

GEOPHYSICAL REPORT

MAGNETIC AND ELECTROMAGNETIC SURVEYS

OF

Jackpine	(L4360)
Wann Fr No. 2	(L4656)
Wann Fr	(L4655)
Alamo	(L4669)
Anyox	(L4657)
Rodeo	(L4670)
Juanitu	(L4654)

MINERAL CLAIMS

LOCATED

NEAR THE MOUTH OF THE WANN RIVER

59° - 134° N.E.

IN THE ATLIN MINING DIVISION

BY

ROBERT J. CATHRO

FOR

IDAHO SILVER MINES LTD. (N.P.L.)

VANCOUVER, B.C.

DATES OF SURVEY MARCH 20 TO MARCH 28, 1968. (INCLUSIVE)



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Map Folder Contents

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Grid Area # 2	Plans:	Electromagnetic Survey, Profiles Magnetometric Survey, Profiles Magnetometric Survey, Contours Claim & Grid Location Map

INTRODUCTION

In March, 1968, Idaho Silver Mines Limited (N.P.L.) requested that Robert J. Cathro, P. Engineer, carry out linecutting and a ground Electromagnetic and Magnetic Survey of the following Crown Granted Mineral Claims:

Brownie No. 5	(L4653)
Pinto	(L4671)
Monte Fr	(L4667)
Granby	(L4669)
Jackpine	(L4360)
Wann Fr No. 2	(L4656)
Wann Fr	(L4655)
Alamo	(L4669)
Anyox	(L4657)
Rodeo	(L4670)
Juanitu	(L4654)

in the Atlin Mining Division.

The claims chosen for special investigation were as follows:

Jackpine	(L4360)
Wann Fr No. 2	(L4656)
Wann Fr	(L4655)
Alamo	(L4669)
Anyox	(L4657)
Rodeo	(L4670)
Juanitu	(L4654)

Mr. Cathro was commissioned to act as consultant and prime contractor in the performance of the work. Mr. Cathro selected the areas to be investigated and engaged the following Companies to participate in the performance of the survey:

1. Exploration Geophysics (Yukon) Limited
2. White, Hosford & Impey Limited

The duties of these Companies are described in the section titled Personnel.

LOCATION OF SURVEY AND MINERAL CLAIMS

The linecutting and Magnetic and Electromagnetic Survey covered:

Jackpine	(L4360)
Wann Fr No. 2	(L4656)
Wann Fr	(L4655)
Alamo	(L4669)
Anyox	(L4657)
Rodeo	(L4670)
Juanitu	(L4654)

Crown Granted Mineral Claims located on an undulating, quite heavily timbered area close to the mouth of the Wann River where it enters the Taku Arm of Tagish Lake, approximately coordinates $59^{\circ} 27' N. 134^{\circ} 15' W.$, Map Sheet 104-M (Skagway).

PERSONNEL

Mr. Cathro selected White, Hosford & Impey Limited, Land Surveyors, of Whitehorse, Yukon Territory, to perform the linecutting and supply the camp and Exploration Geophysics (Yukon) Limited to supply the Electromagnetic and Magnetic instruments and operators. Mr. Cathro, three linecutters, and two geophysical operators left by a Beaver aircraft from Atlin, B.C., March 20th, to commence the survey. After the areas to be studied had been located, Mr. Cathro returned, the linecutters and geophysical operators completed the work and returned to Whitehorse on March 28th.

<u>Company Name</u>	<u>Function</u>	<u>Name</u>	<u>Designated Survey</u>
White, Hosford & Impey Ltd.	Linecutting & Camp	M. Barker I. Thomas J. Kodwat	Party Chief Axeman Axeman
Exploration Geophysics (Yukon) Limited	EM & MAG Survey & Report	M. Currie E. Asp J.S. Brock	Operator Assistant Geophysicist

KEY PERSONNEL

John S. Brock is a graduate of the University of British Columbia in Geophysics. He was employed as a geophysicist with Dynasty Explorations in 1965, and is at present Yukon Exploration Manager for Atlas Explorations Limited and a Director of Exploration Geophysics (Yukon) Limited.

Meryl Currie: Has operated geophysical instruments across Canada since 1960 and has been employed by the following firms:

- 1966 - Hunttec Limited
- 1966/67 - Atlas Explorations Limited and Exploration Geophysics (Yukon) Ltd.
- 1967 - New Imperial Mines Limited
- 1968 - Exploration Geophysics (Yukon) Limited

DECLARATION:

I, Robert J. Cathro, Professional Engineer registered in the Province of British Columbia, residing in Whitehorse, Yukon Territory, hereby declare: That I have known the said John S. Brock and the said Meryl Currie since 1965 and the work performed by them on the Idaho Silver Mines Limited - Wann River Property, the subject of this report, has been made under my supervision.

SWORN BEFORE ME AT THE CITY OF WHITEHORSE IN THE YUKON TERRITORY

THIS 23rd DAY OF MAY, 1968

Robert J. Cathro



[Signature]

