

GEOPHYSICAL REPORT

on the

Bill #1 to #6 incl. Claims

Situated in the

McDame Area

Latord M.D.

North Central B.C.

Latitude 59°N: Longitude 129°W

N.T.S. 104P (W 1/2)

104P-3E

Owned by:

Dresser Industries Incorporated

Work Completed Between

September 26th and September 30th, 1967

by

D. R. Cochrane, P. Eng.

January 5th, 1968



GEO-X SURVEYS

VANCOUVER, CANADA

1220
Ltd.

1220

TABLE OF CONTENTS

Introduction	I
Location and Access	I
Claim and Ownership	2
Geomorphology	2, 3
Ground Control Grid	3
Electromagnetic Survey Field Procedure	3, 4
Electromagnetic Survey Results	4, 5
Magnetometer Field Procedure	5, 6
Magnetometer Orientation Survey Results	6
Summary and Conclusions	6, 7

Appendix:

- I Personnel and Dates Worked
- II Cost Breakdown
- III EM Instrument Specifications
- IV Magnetometer Specifications

Figures:

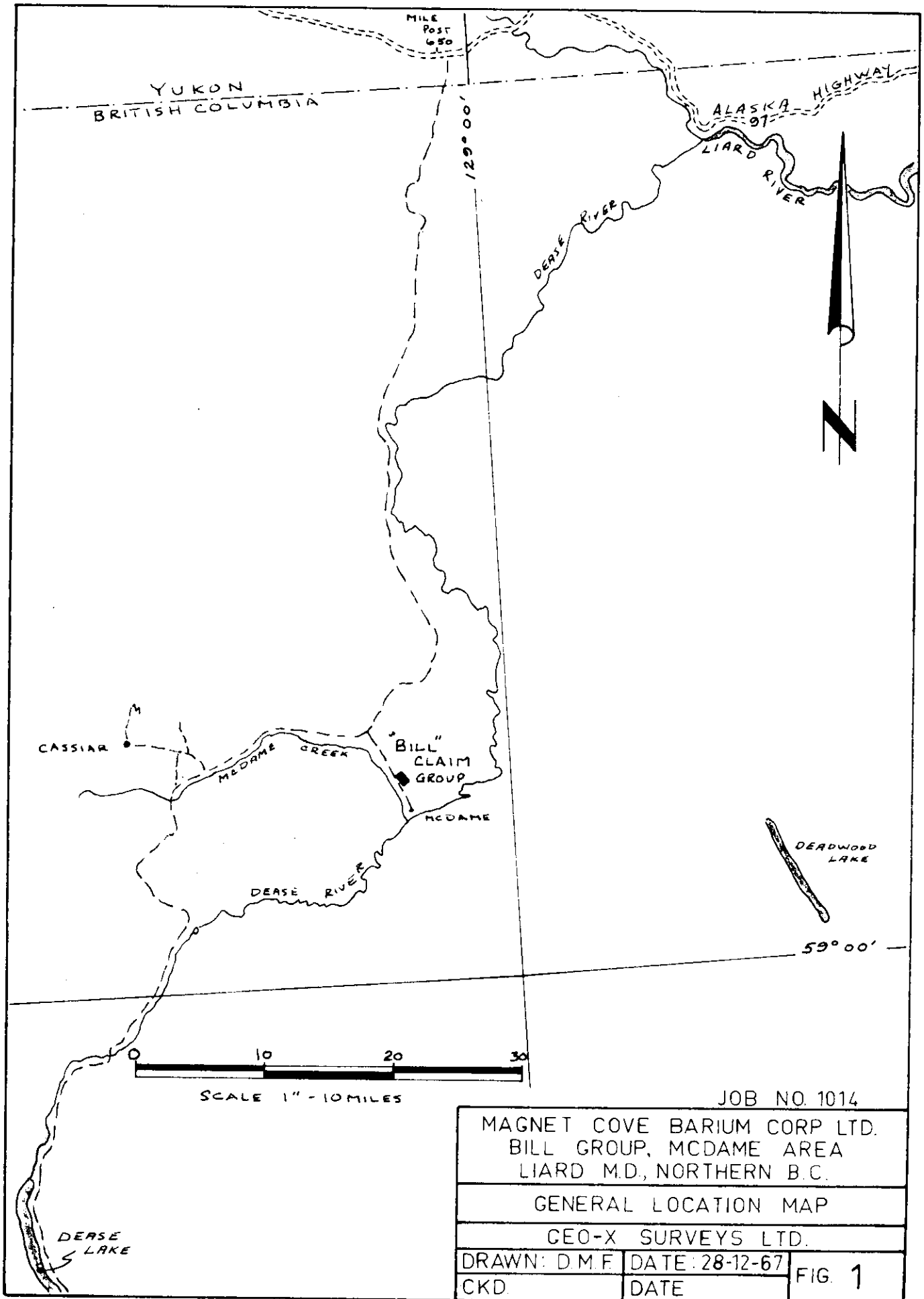
1. Location Map # 5
2. Claims Map # 4
3. Ronka EM 16 In-phase Component Plan # 3
4. Ronka EM 16 Profiles # 1
5. Magnetometer Profiles # 2

INTRODUCTION:

Between September 26th and 30th, 1967, a three-man field crew completed preliminary ground control layout and electromagnetic-magnetometer geophysical surveys on the Bill #1 to 6 inclusive claims, McDame area, B.C. The claims are owned outright by Dresser Industries Inc. (Magnet Cove Barium Corp.), and field work was completed by a Geo-X Surveys Ltd. instrument operator, under the field supervision of Mr. J. Carter, a Dresser Geologist. Data processing and interpretation was conducted by the author. This report describes the field procedures and discusses the results of the surveys.

