

REPORT ON THE
AIRBORNE GEOPHYSICAL SURVEY
BURNT BASIN PROPERTY
OF
ROVER MINES LTD.
GREENWOOD MINING DIVISION

1. AIRBORNE GEOPHYSICAL SURVEY
Magnetometer - Electromagnetic
2. Mt. View 1-19 M.C.'s
Burnt Basin Area, B.C.
Lat. $49^{\circ}11'N$ Long. $118^{\circ}9'W$
3. H. H. Cohen, P.Eng.
4. Rover Mines Ltd. NPL
5. October - November, 1968

1920

HARVEY H. COHEN ENGINEERING LTD.
CONSULTING ENGINEERS

TELEPHONE: BUS.: 684-6711
RES.: 266-8169

1264 WEST PENDER STREET
VANCOUVER 1, B. C.

1920

August 21, 1969

RECEIVED

AUG 25 1969

GOVERNMENT AGENT
GRAND FORKS

Mr. R. Macgregor,
Mining Recorder,
Court House,
Grand Forks, B.C.

Dear Mr. Macgregor;

RE: Mt. View Mineral Claims
Geophysical Report for
Rover Mines Ltd.

Your letter of August 19th to Rover Mines Ltd. has been forwarded to us for reply.

- (1) The subject maps have been revised to include "To accompany Report on the Geophysical Survey, Burnt Basin Area, B.C., Rover Mines Ltd."
- (2) The locations designated on Page 8 have been checked, and are circled in red pencil. It refers to the electromagnetic survey, and the e.m. anomalies do not coincide with the magnetometer anomalies. They are listed under a separate heading.
- (3) The magnetometer employed is a Sharpe PMF-3 Fluxgate airborne mounted and records readings in units of 100 gamma.

The electromagnetic system is described in the report and equipment has been specifically designed for our purpose. Basically, 200 feet of cable attached to the bottom of the aircraft through which an electric current is transmitted in the range of 1000 cycles per sec. A small 10 oz. receiving bird is drawn behind the aircraft and this bird is powered by its own mercury cell and oriented with the receiving coil at 90° to the transmitted field. A second receiver in the aircraft produces readings of .1 ma.

Computer processing employs a Univac 1108 which is based in Calgary. Data is transmitted by wire service.

The copies of the report and maps is being returned herewith for your approval.

I hope this is the information you require, and thank you for bringing the matter to our attention.

Yours very truly,



Harvey H. Cohen, P.Eng.

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of THE MINERAL ACT
AND
IN THE MATTER OF ROVER MINES LTD. (N.P.L.)

SUB-MINING RECORDER
RECEIVED
JUN 26 1969
M.R. # 36355E \$ 96⁰⁰
VANCOUVER, B. C.

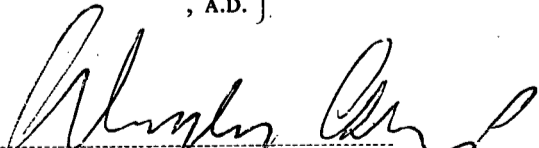
I, JOHN ROTTER,
of 1625 - 15th Street, West Vancouver,

in the Province of British Columbia, do solemnly declare that I am President and a Director
of ROVER MINES LTD. (N.P.L.) and that:

1. The said Rover mines Ltd. did pay to Harvey H. Cohen, P.Eng., the sum of \$3,000.00 for an Airborne Geophysical survey as described in the report of the said Harvey H. Cohen, P.Eng., dated the 5th day of November, 1968, and two copies of which are filed herewith.
2. That I have executed and filed herewith Form B in duplicate in respect of the company's properties which were the subject of the report and survey referred to in paragraph 1 hereof.
3. That I have executed and filed herewith Form 1 in duplicate in respect of the company's properties which were the subject of the report and survey referred to in paragraph 1 hereof.
4. That two copies of the map of the airborne survey referred to in paragraph 1 hereof on a scale of 1" equals 500' are filed herewith.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 23rd
day of June, A.D.
1969.



A Commissioner for taking Affidavits within British Columbia or
- A Notary Public in and for the Province of British Columbia -

HARVEY H. COHEN ENGINEERING LTD.