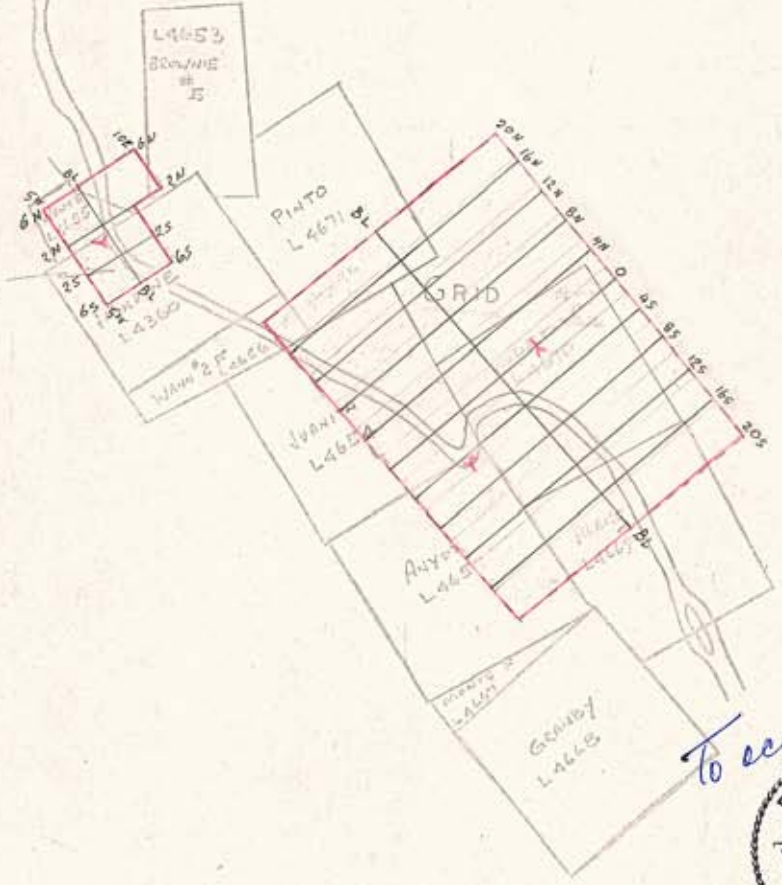
NOTARY PUBLIC FOR THE YUKON TERRITORY

1628

TAKU ARM
OF
TAGISH LAKE

WANN RIVER

GRID



*To accompany report
dated
May 22/68*



MINERAL LEASE 24, 26, 27 - WANN RIVER ATLIN DISTRICT, B.C.		
IDAHO SILVER MINES LTD (NPL)		
DATE	10 MAY 1968	DNG No 3
TAKEN	87	
SCALE	1" = 0.35 MI	

A REPORT ON
ELECTROMAGNETIC AND MAGNETIC SURVEYS
WANN RIVER PROPERTY

INTRODUCTION

As requested by Archer & Cathro & Associates Ltd., this report on geophysical findings of two electromagnetic and magnetic surveys, has been prepared from field notes and descriptive sketches pertaining to the Wann River property, Atlin Area, British Columbia.

A crew consisting of two geophysical operators and linecutters, conducted and completed the hereunder described surveys during the latterweek of March, 1968. The surveys were designed to test areas of base metal sulphides previously discovered by prospect adits and pits.

As no geologic descriptions of the property and its surrounding area have been made available to the author, no attempt has been made to provide a detailed geophysical interpretation of the geology, however areas of possible geologic and economic interest have been noted through delineation of electromagnetic and magnetic anomalies.

SUMMARY

Several conductors have been outlined in the vicinity of old workings on both Grid No. 1 and Grid No. 2. It is thought that they are representative of vein-fault structures and that follow-up work consisting of geochemical surveys and possible trenching should be carried out.

SURVEY METHOD

Grid Location and Survey

Two grids were established by linecutting over the areas in which surveys were required. Each grid was controlled

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with a central baseline bearing 'true north', the relation of the grids to claim group boundaries is not known by the author, however local drainage and old workings have been noted on the maps.

Grid No. 1, consists of a 1200 foot baseline with four cross lines of 400 foot spacing with 100 foot stations established on each line. A total of 6000 feet of line were surveyed on this grid. Grid No. 2 consists of a 4000 foot baseline with 2800 foot cross lines spaced every 400 feet, the cross lines strike in an east-west direction and have 100 foot stations established on them. Survey control was maintained by picket and chain methods with 'spot-checks' by Brunton compass.

Geophysical Instrumentation

For the magnetometer survey, a Jaylander Model 46-65 magnetometer was used, the instrument is hand-held and measures the vertical component by use of an oil dampened fluxgate which automatically levels itself in the vertical direction. The range of this instrument is 10 to 250,000 gammas over five sensitivity ranges, the lowest being 10 gammas per scale division. The equipment is of light weight and readings can be obtained quickly, a conversion factor is necessary before gamma values can be determined.

For the electromagnetic survey, a Crone JEM dual frequency unit was employed. The Crone unit is of the inductive type and may be either operated as a horizontal or vertical loop apparatus. Measurements are made of the resultant dip angle of the field and the width of null or out of phase component. It is designed to be operated with a maximum coil spread of 300 feet on frequencies of 480 and 1800 cycles per second. The effective depth of penetration is approximately 250 feet for a horizontal conductor and 100 feet for

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a vertical conductor. The effective lateral spread is a direct function of the coil separation under ideal conditions. The JEM electromagnetic equipment operates under the 'shoot-back' method.

Operating Procedure

For the magnetic survey, preliminary readings were taken along the central base line of the grid to be surveyed at cross line intersection points. Stations were then 'looped' and re-read every hour as a means of controlling drift and diurnal variations. With base stations of an established value, the survey was kept on a relative basis during day to day operations. Every cross line was read with re-checks at the base station to provide control for drift and diurnal variations.

The electromagnetic survey was carried out using a horizontal loop configuration and 200 foot coil spread. Each cross line was surveyed with readings taken at 100 foot station intervals corresponding with the magnetic survey. All grids were read using the 1800 cps frequency, the 480 cps frequency was used as well, but only on the majority of stations on Grid 1. It is not known why both frequencies were not employed on the survey of Grid 2. All traverses were by the 'in-line' method.

TREATMENT AND PRESENTATION OF DATA

Magnetic results were plotted on a grid plan of scale 1:200, with one map showing 'Gamma Values and Profiles' and the other 'Magnetic Contours' (see map folder). The same type of magnetic maps were prepared for both Grid No. 1 and Grid No. 2, all available data pertaining to locations of drainage and old workings was plotted.

Electromagnetic results were plotted on similar grid plans to those used for magnetic results. One map for each grid was prepared showing resultant dip angle values and profiles of same.

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PREVIOUS WORK

No records of previous work done on the property was provided to the author, however the locations of several old workings were noted during the course of the survey.

GEOPHYSICAL RESULTS

Grid No. 1

The magnetometer survey outlined a well defined profile of 800 gammas relief in the vicinity of line 2N, Station 5E. The anomaly is 'open' at its north and south ends, but as covered by the survey, has a strike length of 450 feet between lines 6N and 2N. The profile is of regular and uniform nature.

Electromagnetic response has been noted in the vicinity of the creek flowing through the central portion of the grid. A strong negative dip angle profile was recorded on line 2S in the area of station 2W, weaker negative dip angles are on strike on both lines 2W and 6S. There is no significant coincidence between electromagnetic and magnetic expressions.