LOCATION and ACCESS:

The claims are situated 1 1/4 miles north of the abandoned McDame Post (on the Dease River) in extreme north central British Columbia. Normal access is from Mile Post 650 on the Alaska Highway (west of Watson Lake, Yukon), south on the Cassiar Road to the junction of the Cassiar and McDame Post roads, thence south again to the claims. The road extends through the northwest corner of Bill #2 claim (see Location Map, Figure 1).



CLAIMS and OWNERSHIP:

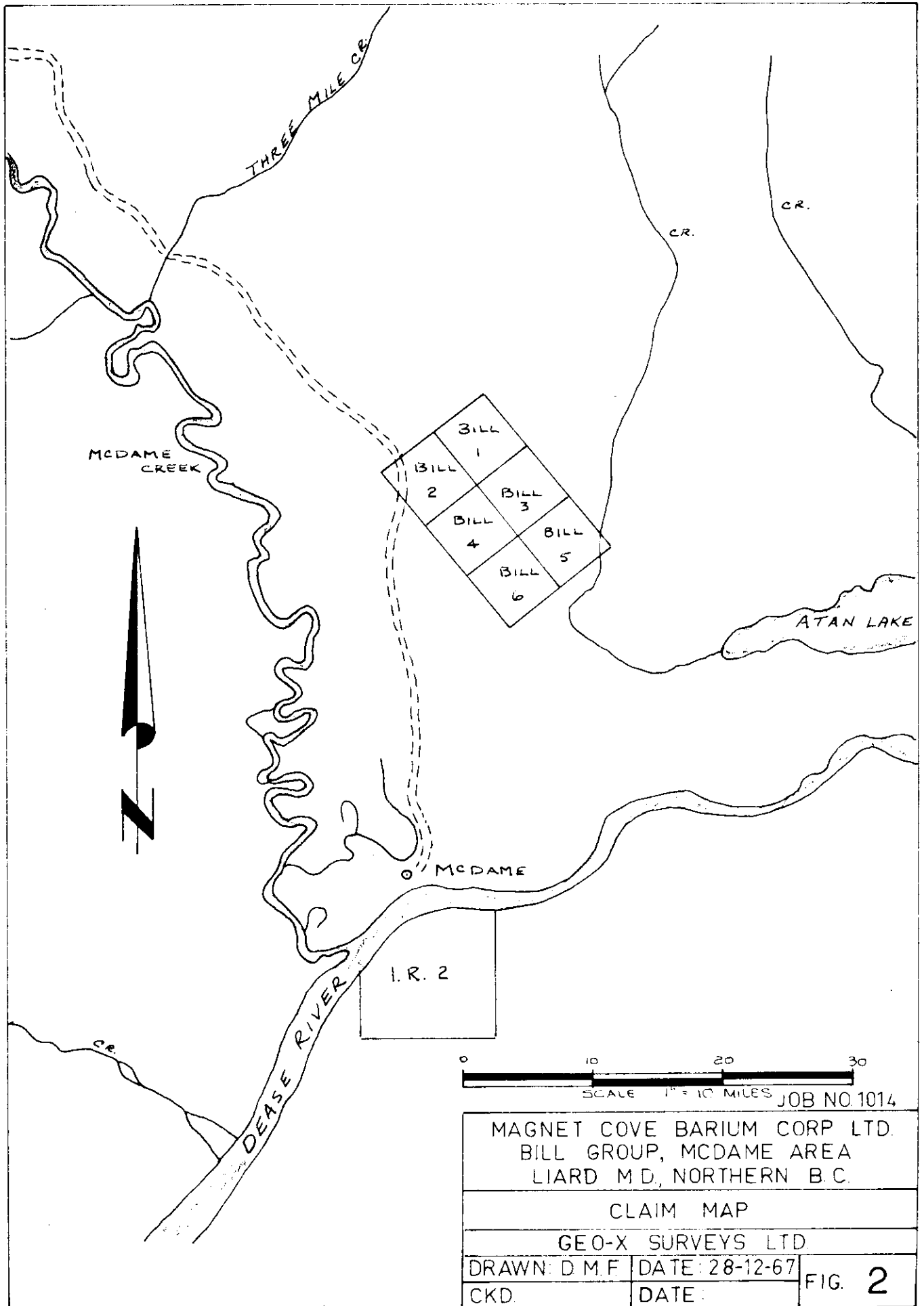
The Bill number 1 to 6 claims, Liard M.D. are owned outright by Dresser Industries Inc., Suite 301 - 415 3rd Street, Southwest (Chevron Building), Calgary, Alberta. Pertinent claim data follows:

<u>Claim Name(s)</u>	<u>Record No.(s)</u>
Bill # 1 to #4 incl.	15148 to 15151 incl.
Bill #5 and #6	18874 and 18875

GEOMORPHOLOGY:

The Bill claims are situated in the Stikine Range of the Cassiar Mountain physiographic division of British Columbia. The general area is underlain dominantly by upper Palaeozoic to lower Mesozoic miogeosynclinal rock sequences which are highly folded and faulted. These rocks are intruded by small ultra-basic plugs, and acidic intrusives. The latter are probably related to the main Cassiar batholith to the west.