CONSULTING ENGINEERS

TELEPHONE: BUS.: 684-6711
RES.: 266-8169

1264 WEST PENDER STREET
VANCOUVER 1, B. C.

November 5, 1968

Rover Mines Ltd. NPL
c/o 555 Howe Street,
Vancouver 1, B.C.

RE: Geophysical Survey:- Electromagnetic
and Magnetometer over Mt. View M.C.'s
Burnt Basin Area, B.C., Greenwood
Mining Division including area
11500 ft. by 8500 feet at 500 ft.
grid spacing: Positioning and base
expense, aircraft charter, instrumentation,
preparation of grid, survey, compilation
of data, computer processing time,
plotting of results, maps, and report...

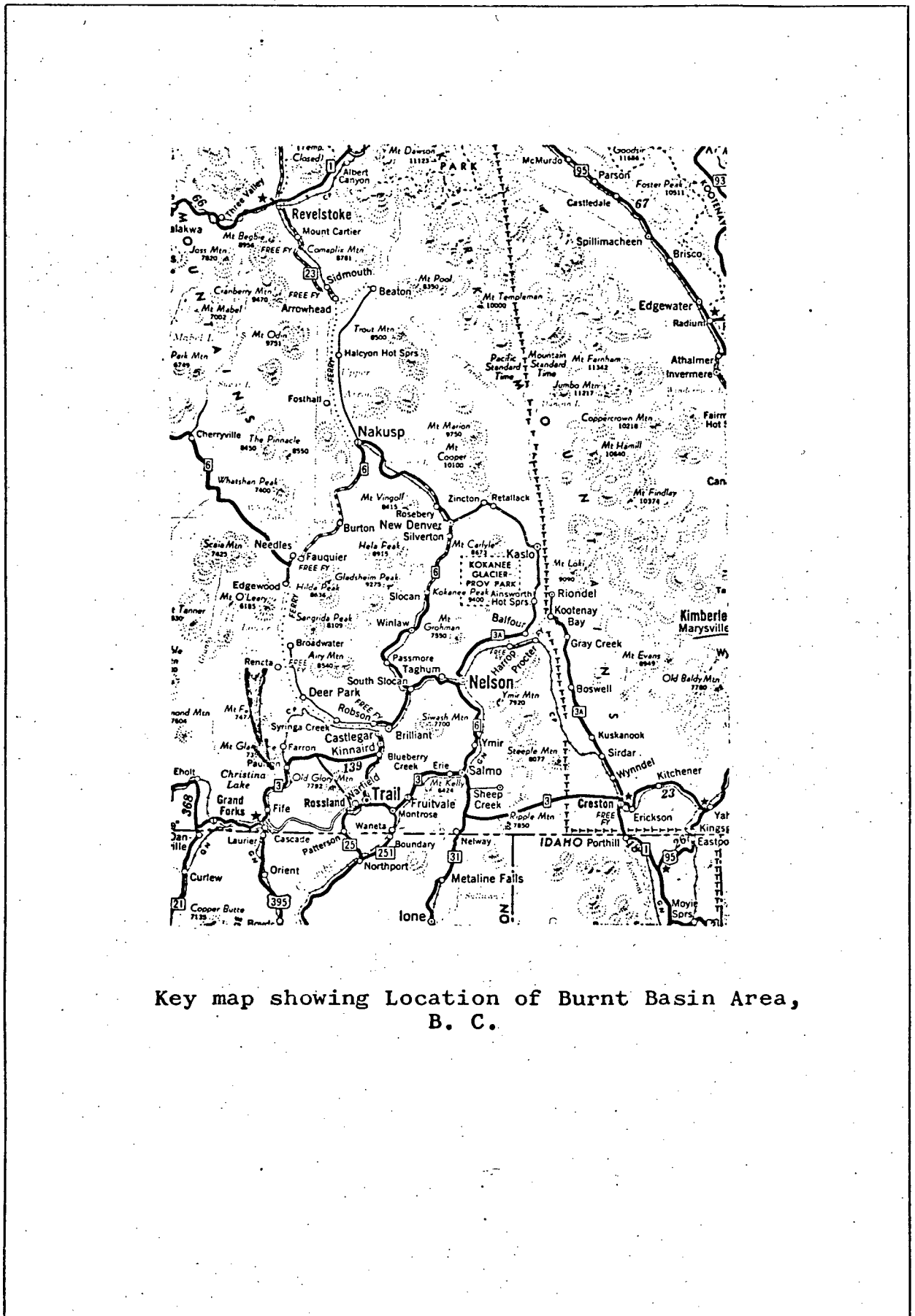
Contract price..... \$3000.00



REPORT ON THE
AIRBORNE GEOPHYSICAL SURVEY
BURNT BASIN PROPERTY
GREENWOOD MINING DIVISION

* * * * *

ROVER MINES LTD.
Vancouver, B.C.



Key map showing Location of Burnt Basin Area,
B. C.

HARVEY H. COHEN ENGINEERING LTD.

CONSULTING ENGINEERS

TELEPHONE: BUS.: 684-6711
RES.: 256-8169

1264 WEST PENDER STREET
VANCOUVER 1, B. C.

November 5th, 1968

Rover Mines Ltd. NPL
555 Howe Street
Vancouver 1, B. C.

Burnt Basin Property
Airborne Geophysical Survey
File: 68-168

Dear Sirs:

Pursuant to your instructions, the writer has conducted a combined airborne geophysical survey over the Burnt Basin Property, Greenwood Mining Division during October, 1968 and submits herewith the maps prepared on the results of the Magnetometer and Electromagnetic surveys.

Respectfully submitted,



Harvey H. Cohen, P. Eng.



HHC/abc

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Maps: Key map showing Location of Burnt Basin Area, B. C.
Map showing Location of Burnt Basin Mineral Claims
Key map Flight Patter of Airborne Geophysical Survey-
Burnt Basin Property
Airborne Geophysical Survey - Magnetometer
