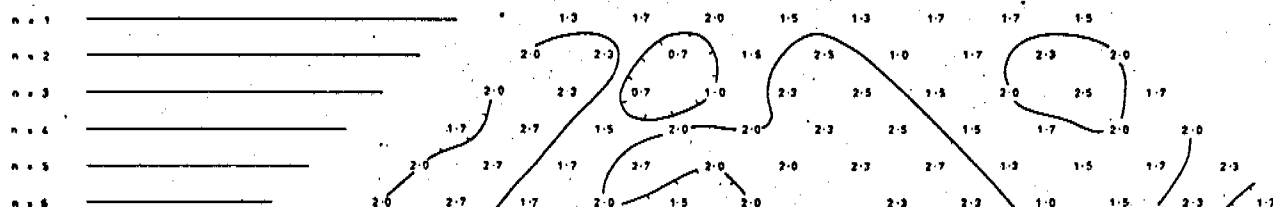
WANYI

z = 200 FEET
FREQUENCIES 3.5-134 Hz
SPACED 250 M
APPARENT SCALE - OHM METERS PER FOOT
FILE NO 35

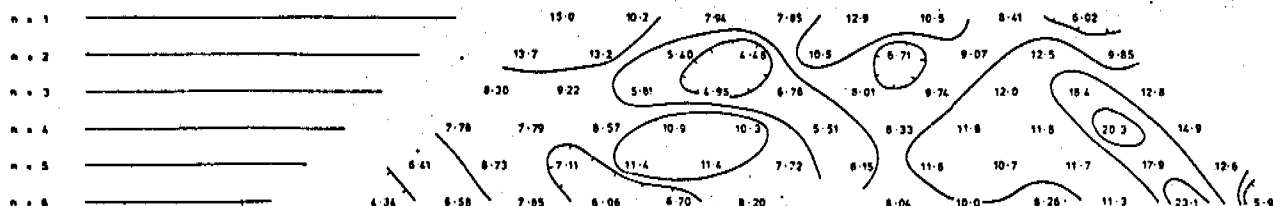
115600N 115800N 116000N 116200N 116400N 116600N 116800N 117000N 117200N 117400N 117600N 117800N 118000N 118200N 118400N 118600N 118800N 119000N 119200N 119400N 119600N