The highest peak in the area is Blackfox Mountain (7,022 feet), situated west of McDame. Characteristically, peaks and ridges above 6,000 feet are sharply scalloped by cirque glaciers on their north and northeast sides. Below 6,000 feet, and on southern exposures, slopes are more gentle and rounded.



The Bill group is situated near the 2,500 foot contour, on the southwest slope of an unnamed mountain rising over 6,000 feet, north of Atan Lake.

GROUND CONTROL GRID:

Lines were surveyed with transit, compass and chain utilizing, as much as possible, the access roads and the claim location line as basic controls. Several cross lines were run perpendicular to the Bill # 5 and #6 location line and angled crosslines were established on Bill numbers 1, 2, 3 and 4.

Stations were flagged at 100-foot intervals along the base line (location line), access roads and cross lines. A total of 18,900 line feet (3.6 line miles) were layed out in this manner.

ELECTROMAGNETIC SURVEY FIELD PROCEEDURE:

A Ronka EM 16 electromagnetic unit was used exclusively on the Bill claims survey. Instrument specifications are set out in Appendix III. The instrument operator, Mr. R. Robillard, selected station NPG as the primary field source. This station transmitts from Jim Creek, Washington, at 18.6 kc and with an output of 200 kw. Station NPG is due south of the Bill claims and the operator maintained a "face" direction of due east. The instrument was oriented in the direction of NPG at each ground

station, then tilted up and rotated to face easterly. The in phase (or real) component and the quadrature (or imaginary) component readings, in addition to the station number, slope and general remarks were recorded on standard field note forms. A base station was checked into twice each day.

ELECTROMAGNETIC SURVEY RESULTS:

The in phase results of the Ronka EM 16 survey are presented in plan as Figure 3, and quadrature and in phase components in profile in Figure 4. Figure 3 (in phase component plan) shows the dominant EM trends are northerly. Two relatively large negative in phase zones were outlined, the largest centered on the mutual boundary of Bill # 5 and #6. The lowest readings was -25%. A second low is centered on the mutual boundary of Bill #1 and #2. The lowest value is -17%.

The highest in phase component reading encountered was a +28% near the west corner of Bill #2 and #4. Values drop rapidly southeast from this reading to a minimum of +2.

The electromagnetic survey results are presented in profile in Figure 4.

Changes were classified as "true" crossovers if they occurred from positive to negative when going in the direction the operator faced, and "reverse" if the changes were negative to positive going in the direction the operator faced. True crossovers are subclassified as major, if the changes are greater than 20%, moderate (between 10% and 20%) and minor if less than 10%.

One major in phase crossover was encountered on the mutual boundary of Bill #1 and #2 claims. The corresponding quadrature response is sharp and negative.

A moderate crossover was located on the Bill #3 and #5 boundary, and again the quadrature response was rapid.

A large reverse crossover linear exists on the Bill #5 claim. The large negative in phase response area to the west of this reverse crossover may be interpreted as a horizontal conductor. Quadrature response in this same area is strongly positive.

MAGNETOMETER FIELD PROCEEDURE:

A Sabre Electronics two component magnetometer was used for magnetic orientation on the Bill claims. Instrument specifications are set out in Appendix IV.

A total of 46 vertical component values were recorded. The horizontal component fluxgate element was not utilized. Readings were taken, normally, every 100 feet, mainly along the access road through the Bill #2 claim. The operator always faced north while taking a reading, and a base station was checked three times during the day.

MAGNETOMETER ORIENTATION SURVEY RESULTS:

The magnetometer results are presented in plan in Figure 5. Values plotted are times 10^2 (ie: 518 means $518 \times 10^{+2} = 51,800$ gammas).

The arithmetic average (background) of the 46 recorded vertical component values is 51,260 gammas. The highest station was 52,400 gammas near the road end on Bill #3. The lowest station was 49,900 gammas (maximum vertical amplitude then, is 2,500 gammas).

No distinct positive or negative areas can be outlined, due to the limited extent of the survey.

SUMMARY and CONCLUSIONS:

Between September 26 and 30, 1967, a field crew completed preliminary ground control layout, electromagnetic and magnetic


geophysical surveys of the six contiguous Bill claims, Laird M.D. The claims are located 1 1/4 miles north of McDame Post which is situated on the Dease River, Northern B.C. Normal access is by road from Mile 650 on the Alaska Highway. The Bill claims are owned outright by Dresser Industries Inc. of Calgary, Alberta.