Grid No. 2

Magnetic highs were outlined in the vicinity of lines 16 and 20N, stations 13E and throughout the western section of the grid, west of the baseline.

The smaller anomaly at the northeast end of the grid (line 20N, 13E) reaches a peak value of 1500 gammas or approximately 500 gammas above background, it is 'open' at both ends.

The larger magnetic anomaly is elongate in a north-south direction and is also 'open' at both ends. As presented on the grid map, this expression is 4000 feet long in strike length and 1000 feet in width at its widest profile.

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Within the anomaly three individual peak values are reached of 500 to 1000 gammas above background.

The electromagnetic survey shows several low amplitude cross-overs, outlined by resultant dip angles obtained on the 1800 cps frequency only. Three areas of conductive expression have been noted between lines 4N and 4S at stations 6E, lines 16 and 20S at stations 6E and lines 0 and 8S between 6W and 12W. Coincidence with magnetic expression is noted in the vicinity of lines 0 and 8S between stations 6W and 12W.

CONCLUSIONS AND RECOMMENDATIONS

Grid No. 1

The magnetic anomaly is of uniform character, appears to be near surface, and due to a causative structure of mass within 100 feet of surface. Susceptibility differences would indicate the underlying structure is of volcanic origin with a northwesterly striking contact near line 2N, 4E and line 6N, 3E. The structure probably dips to the east as indicated by profile studies.

There is no electromagnetic response near the abovenoted magnetic anomaly. Cross-overs in the vicinity of the creek are thought to be due to overburden and groundwater conditions. A strong negative dip angle response on line 2S station 2W is unexplained but due to its proximity to an old adit, could be due to sulphide mineralization. A weaker response has been obtained on strike near line 2N station 2W and could represent a continuation in possible sulphides.

It is recommended that follow-up in this area be carried out through geochemical soil sampling surveys and trenching of coincident geochemical-electromagnetic anomalies.

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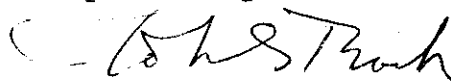
Grid No. 2

The magnetic results appear to be regional in nature and due to intrusive features. The larger anomaly over the western portion of the grid has a well defined contact striking northwesterly along its eastern limit. In general the magnetics do not appear to outline economic possibilities, however a fault zone has been assumed from line 12S, 12W, striking northeast to line 0, 6W. This fault zone is also confirmed by coincident electromagnetic results. The fault zone could provide ore control for vein-type structures containing sulphide mineralization in this area.

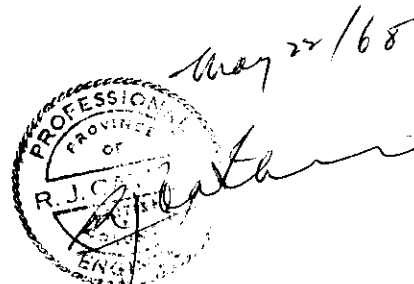
The elctromagnetics near the eastern adit, line 0, 5E, are well defined over lines 0 and 4S. It is likely that these responses can be related to sulphide zones found near the adit. The positive dip angle results over lines 16 and 20S, 6E are of interest in that they represent a vertical near surface conductor along strike from the abovementioned anomaly near the adit.

Geochemical surveys and possible trenching are recommended over the areas of electromagnetics mentioned.

Respectfully submitted,



JOHN S. BROCK,
Geophysicist



AFFIDAVIT OF EXPENDITURES

I, Robert J. Cathro, Engineer of the City of Whitehorse, in the Yukon Territory, make oath and say

1. That I have caused to be performed, linecutting and Magnetic and Electromagnetic Geophysical Survey on the following Crown Granted Mineral Claims

Pinto	(L4671)
Jackpine	(L4360)
Wann Fr No. 2	(L4656)
Wann Fr	(L4655)
Alamo	(L4669)
Anyox	(L4657)
Rodeo	(L4670)
Juanitu	(L4654)

all in the Atlin Mining Division, British Columbia, between the dates of March 20th and March 28th, 1968, inclusive.

2. I have received monies in the amount of \$ 3,550.00 from Idaho Silver Mines Ltd. (N.P.L.) to cover the costs of the said linecutting and survey which monies I have fully expended to cover wages, subsistence, materials, equipment rental, consulting fees, associated directly with the said linecutting and survey.

SWORN BEFORE ME IN THE CITY OF WHITEHORSE IN THE YUKON TERRITORY

THIS 22nd DAY OF MAY 1968.

Robert J. Cathro



[Handwritten signature]

NOTARY PUBLIC FOR THE YUKON TERRITORY

EXPLORATION GEOPHYSICS (YUKON) LIMITED

P.O. BOX 2494

WHITEHORSE, YUKON

April 23, 1968

STATEMENT OF ACCOUNT

WITH: ARCHER CATHRO & ASSOCIATES
P.O. BOX 1708
WHITEHORSE, YUKON

TO: EM & MAG Survey and Report,
Wann River Property, B.C.

Supply 2 operators, Electromagnetic
and Magnetic Instruments and Report
March 20 - 28th, 1968.

OUR FEES ----- \$ 1,480.00

OUR INVOICE NBR. 71-68W

Third Ave.

White, Hosford & Impey Limited

LEGAL SURVEYS :: ENGINEERING

Whitehorse, Yukon

Paul S. White, P. Eng., A.L.S., D.L.S.
A. Denis Hosford, A.L.S., B.C.L.S.
Hugh E. Impey, A.L.S., S.L.S., D.L.S., D.L.S.

April 23, 1968.

STATEMENT OF ACCOUNT

WITH: ARCHER CATHRO & ASSOCIATES
P.O. BOX 1708
WHITEHORSE, Y.T.

TO: Linecutting - Wann River Area, B.C.
Supply 5 man camp subsistence and
3 man linecutting crew, March 20-28, 1968.

OUR FEES ----- \$ 2,070.00

OUR INVOICE NBR. 70-68W

Third Ave.

White, Hosford & Impey Limited

LEGAL SURVEYS :: ENGINEERING

Whitehorse, Yukon

Paul S. White, P. Eng., A.L.S., D.L.S.
 A. Denis Hosford, A.L.S., B.C.L.S.
 Hugh E. Impey, A.L.S., S.L.S., M.L.S., D.L.S.