APPARENT RESISTIVITY
P(a)/2π OHM FEET
LOGARITHMIC CONTOURS



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURS



120200 N

120000 N

119800 N

119600 N

119400 N

119200 N

119000 N

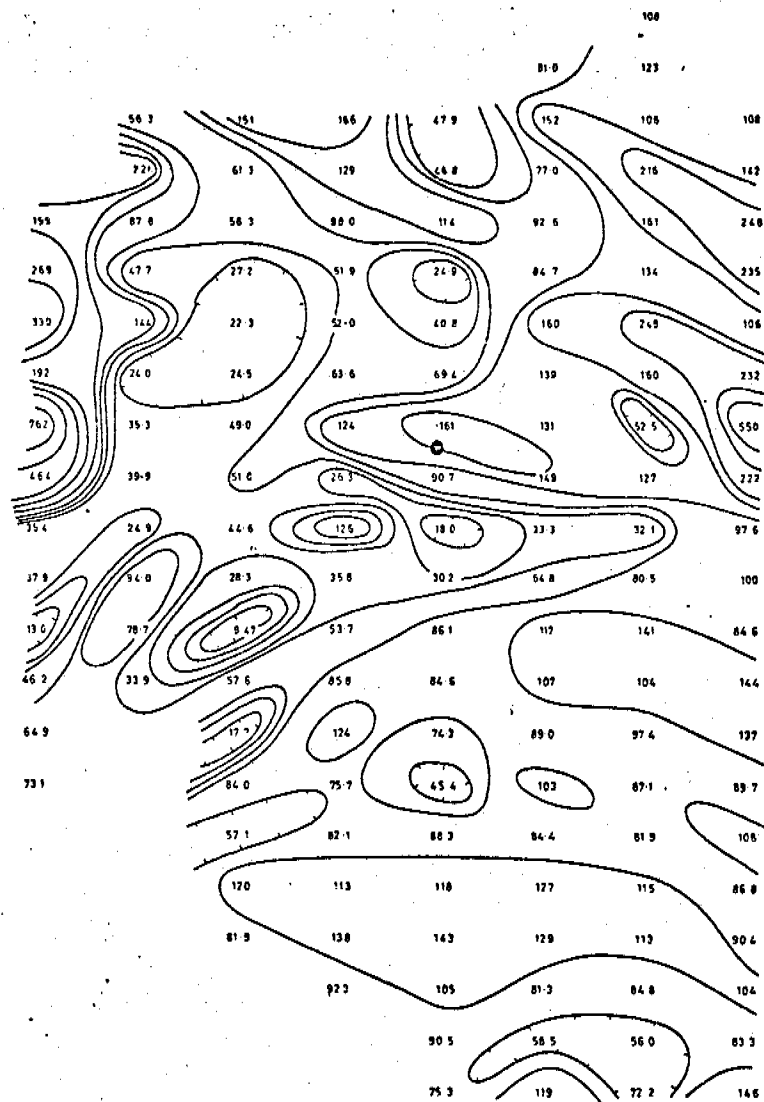
118800 N

118600 N

118400 N

118200 N

118000 N



APPARENT RESISTIVITY
P(a)/2π OHM FEET

LOGARITHMIC CONTOURING

MISE A LA MASSE

SANDY FLAT

119300N 124000E

Z = 300 ft.