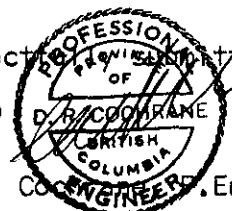
A total of 18,900 line feet of ground control grid was established with transit and chain. Electromagnetic surveying was completed with a Ronka EM 16 unit, utilizing station NPG, Jim Creek, Washington, as primary transmitter. Two areas of in-phase component negatives were discovered, in addition to one major and one moderate true crossover.

A small portion of the grid was surveyed with a Sabre Eluxgate magnetometer. Background was found to be 51,260 gammas; the highest reading was 52,400 and lowest 49,900 gammas.

Investigation as to the cause of the two areas of in-phase negatives and the true crossover zones is recommended.

January 5th, 1967
Vancouver, B.C.

Respectfully submitted,

D. R. Cochrane, Eng.



The seal is circular with the text "PROFESSIONAL ENGINEER OF BRITISH COLUMBIA" around the perimeter. In the center, the name "D. R. COCHRANE" is stamped.

APPENDIX I

Personnel and Dates Worked

The following personnel were employed on the Bill claims'

September, 1967 surveys:

<u>Name:</u>	<u>Occupation:</u>	<u>Company:</u>	<u>Dates:</u>
J. Carter	Geologist	Dresser Ind.	Sept.27,28,29
B. Sturek	Technician	Dresser Ind.	Sept.27,28,29
R. Robillard	EM & Mag.	Geo-X Surveys	Sept.27,28,29
D. Fritz	Drafting	Geo-X Surveys	Dec.20,22 & 28
D. Yip	Drafting	Geo-X Surveys	Dec.22,27 &29
D.R. Cochrane	P.Eng.	Geo-X Surveys	Jan.5,& 8, 1968

APPENDIX II

Cost Breakdown

The following costs were incurred during the September, 1967 geophysical surveys of the Bill claims:

Wages: Professional Geologist

J. Carter - 3 days @ \$150/day \$ 450.00

Wages: Technician (transit operator)

B. Sturek - 3 days @ \$125/day 375.00

By agreement with Geo-X Surveys:

Operator (R. Robillard) and

instrument (Ronka EM 16) -

3 days @ \$137.60/day 412.80

Total \$1,237.80

Work to be applied to Bill #1 to #6 inclusive for two years

J. Carter

**EM
SPECIFICATIONS**

Primary Field: Horizontal from any selected VLF transmitting station.

Frequency Range: Approximately 15-25 kc.

Station Selection: By plug-in units. Two stations selected by a switch on front panel.

Measured Field: Vertical field, in-phase and quadrature components.

Accuracy of Readings: $\pm 1\%$ resolution.

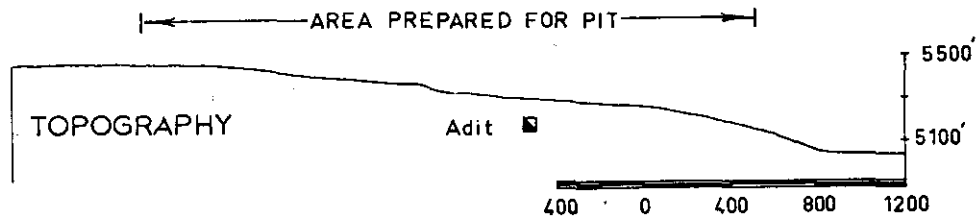
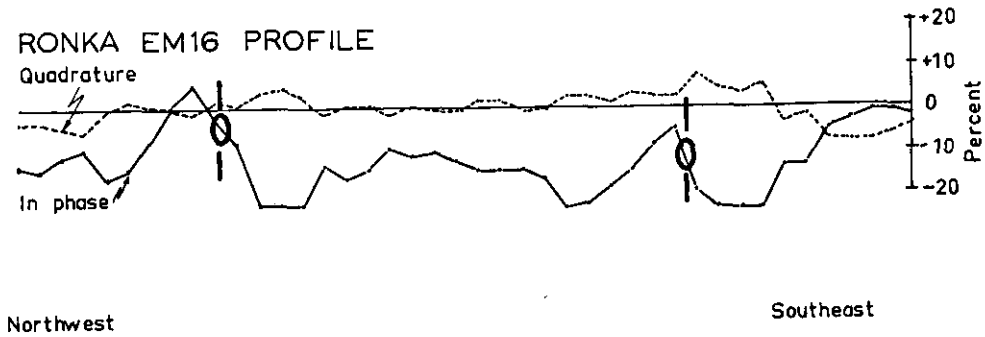
Range of Measurements: In-Phase $\pm 150\%$ or $\pm 90^\circ$, quadrature $\pm 40\%$

Output Readout: Null-detection by an earphone, real and quadrature components from mechanical dials.

Batteries: 6, size AA penlight cells. Life about 200 hours.

Size: 16 x 5.5 x 3.5 in. (42 x 14 x 12 cm)

Weight: 2.4 lbs. (1.1 kg)



Brenda Mines Limited.

APPENDIX IV

MAGNETOMETER

SPECIFICATIONS

Sensitivity: Vertical - 20 gammas per dial division.
Horizontal - 30 gammas per dial division.