Airborne Geophysical Survey - Electromagnetic

REPORT ON THE
AIRBORNE GEOPHYSICAL SURVEY
BURNT BASIN PROPERTY
GREENWOOD MINING DIVISION
OF
ROVER MINES LTD. NPL

INTRODUCTION

Location and Access:

The Rover Mines Ltd. property, consisting of 34 located mineral claims, is situated approximately 28 miles east of Grand Forks, B. C. along the B. C. Highway No. 3 (Cascade - Kinnaird cut off) and east of the Paulson Bridge and McRae creek. The property covers a relatively flat area at the headwaters of Texas creek - at an average elevation of 4500 feet above sea level in the Monashee Mountains.

It is reached by road from the Paulson Bridge turnoff or from the west by following the old road from Christina Lake - providing access to the various properties in the Burnt Basin.

Grand Forks, the nearest supply centre, is situated along the Canadian Pacific Railway and on B.C. Highway No.3, and is serviced by regular bus and freight lines.

Geographically, the location may be described as:-

Latitude: 49°11'N Longitude:-118°09'W

SUMMARY OF CLAIMS

Mt. View 1	27662	Ad Astra 1	27528 -
Mt. View 2	27663	Ad Astra 2	27529 -
Mt. View 3	27664	Ad Astra 3	27530 -
Mt. View 4	27665		
Mt. View 5	27666	Leo 3	27509 -
Mt. View 6	27667	Leo 4	27510 -
Mt. View 7	27668		
Mt. View 8	27669	Leo 13	27517 -
Mt. View 9	27670	Leo 14	27518 -
Mt. View 10	27671	Leo 15	27519 -
Mt. View 11	27672		
Mt. View 12	27673	Leo 17	27686 ✓
Mt. View 13	27674	Leo 18	27687 ✓
Mt. View 14	27675	Leo 19	27688 ✓
Mt. View 15	27676	Leo 20	27689 ✓
Mt. View 16	27677		
Mt. View 17	27678	West Halifax	28172 ✓
Mt. View 18	27679		
Mt. View 19	27680		
Peer	27693		

Dates: 27662 - 27680
27693
27528 - 27530
27509 - 27510
27517 - 27519
27686 - 27689
28172