SURVEYED 16/17-10-77

FIG. No. 28

120800 N

120600 N

120400 N

120200 N

120000 N

119800 N

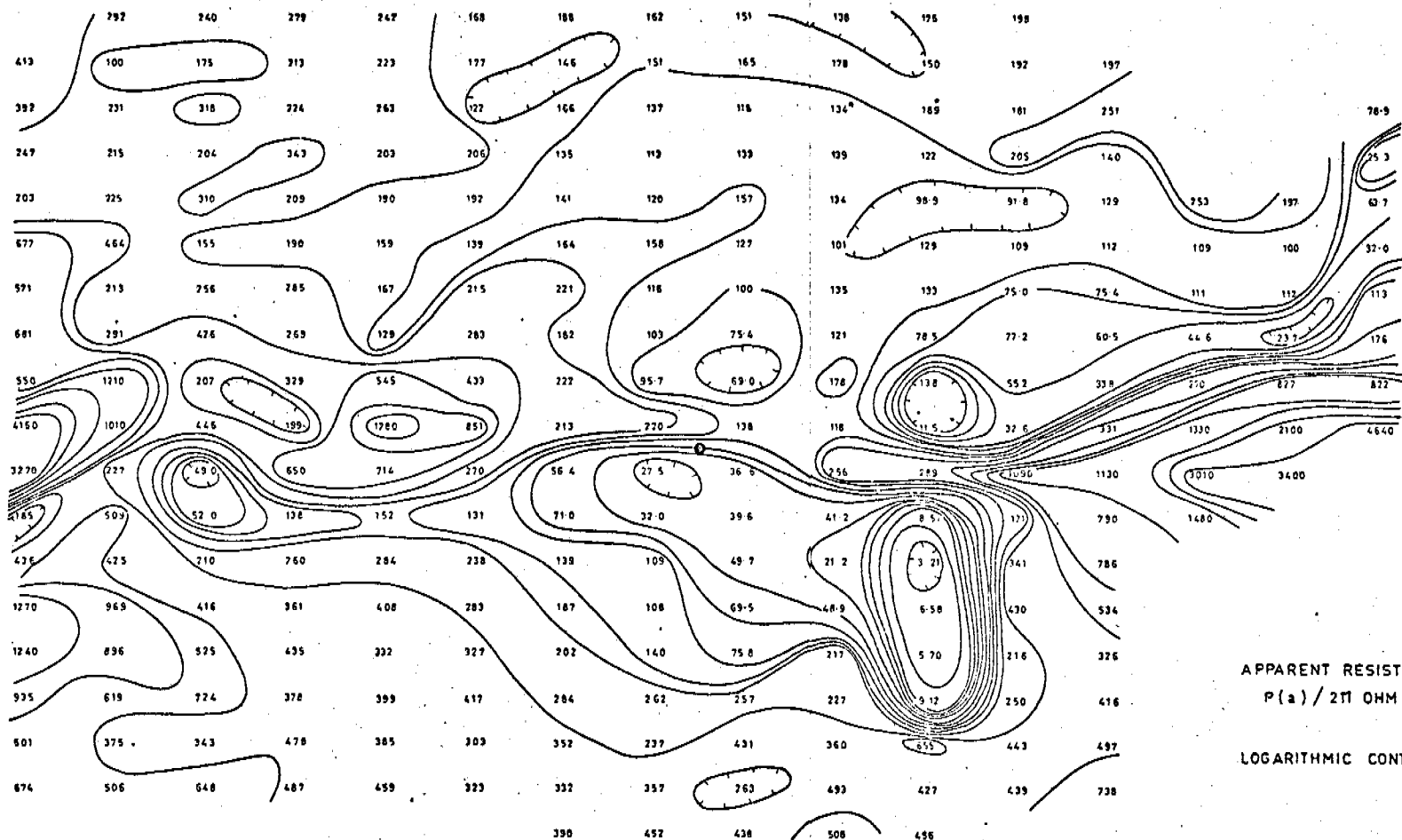
119600 N

119400 N

119200 N

119000 N

118800 N



APPARENT RESISTIVITY
 $P(a) / 2\pi$ OHM FEET

LOGARITHMIC CONTOURING

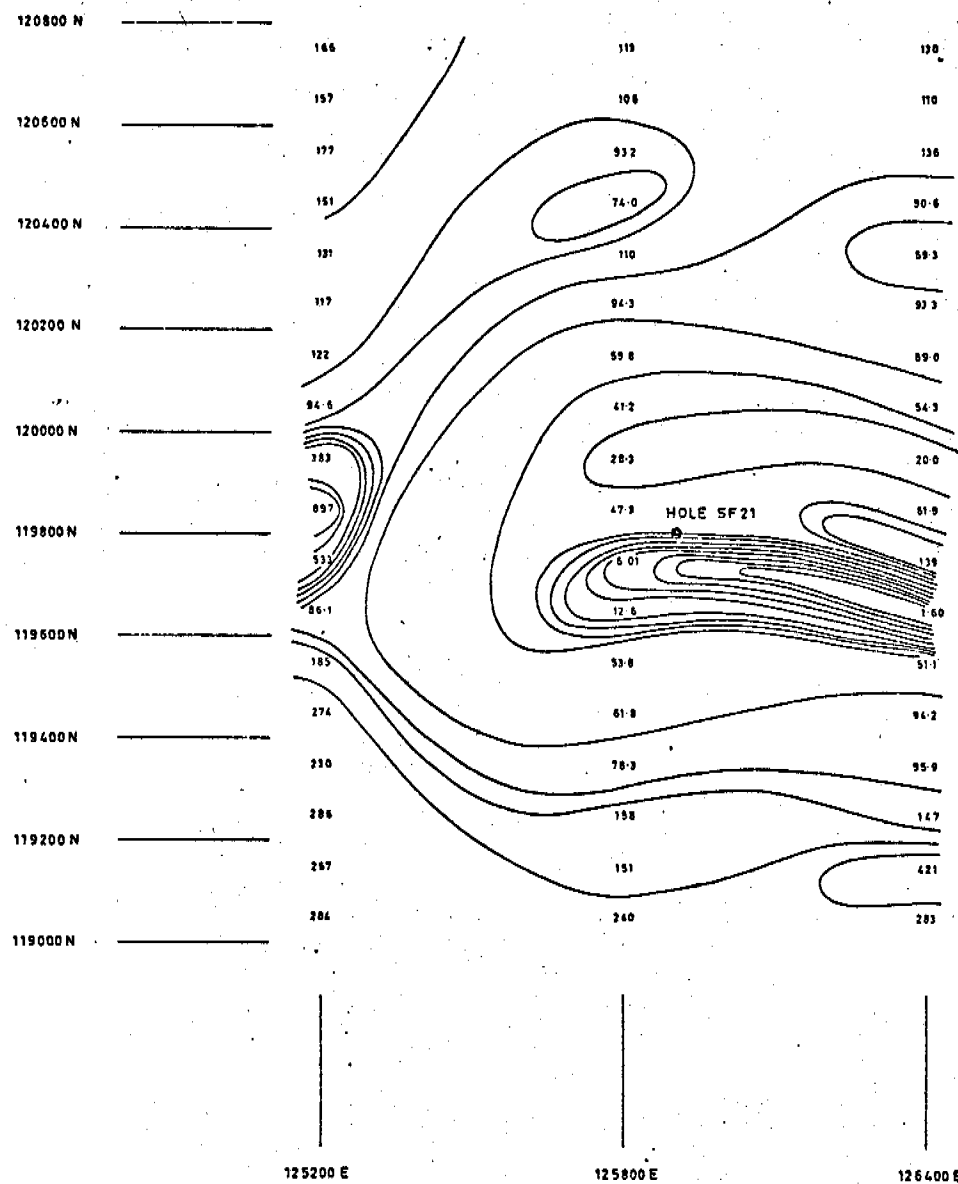
124400 E 124600 E 124800 E 125000 E 125200 E 125400 E 125600 E 125800 E 126000 E 126200 E 126400 E 126600 E 126800 E 127000 E 127200 E 127400 E