Range: Vertical - 0 - 100,000 gammas
Horizontal - 0 - 30,000 gammas
(These ranges can be increased or decreased for specific applications)

Latitude Adjustment: None required in northern magnetic latitudes.

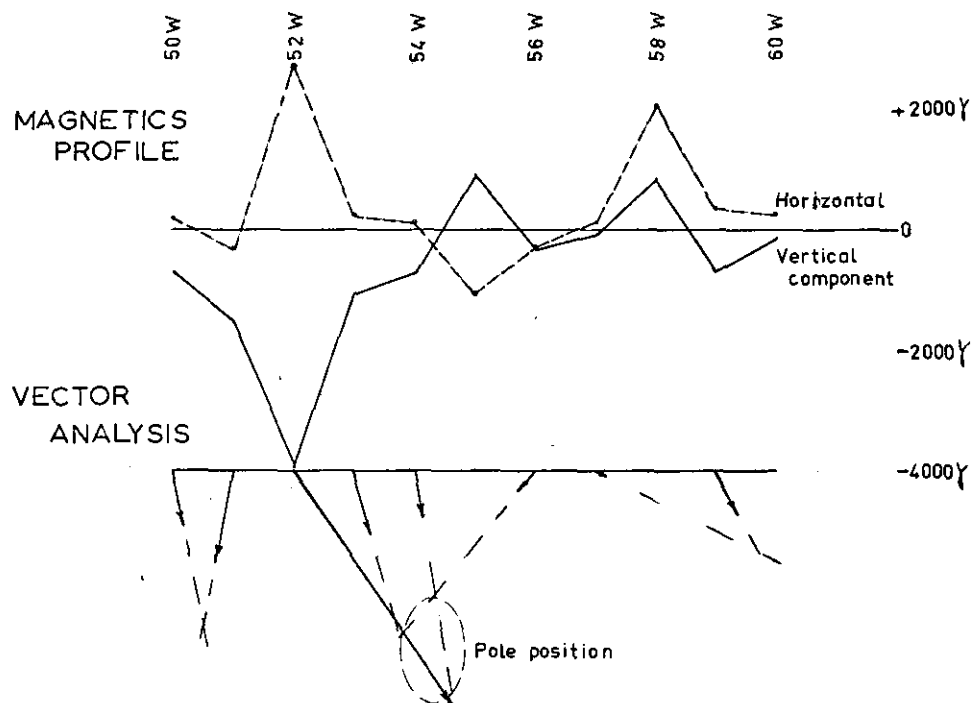
Type of Readout: Meter to indicate null plus two digital counting dials to indicate magnetic field intensity at null.

Orientation: No levels or bubbles required. Vertical reading is non-directional, horizontal reading requires orientation to magnetic north direction.

Weight: 10 pounds.

Dimensions: 4" x 7" x 11".

Power Pack: Four 9-volt Everready #246 dry cells, or equivalent.



The Diagram shows a profile along line 41 south, on the Oro Denoro Property of West Coast Resources Ltd., near Greenwood, B.C. Mineralization consists essentially of magnetic and chalcopyrite in and near a garnet skarn and quartz diorite contact.



GEO-X SURVEYS

Ltd.

627 HORNBY STREET, VANCOUVER 1, BRITISH COLUMBIA

TELEPHONE 685-4296 - CODE 604

- AIRBORNE
- MOBILE
- GROUND GEOMAG
- RONKA EM
- INDUCED POLARIZATION

March 20, 1968

Your File No. 166 - Liard

Mr. R.H. McCrimmon,
 Chief Gold Commissioner,
 Department of Mines and Petroleum Resources,
 Victoria, B.C.

Dear Sir:

Re: Bill Nos. 1-6 Mineral Claims - Geophysical Report

Your letter of February 22, 1968 to Dresser Industries Inc.,
 301 - 415 3rd St., S.W., Calgary, Alberta, in which you ask
 for qualifications of Mr. Fritz and Mr. Robillard, has been
 referred to me by Mr. John S. Carter for reply.

This will certify that Mr. D.M. Fritz and Mr. R. Robillard
 have been actively engaged in geophysical survey work for
 five and three years, respectively.

We trust this is the information you require.

Yours truly,

GEO-X SURVEYS LTD.

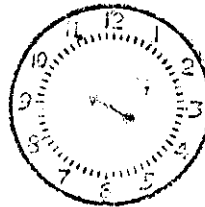
Ray Pitt
 for D.R. Cochrane, P.Eng.