July 2, 1968
July 2, 1968
May 27, 1968-
May 24, 1968
May 27, 1968
July 2, 1968
Sept.30, 1968

GEOPHYSICAL INVESTIGATIONSMagnetometer Survey:

The purpose of the magnetometer survey was to determine the existence of any magnetic or non-magnetic anomalies on the property, and if so, what was their size, magnetic intensity, and probable cause. An anomaly would result from the presence or absence of any magnetic accessory minerals in the underlying rock formations in detectable quantity; the magnetic survey would differentiate between the volcanic and intrusives and detect magnetic sulphides that could possibly be associated with valuable minerals.

Using these factors as a guide, the geophysical survey was conducted over the area adequately covering the mineral claims held by your company, in 34 line miles.

Factors which produce variations in the magnetic field are: -

1. A concentration of magnetic minerals possibly associated with valuable minerals.
2. A variation in amount of accessory magnetite in granitic, volcanic, or redimentary bedrock.
3. A variation in amount of magnetite distributed through or connected with the overburden.

4. A variation in depth of non-magnetic overburden on caprock over bedrock having a constant vertical magnetic intensity.
5. Variation in amount of magnetic minerals in adjacent bands of volcanic and/or sedimentary rocks. These variations are not expected to be great, and produce elongated highs and lows parallel to the strike of the formation.
6. Any combination between variations in magnetic minerals in the rock and variations in the thickness of the overlying magnetic or non-magnetic overburden or caprock.

It will be seen from the above factors that the geophysical survey employing a magnetometer produces information that would assist in providing a structural picture as well as indicating favorable areas of greater geologic significance for further exploration.

Electromagnetic Survey:-

This survey, conducted simultaneously with the magnetometer survey, measures the change in mutual impedance between a pair of coils as the impedance is affected by nearby conductors of electricity. The equipment employed transmits a field through a 65 foot coil at 1,000 cycles per second. The coil is housed in a bird drawn by the aircraft, and records any fields produced by the transmitted field.

Radioactivity Survey:

The radioactivity was measured continuously employing a DR-229 Nucleometer constructed specifically for airborne work. It is a 24 tube, highly sensitive instrument. This survey system was employed to investigate any zones of radioactivity that may be caused by certain weathered products associated with mineralized zones.

PROCEDURE

The Rover Mines Ltd. property, the area covered by the Mt. View group was covered by 34 line miles of survey. Due to the nature of the topography, flight lines were flown at a heading of 289° (T) in order to conform to the general contour and maintain a near constant height above ground.

The east-west lines were flown at a 500 foot grid spacing, at an elevation of 500 feet above ground, and at a constant speed of 113.7 miles per hour.

Instrumentation was continuous and readings were photographed at intervals to record data at 500 foot stations. Flight lines, 17 in number were flown 11,500 feet in length plus turning and reorienting distance. The flight pattern

and grid lines were plotted in advance on topographic maps 1:50000 scale utilizing prominent landmarks as visual reference points.

The resulting readings and their coordinates were key punched and the data processed by a Univac 1108 computer and plotter. The enclosed maps are the results of the computer process.

ANALYSIS OF RESULTS AND CONCLUSIONS

Magnetometer Survey:

The results of the magnetometer survey have indicated definite structural trends in a east-west direction with anomalous zones of greater than average magnetic intensity. 2000 gamma base was set for the average characteristic of the underlying rocks. Two separate structural features are evident. The most southerly feature trends from Flight Line 6 West 1 westerly approximating the Flight Line 4. The second feature parallels Flight Line 10 from east to west.

The differential magnetic intensity recorded is indicative of a contact between two rock types, probably of intrusive origin having a minor difference in magnetite

accessory mineral. The differential is not great and the isogonic lines plotted are long, parallel to the structure.

The area covered by Mt. View Nos. 1, 2, 3 reveals anomalies of low magnetic intensity adjacent to and east of a magnetic high. This area may produce a zone of exploratory interest in that the anomalies on Mt. View No. 3 conform to greater than average conductivity recorded by the electromagnetic survey.

The anomalous zone measures approximately 4000 feet in length by 800 feet in width with a differential of over 2500 gamma.