WISE A LA MASSE

SANDY FLAT
 119800 N 125900 E

Z = 360 ft.

SURVEYED 27/29-10-73



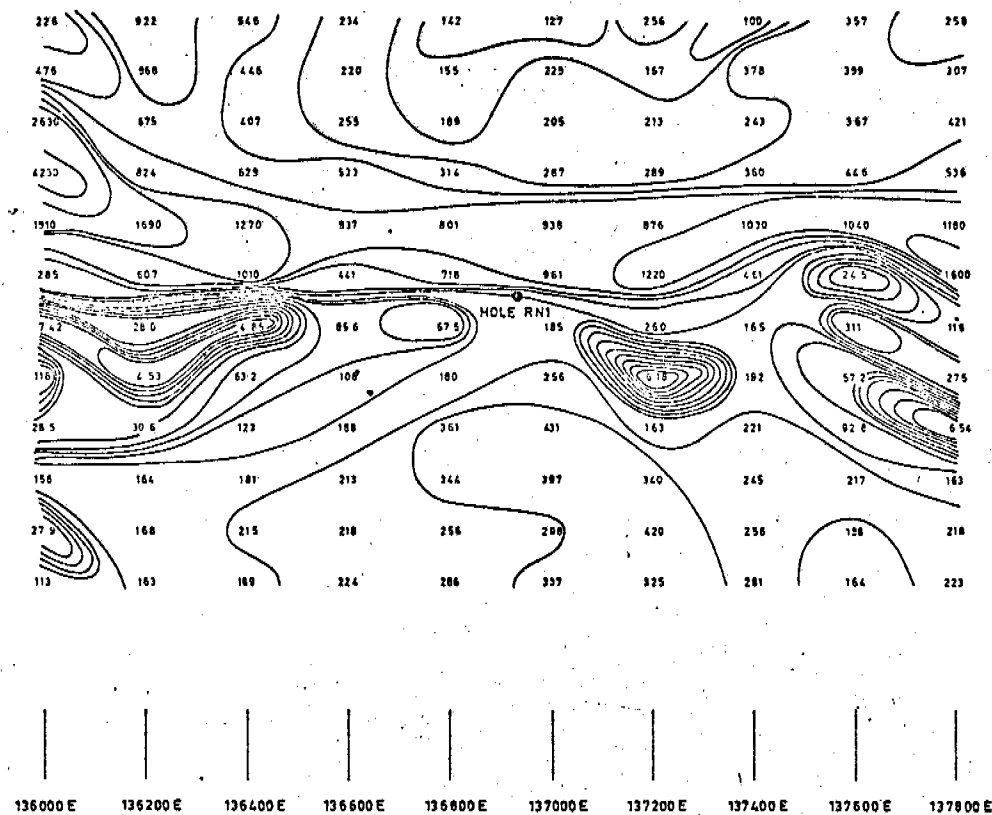
APPARENT RESISTIVITY
 $P(a) / 2\pi$ OHM FEET

LOGARITHMIC CONTOURING

MISE A LA MASSE
 SANDY FLAT
 119800N 125900E
 Z = 160 ft.

SURVEYED 29-10-73

125600 N
125400 N
125200 N
125000 N
124800 N
124600 N
124400 N



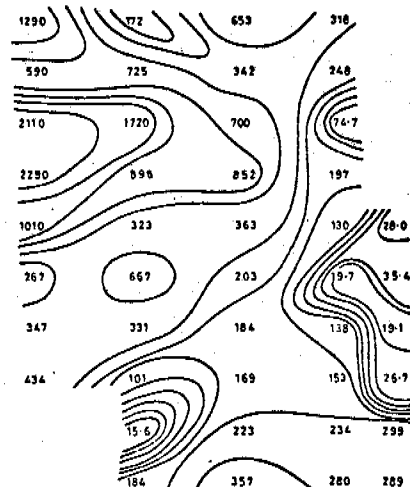
APPARENT RESISTIVITY
 $P(a)/2\pi$ OHM FEET

LOGARITHMIC CONTOURING

MISE A LA MASSE
ROMAN NOSE
125100 N 136925 E
Z = 350 ft.