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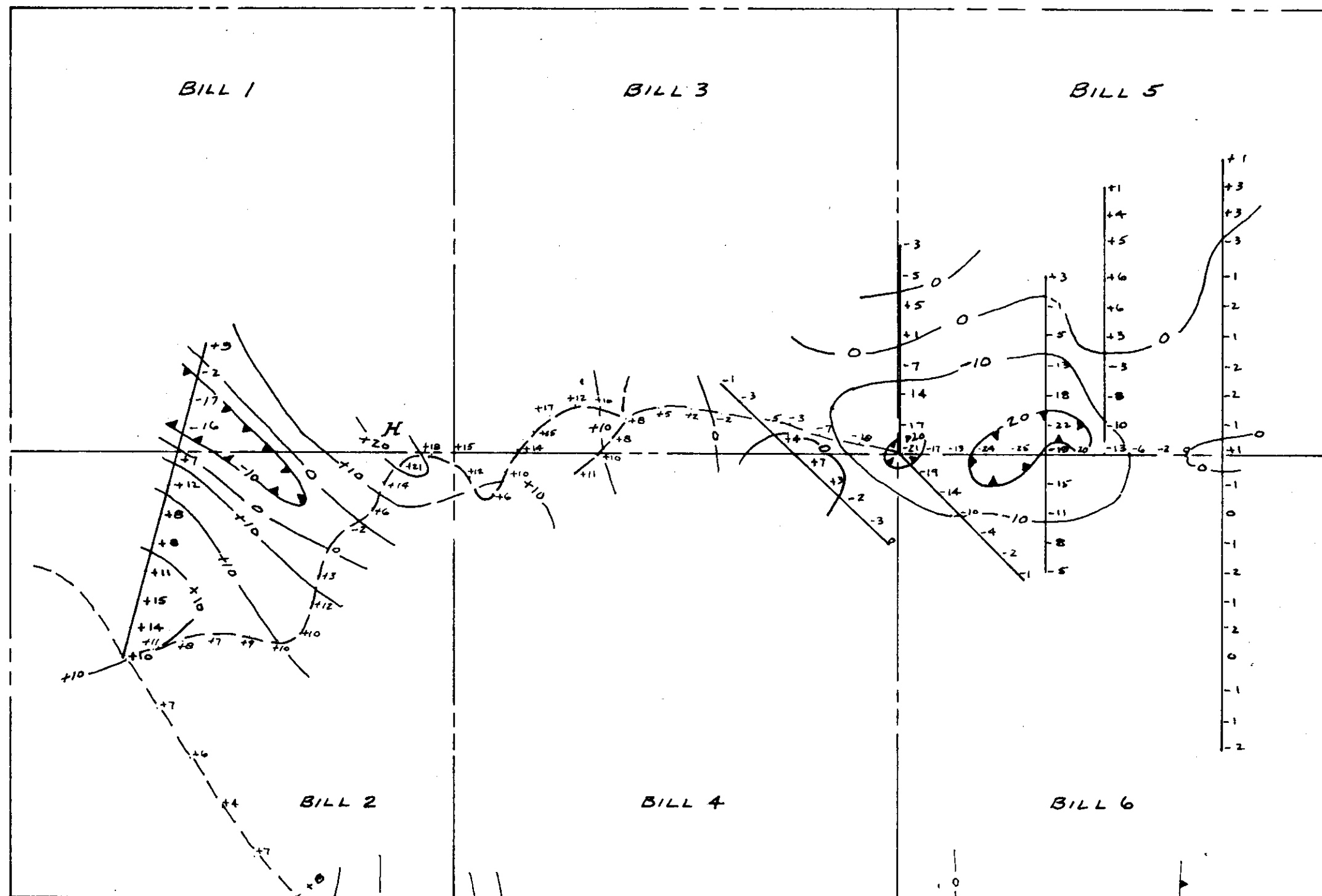
c.c. Dresser Industries Inc.

MAR 22 '68 PM



DEPT. OF MINES
AND PETROLEUM RESOURCES

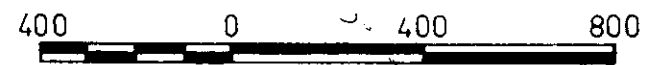
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ACCFs.		
C.M.B.		
C.I.		
C.A.		
R. T.		
C.P.E.		
	2/3	Rich



OP *[Signature]*

TO ACCOMPANY GEOPHYSICAL REPORT ON THE
 BILL GROUP SITUATED NEAR McDAME, B.C.
 LIARD M.D. FOR MAGNET COVE BARIUM CORP. LTD.
 BY D. R. COCHRANE, P. ENG. DATED JANUARY 5, 1968.
 VANCOUVER, B.C.