15 July 1968

COST BREAKDOWN

Line Cutting - Wann River Area, B.C.
 March 20 - 28, 1968

<u>Personnel</u> (Linecutters)	Wages
M. Barker 9 days @ \$40.00/day	\$ 360.00
I. Thomas 9 days @ \$30.00/day	270.00
J. Kodwat 9 days @ \$30.00/day	270.00
 <u>Drafting</u>	
Ming K. Wong 6 hours @ \$4.00/hour	\$ 24.00
 <u>Room & Board</u>	
5 men for 9 days @ \$15.00/day	\$ 675.00
 <u>Materials Purchased and Used</u>	
4 axes @ \$6.00/each	\$ 24.00
8 files @ \$1.00/each	8.00
flagging	6.00
marking pens	10.00
 <u>Equipment Rental</u>	
Transit, tape, alby level, compass \$22.00/day for 9 days	\$ 198.00
 <u>Vehicle</u>	
1/2 ton truck for 9 days @ \$25.00/day	\$ 225.00
 TOTAL	 \$ 2,070.00

EXPLORATION GEOPHYSICS (YUKON) LIMITED

P.O. BOX 2494

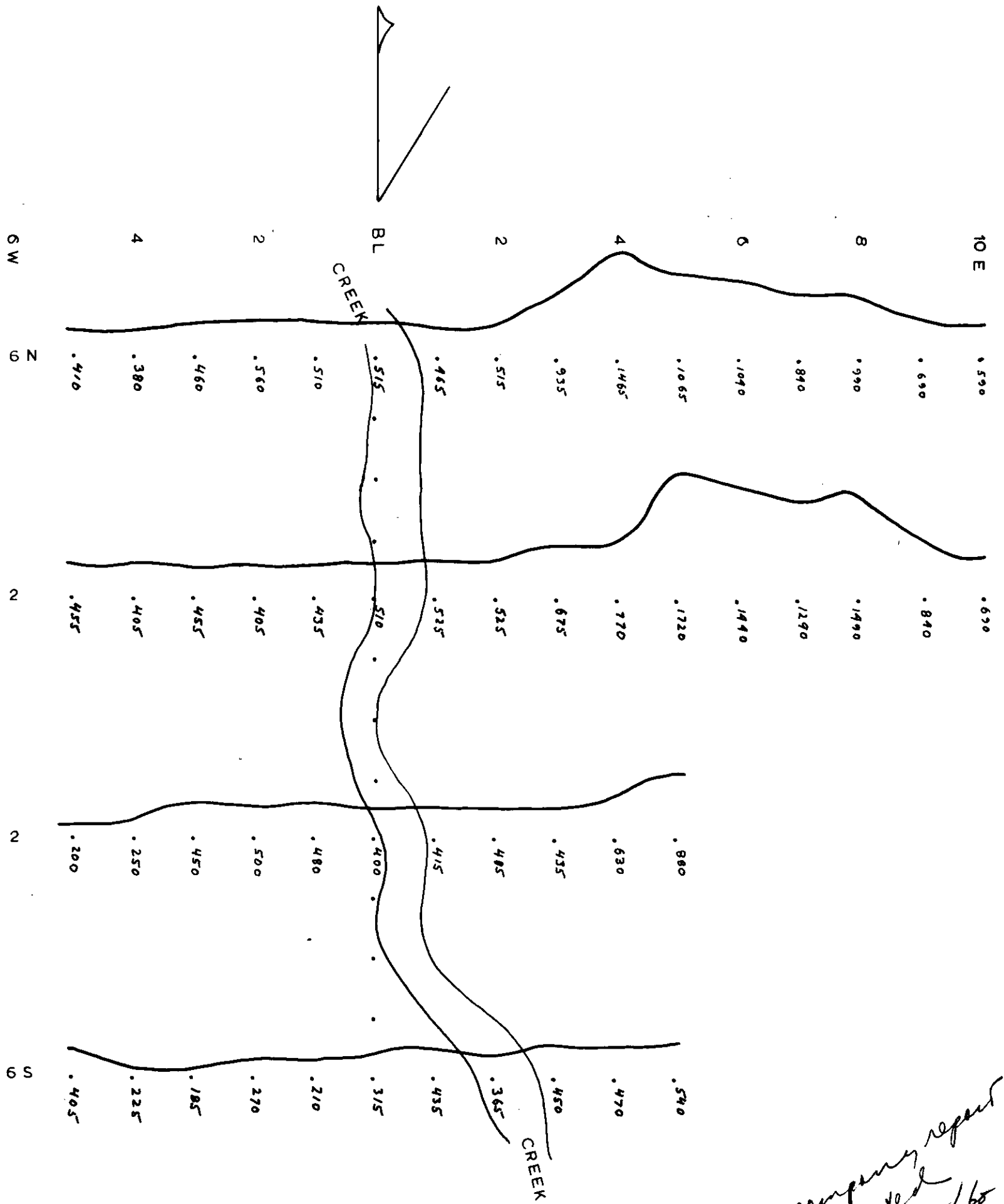
WHITEHORSE, YUKON

15 July 1968

COST BREAKDOWN

EM & MAG Survey and Report, Wann River Area, B.C.
March 20 - 28, 1968.

Personnel (Operators)	Wages
M. Currie \$35.00/day for 9 days	\$ 315.00
E. Asp \$35.00/day for 9 days	315.00
 Equipment Rental	
Jalander Magnetometer 9 days @ \$20.00/day	\$ 180.00
Krone E.M. Unit 9 days @ \$30.00/day	270.00
 Report and Reproduction	\$ 400.00
 Total	<hr/> \$ 1,480.00 <hr/>