SURVEYED 29/30-11-73

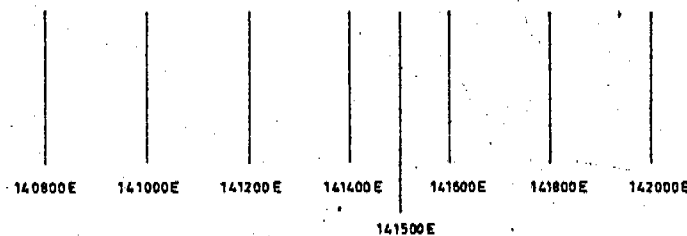
124000 N
123800 N
123600 N
123400 N
123200 N
123000 N



HOLE EB1

APPARENT RESISTIVITY
 $P(a) / 2\pi$ OHM FEET

LOGARITHMIC CONTOURING

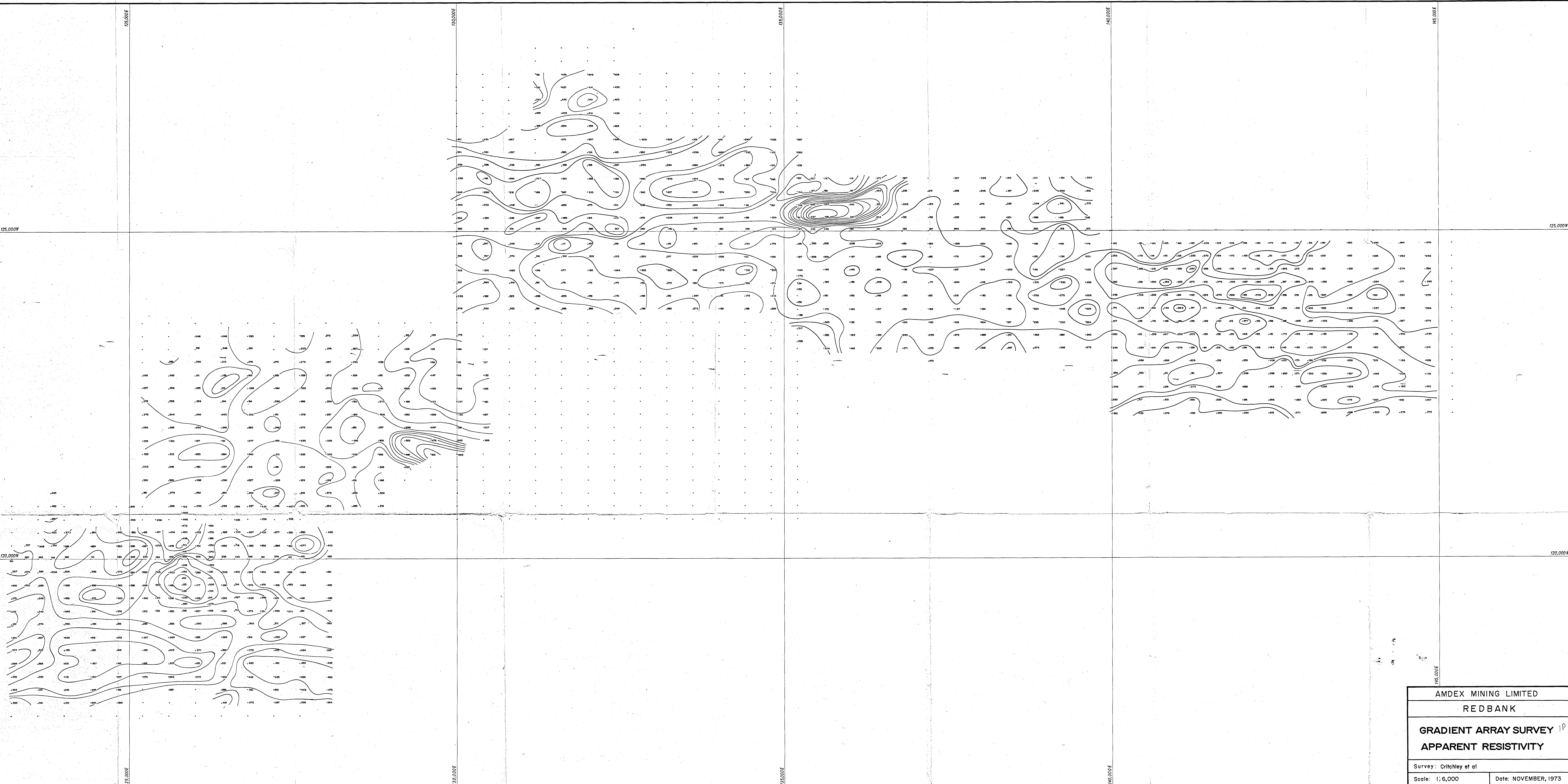


MISE A LA MASSE
BLUFF

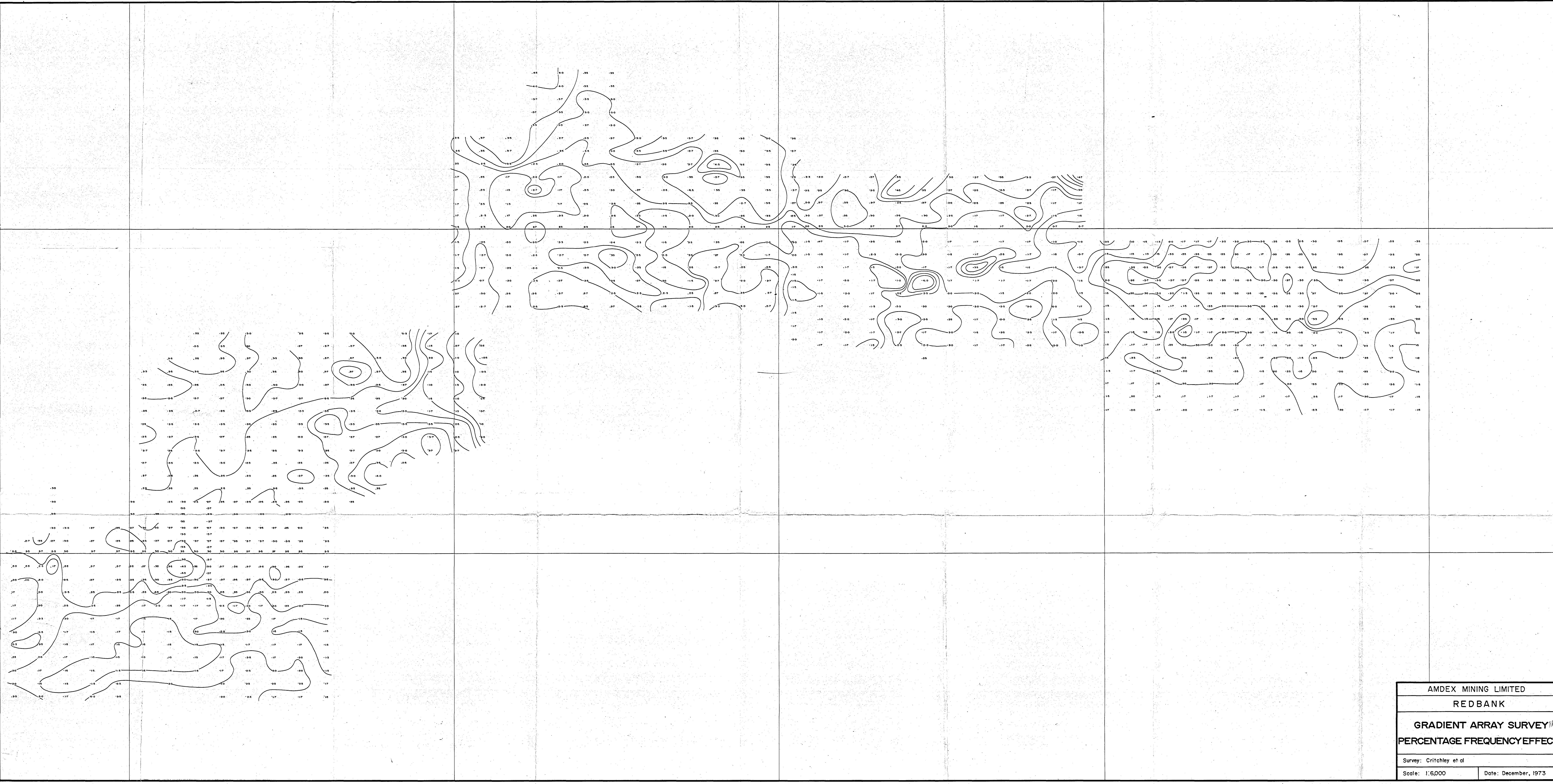
123700 N 141920 E
Z = 130 ft.