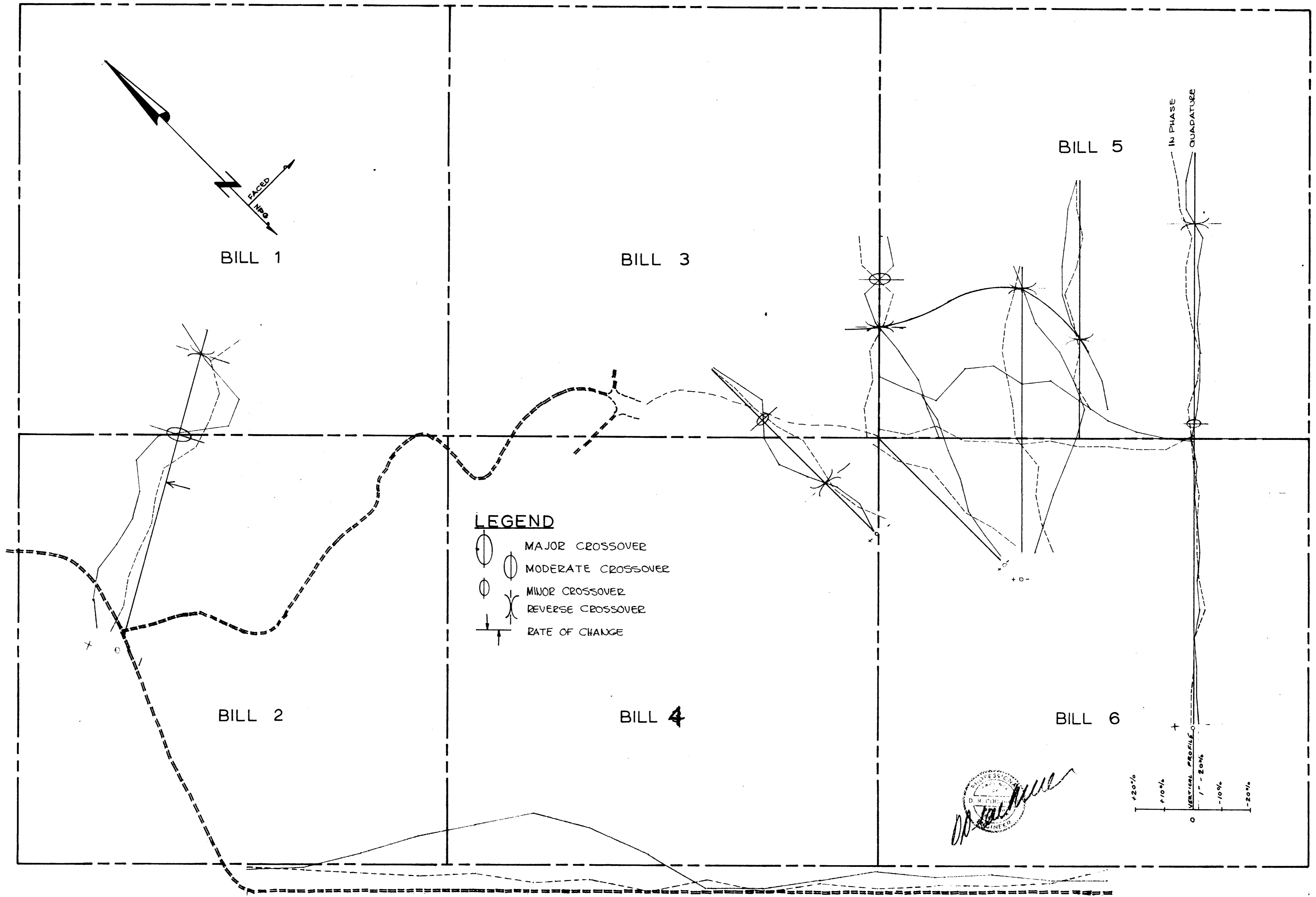
NOTE: STATIONS MG+00 U TO MG0+00N
 SCALE IS 1 INCH = 400 FEET.



SCALE
 1 INCH = 400 FEET

1220

JOB NO. 1014		
MAGNET COVE BARIUM CORP. LTD. BILL GROUP, McDAME AREA LIARD M.D., NORTHERN B.C.		
RONKA EM 16 IN' PHASE COMPONENT PLAN GEO-X SURVEYS LTD.		
DRAWN: DMF	DATE: 22-12-67	FIG. 3
CKD:	DATE:	



LEGEND

- MAJOR CROSSOVER
- MODERATE CROSSOVER
- MINOR CROSSOVER
- X REVERSE CROSSOVER
- T RATE OF CHANGE

D.R. Cochrane
 D.R. COCHRANE
 ENGINEER

200 0 200 400
 SCALE
 1 INCH = 200 FEET

+20%
 +10%
 0
 -10%
 -20%
 VERTICAL PROFILE

BILL 2

BILL 4

BILL 6

BILL 1

BILL 3

BILL 5

IN PHASE QUADATURE

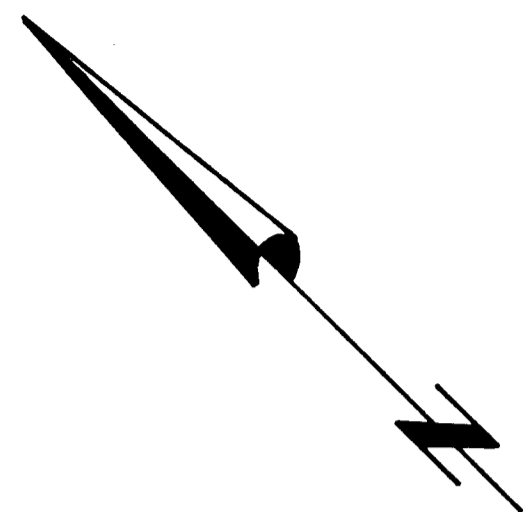
TO ACCOMPANY GEOPHYSICAL REPORT ON THE
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 BY D.R. COCHRANE ENGR. DATED JANUARY 5, 1968
 VANCOUVER B.C.