To accompany report
 dated
 Aug 22/68

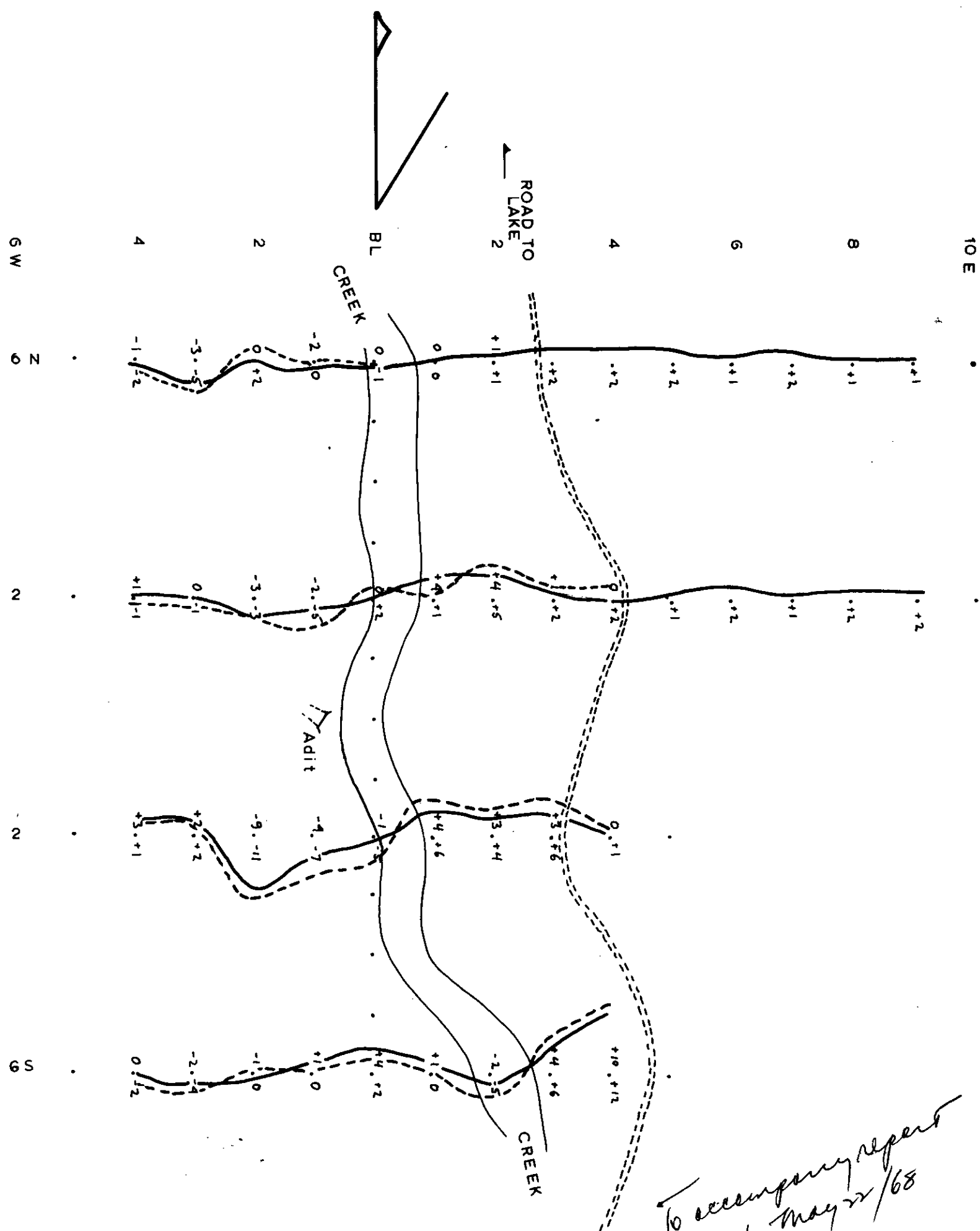


WANN RIVER PROPERTY
 IDAHO SILVER MINES LTD NPL
 ATLIN - AREA

GRID No 1
 Magnetometric Survey
 Vertical Field
 Profiles

SCALE: 1:200
 VALUES: gammas
 SURVEY: M. Curry, March, 1968

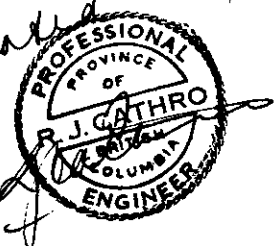
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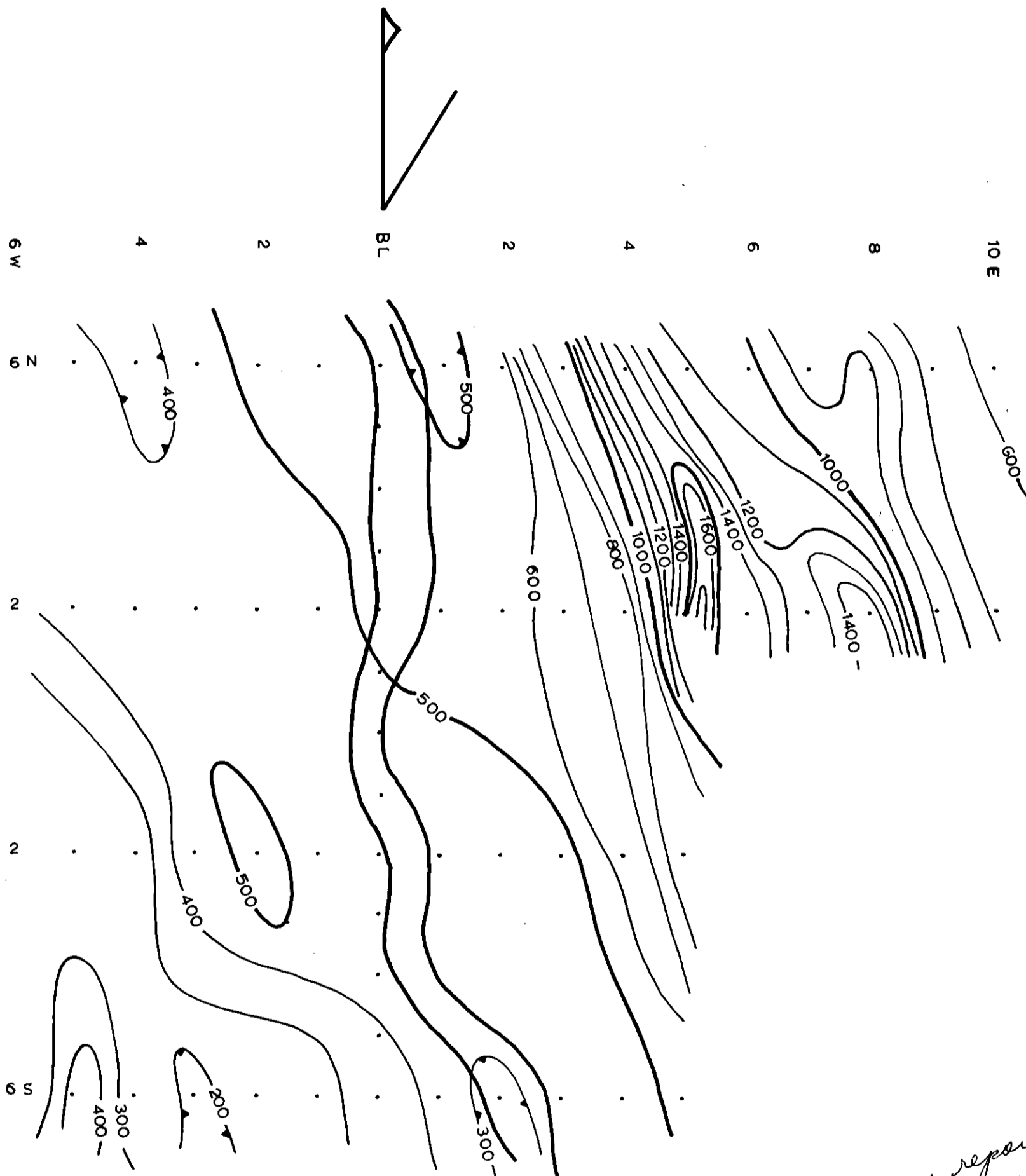
WANN RIVER PROPERTY
 IDAHO SILVER MINES LTD NPL
 ATLIN AREA