Other variations of minor intensities are due to depth of overburden in the flat area surrounding the lake on Mt. View No. 11 mineral claim.

Electromagnetic Survey:

Recorded intensities of from plus 4 to plus 9 are considered the magnitude of disseminated sulphides. Outlined are zones of plus 5 magnitude to indicate those anomalies of higher than normal conductivity and those of greater significance due to their size are as follows:-

	<u>Centered at</u>	<u>Size</u>
1.	Flight Line 5 West 6	1000' x 500'
2.	Flight Line 3 West 12	400' x 400'
3.	Flight Line 3 West 16	600' x 500'
4.	Flight Line 7 West 18	400' x 400'

No. 1 anomaly coincides with that magnetic anomaly possessing polarity. This phenomenon is indicative of a sulphide body of moderate magnetic properties. It must be kept in mind the close association in the immediate area of zinc - lead ore with pyrrhotite - the latter being both slightly magnetic and conductive.

Other conductive zones towards the north part of the property could be due to electrolyte filled shears - being unrelated to any magnetic anomalies.

RECOMMENDATIONS

Employ a bulldozer, a D7 or equivalent to cut trenches through the overburden on the anomalous zones to expose bed-rock for geologic study.

A gas operated rock drill may be used to drill and blast fresh cuts for thorough geologic mapping and sampling.

Conduct a geologic mapping and reconnaissance of the area on 500 scale with detailed mapping of the new exposures on 40 scale.

Diamond drilling would follow to test at depth those zones exposed by stripping and trenching and reveal mineralization of geologic or economic significance.

A second phase of exploratory work would consist of diamond drilling any or all four anomalies that expose mineralization during the initial phase. The program would be detailed subsequently, but your company should prepare for a minimum of 3000 feet of core drilling.

ESTIMATES

Phase 1:-

Trenching, stripping, Access roads, - bulldozer	5000.00
Drilling and blasting open cuts	2000.00
Geologic mapping & reconnaissance	3000.00
Supervision and engineering	2000.00
Transportation, camp, supplies	4000.00
Diamond drilling 1000' AX	8000.00
Miscellaneous & contingencies, assays etc.	<u>3000.00</u>
Total Phase 1	<u>\$27000.00</u>

Phase 2

Approximately 3000 feet AX core
drilling including transportation,
supplies, assays, engineering and
supervision \$30,000.00

The time required to complete Phase 1 is estimated to be approximately 2 months to complete, and Phase 2 an additional 2½ months to complete.

While the geophysical survey was confined to the Mt. View claims to the north, it is the writers opinion that the recommended program be conducted on the Leo, Ad Astra, and West Halifax claims. In this area, old workings expose mineralization in the form of vein systems within the limestone horizon. The pits and trenches warrant stripping and blasting to provide a geologic study of the formation prior to drilling. The exposed sulphides consist chiefly of sphalerite, galena, pyrrhotite, pyrite, with associated values in silver and gold.

C E R T I F I C A T E

I, Harvey H. Cohen of 8438 Wiltshire Street, Vancouver 14, British Columbia hereby certify that;