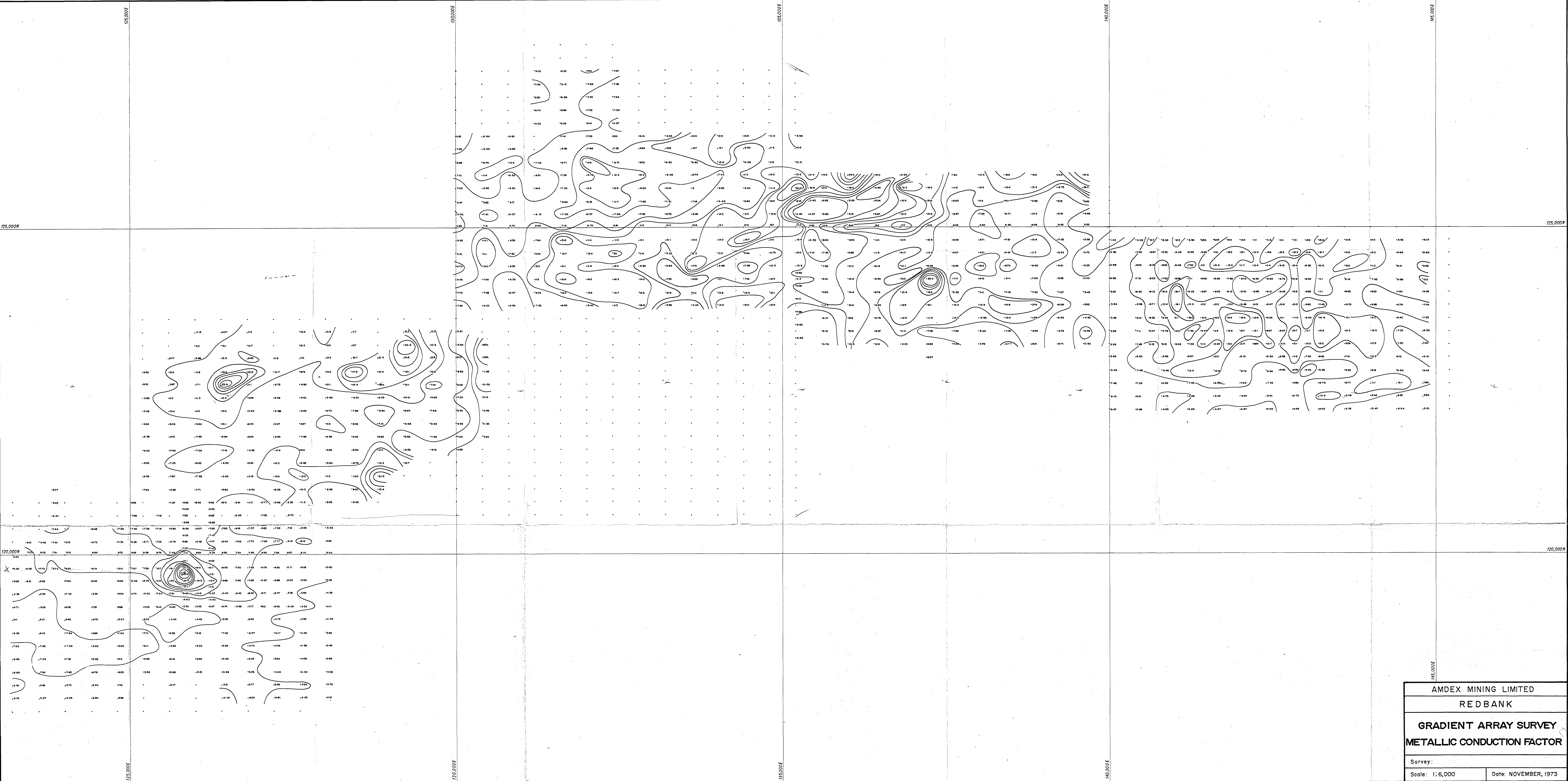
SURVEYED 31-10-73

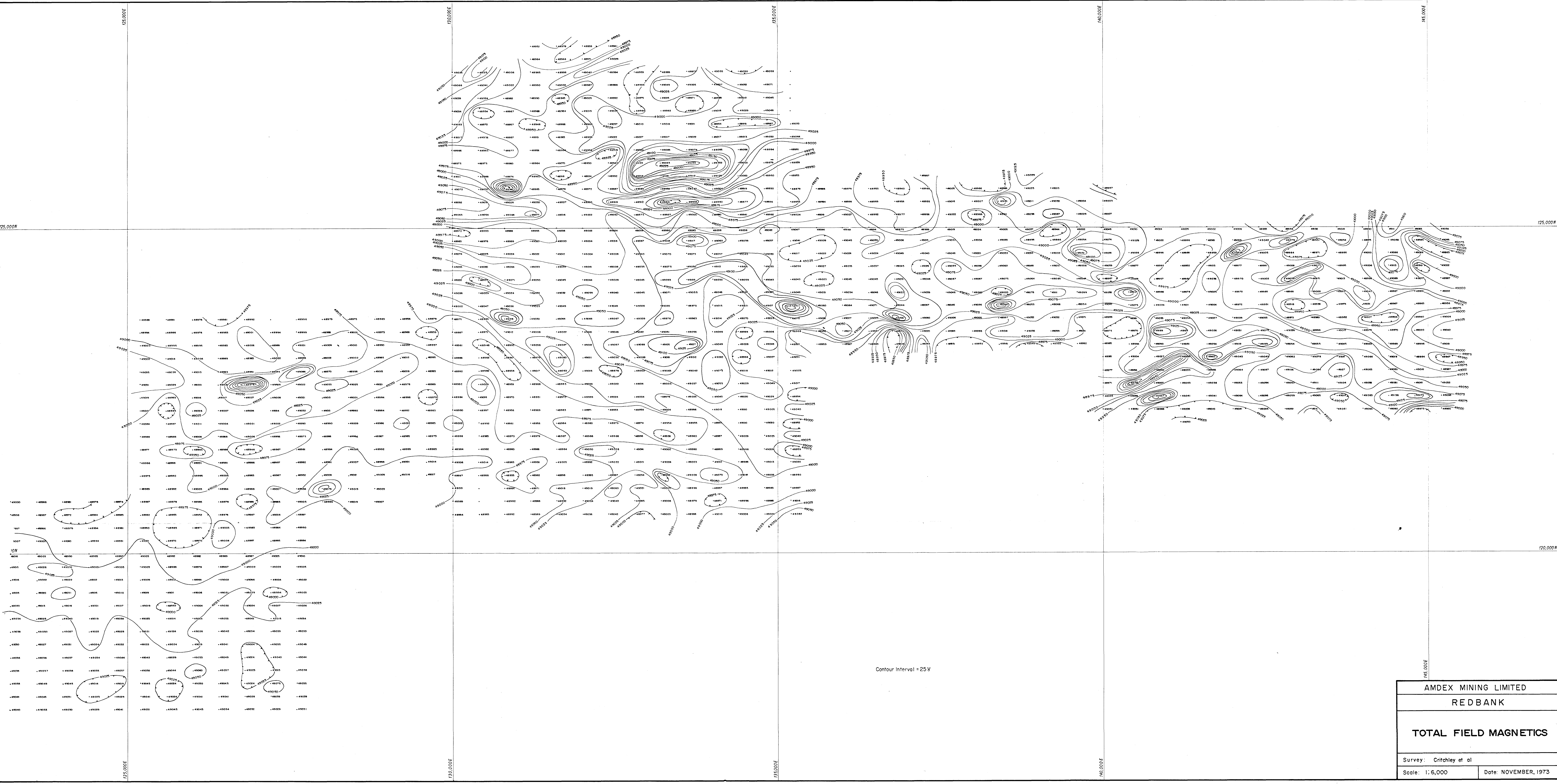
FIG. No. 42



AMDEX MINING LIMITED	
REDBANK	
GRADIENT ARRAY SURVEY	
APPARENT RESISTIVITY	
Survey: Critchley et al	
Scale: 1:6,000	Date: NOVEMBER, 1973







Contour Interval = 25 ft

AMDEX MINING LIMITED	
REDBANK	
TOTAL FIELD MAGNETICS	
Survey: Critchley et al	
Scale: 1:6,000	Date: NOVEMBER, 1973