GEO-X SURVEYS LTD.
 VANCOUVER, B.C. CANADA

12th 20

JOB NO. 1014

MAGNET COVE BARIUM CORP LTD MCDAME CLAIMS NORTHERN BRITISH COLUMBIA			
RONKA EM 16 PROFILES			
DRAWN	D.E.Y.	FIGURE NO.	REV.
CKD	D.M.F.	4	
APPR'D			
DATE			



BILL 1

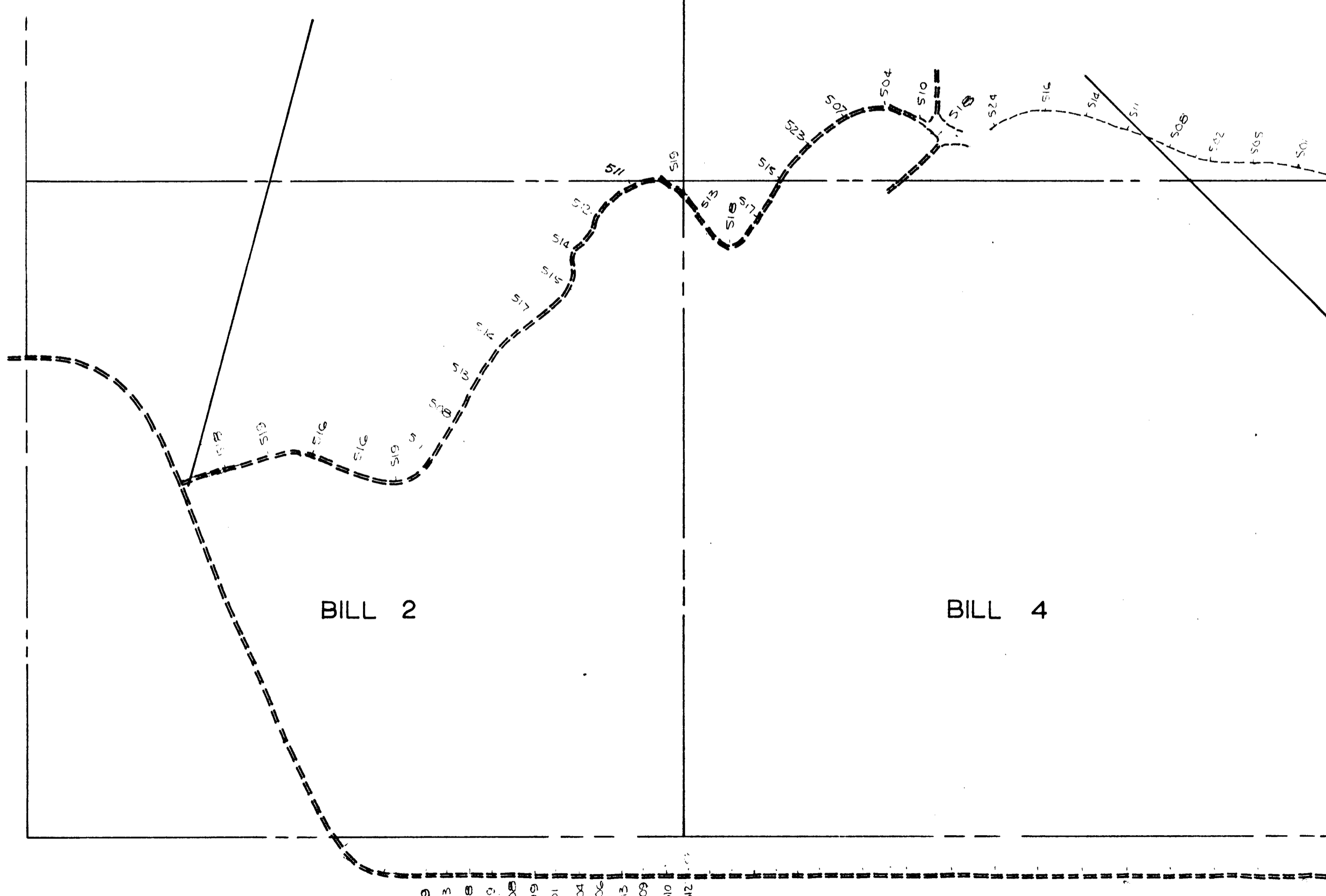
BILL 3

BILL 5

BILL 2

BILL 4

BILL 6



D. E. Cochrane
PROFESSIONAL ENGINEER
D. E. COCHRANE
BRITISH COLUMBIA

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SCALE
1 INCH = 200 FEET

1220

JOB NO. 1014

MAGNET COVE BARIUM CORP. LTD.
MCDAME CLAIMS
NORTHERN BRITISH COLUMBIA

MAGNETOMETER PLAN

TO ACCOMPANY GEOPHYSICAL REPORT ON THE
BILL GROUP SITUATED NEAR MCDAME, B.C.
LIAID M.D. FOR MAGNET COVE BARIUM CORP. LTD.
BY D. E. COCHRANE, P. ENG., DATED JANUARY 5 1968.
VANCOUVER, B.C.

GEO-X SURVEYS LTD.
VANCOUVER, B.C. CANADA

DRAWN	D.M.F.	FIGURE NO.	REV.
CKD.		5	
APPR'D.			
DATE.			