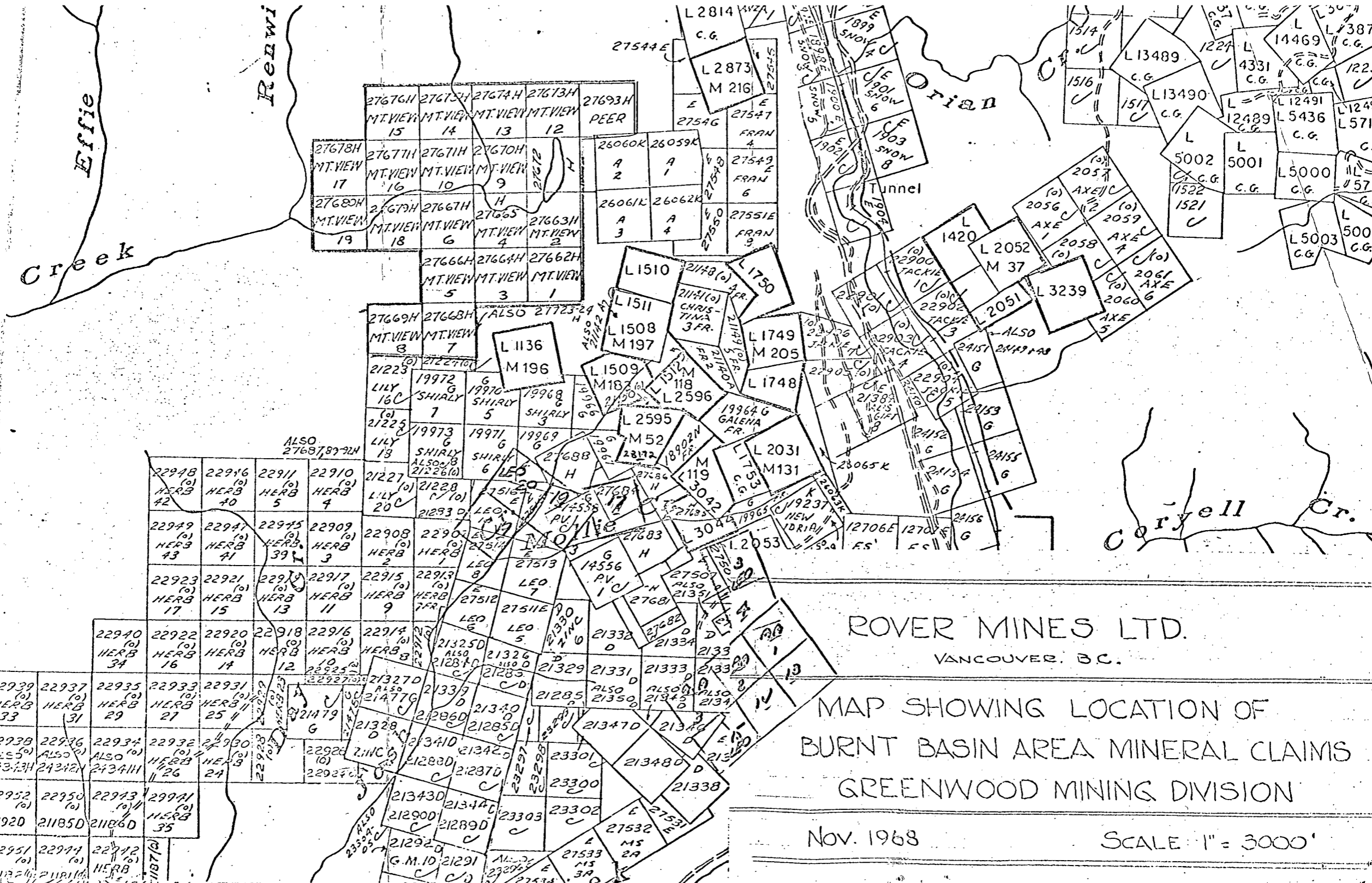
1. I am a graduate of the University of British Columbia B Ap Sc in Mining Engineering.
2. I am a registered Professional Engineer in the Province of British Columbia since 1954 and have been Practising my profession for 19 years.
3. I have no direct or indirect interest in Rover Mines Ltd. NPL nor in any securities of the company actively engaged in exploring this property.
4. I have no expectation of receiving or obtaining any interests in securities of Rover Mines Ltd. NPL
5. Information contained in the accompanying report is based on my personal work in the field on the property and the survey conducted under my direction during the October period 1968.

Harvey H. Cohen

Harvey H. Cohen, P.Eng.

To accompany Report on the Geophysical Survey of the Burnt Basin Property of Rover Mines Ltd. NPL, Greenwood Mining Division dated November 5th, 1968.