SCALE: 1:200
 VALUES: 1800 cps • 480 cps
 Resultant dip
 SURVEY: M. CURRY, March, 1968

GRID No 1
 Electromagnetic Survey
 JEM Horizontal Loop
 PROFILES



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*To accompany report
dated May 22/68*

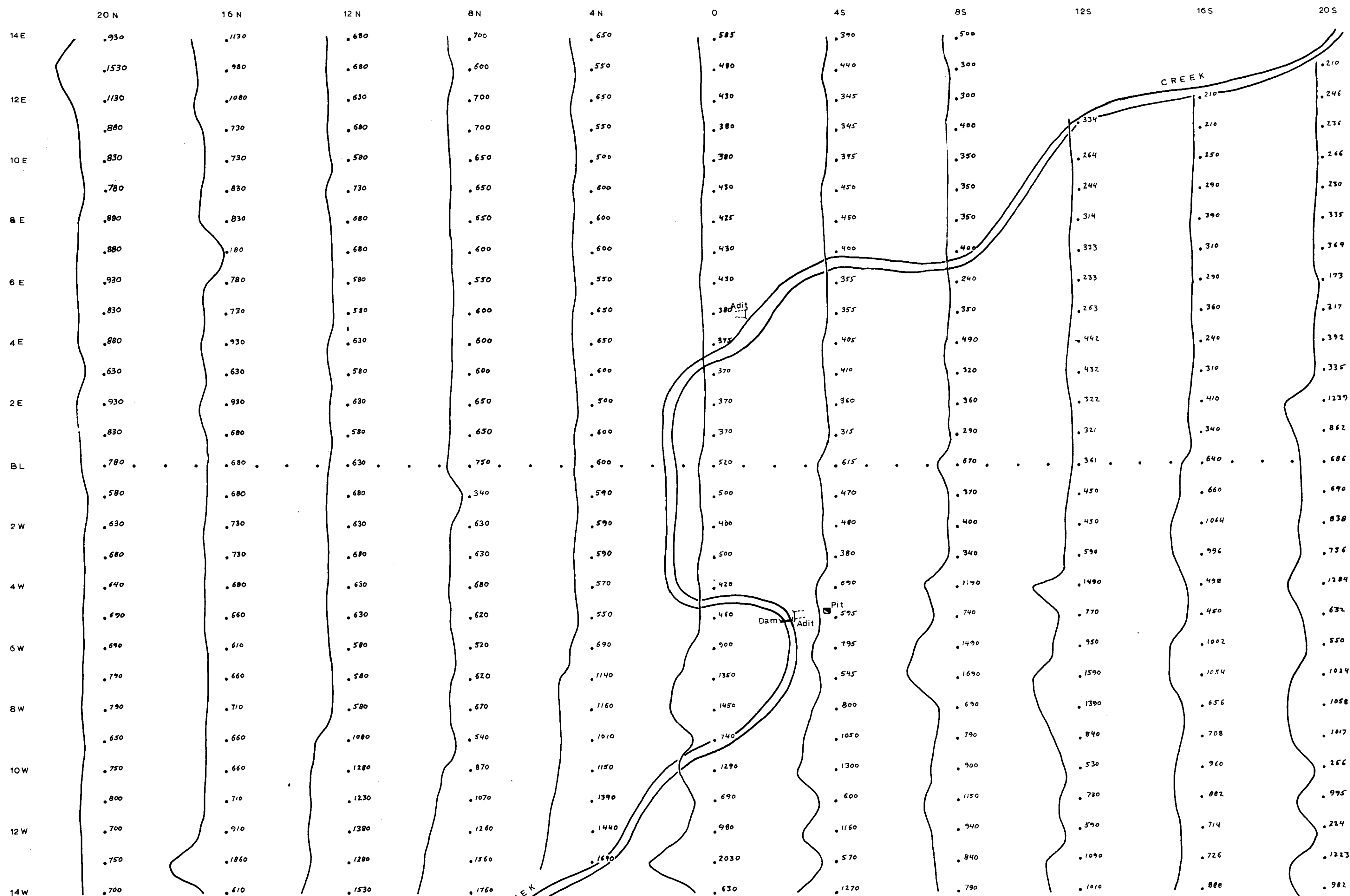
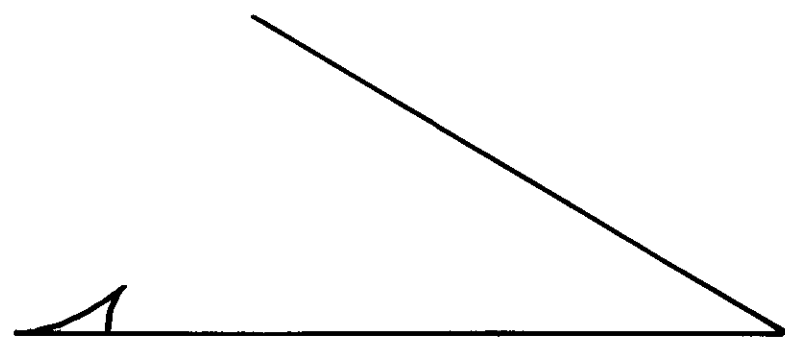


WANN RIVER PROPERTY
IDAHO SILVER MINES LTD NPL
ATLIN AREA

GRID No 1
Magnetometric Survey
Vertical Field
CONTOUR

SCALE: 1 : 200
VALUES: gammas
SURVEY: M. Curry, March, 1968

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WANN RIVER PROPERTY
IDAHO SILVER MINES LTD. NPL.
ATLIN AREA

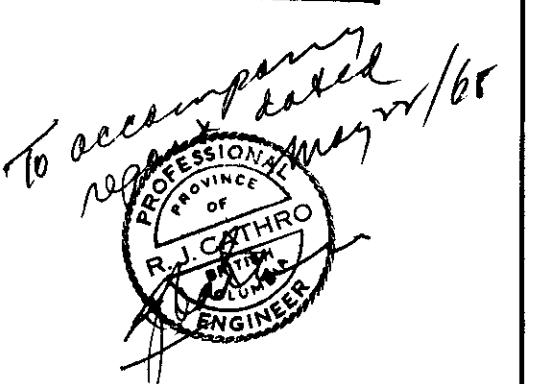
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VALUES: gammas
SURVEY: M. Curry, March, 1968

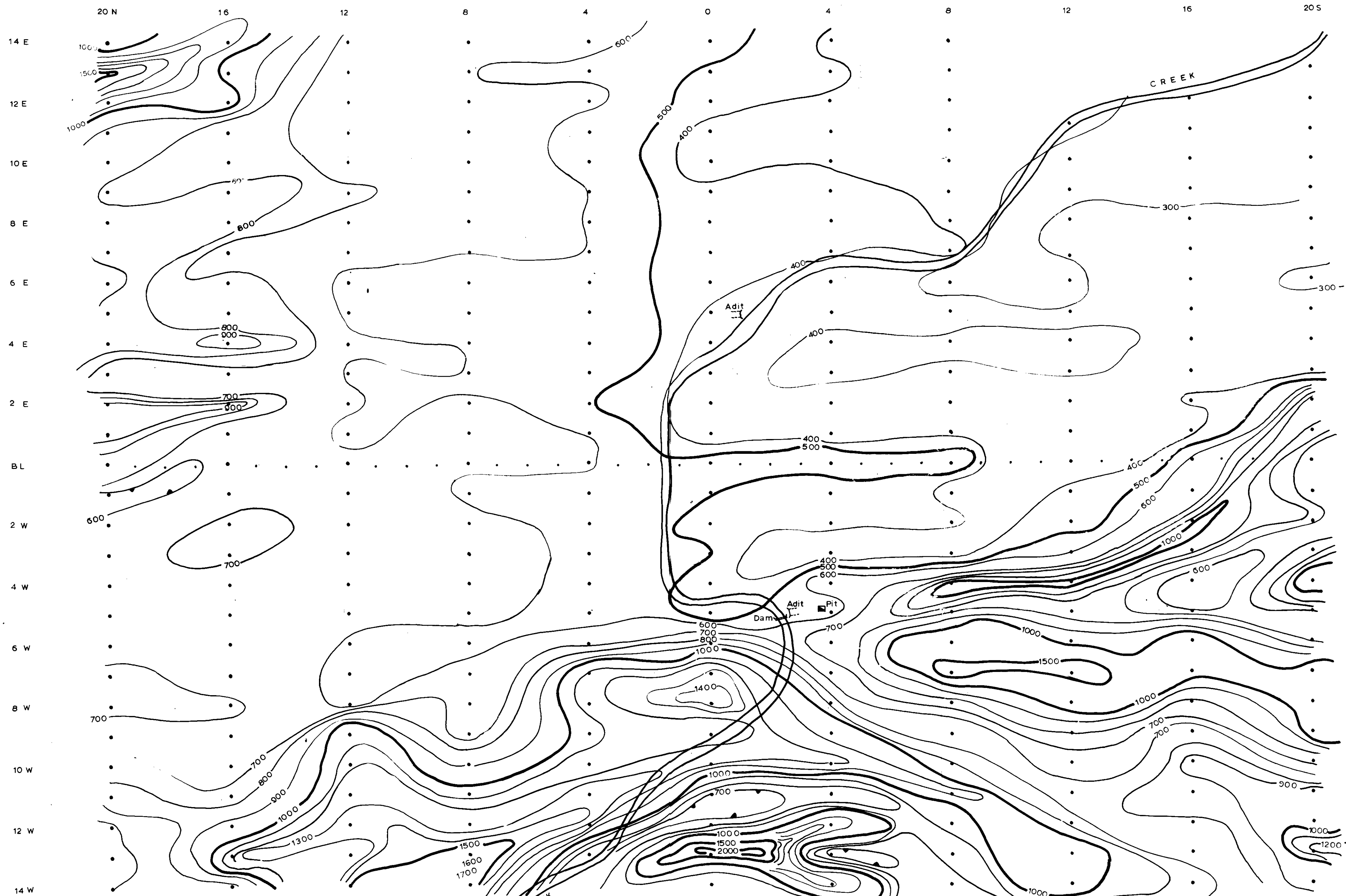
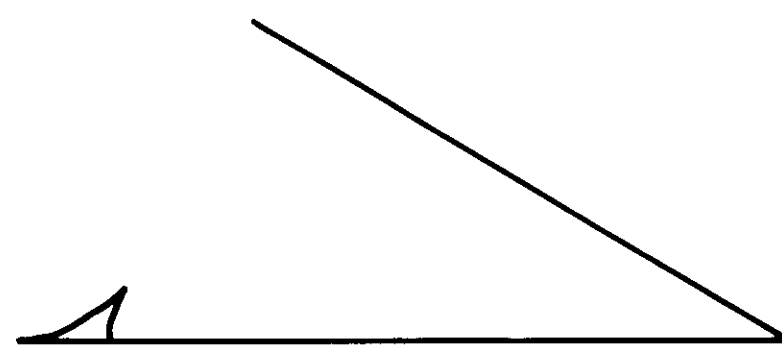
GRID No 2
Magnetometric Survey
Vertical Field

PROFILES

1628

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1628 MAP 4





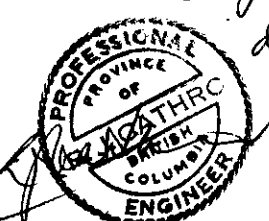
WANN RIVER PROPERTY
IDAHO SILVER MINES LTD. N.R.L.
ATLIN AREA

SCALE: 1:200
CONTOUR INTERVAL, 100 gammas
SURVEY: M Curry, March, 1968

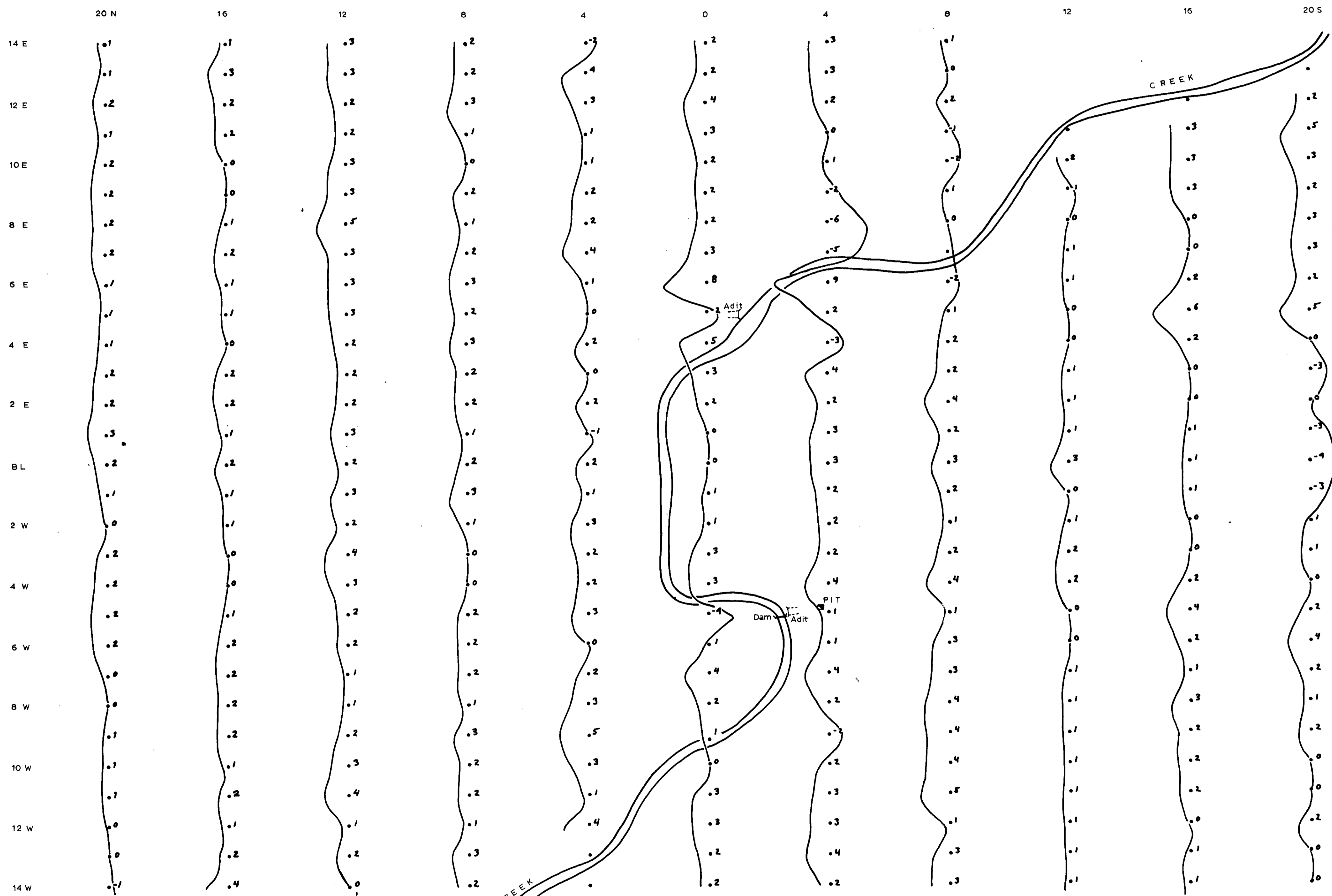
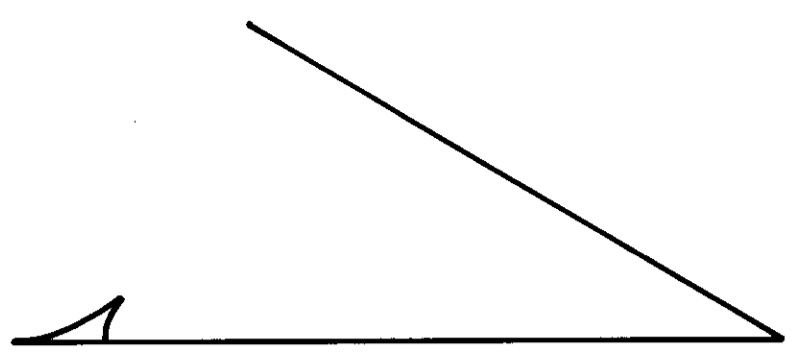
GRID No 2
Magnetometric Survey
Isomagnetic Contours

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1628 MAP 5

*To accompany
report dated
May 22/68*



1628



WANN RIVER PROPERTY
 IDAHO SILVER MINES LTD. N.P.L.
 ATLIN AREA

SCALE: 1:200
 VALUES: 1800 cps., resultant dip angle
 SURVEY: M. Curry, March, 1968

GRID No 2
 Electromagnetic Survey
 JEM Horizontal Loop

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 1628 MAP 6

1628

To accompany
 report dated
 May 22 1968