HC



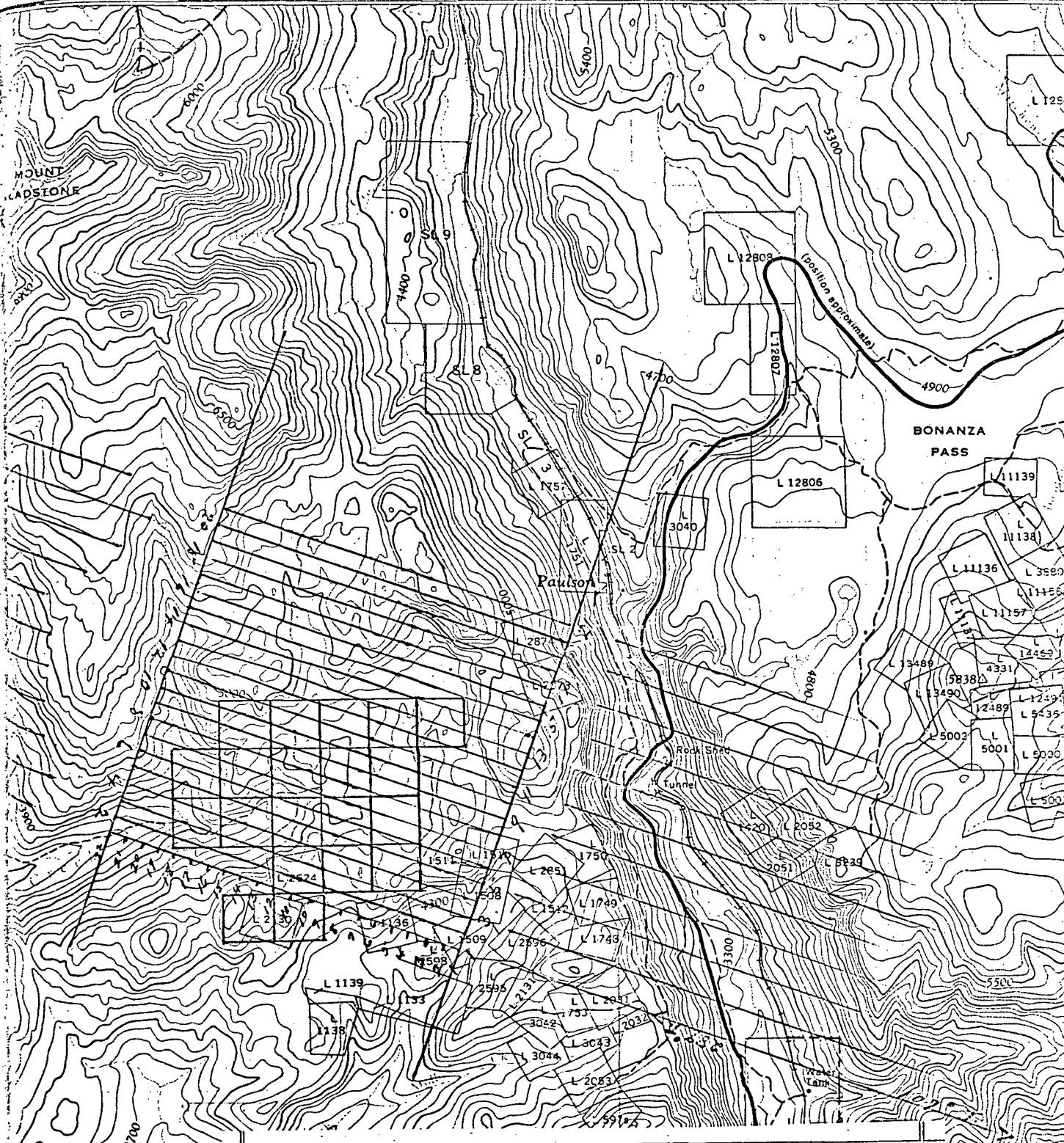
ROVER MINES LTD.
VANCOUVER, B.C.

MAP SHOWING LOCATION OF
BURNT BASIN AREA MINERAL CLAIMS
GREENWOOD MINING DIVISION

Nov. 1968

SCALE 1" = 3000'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1920 MAP #1



ROVER MINES LTD.
 VANCOUVER, B.C.
 KEY MAP FLIGHT PATTERN
 OF AIRBORNE GEOPHYSICAL SURVEY
 BURNT BASIN PROPERTY
 SCALE: 1:50,000
 Nov. 1968

Lafferty
 Water Tank

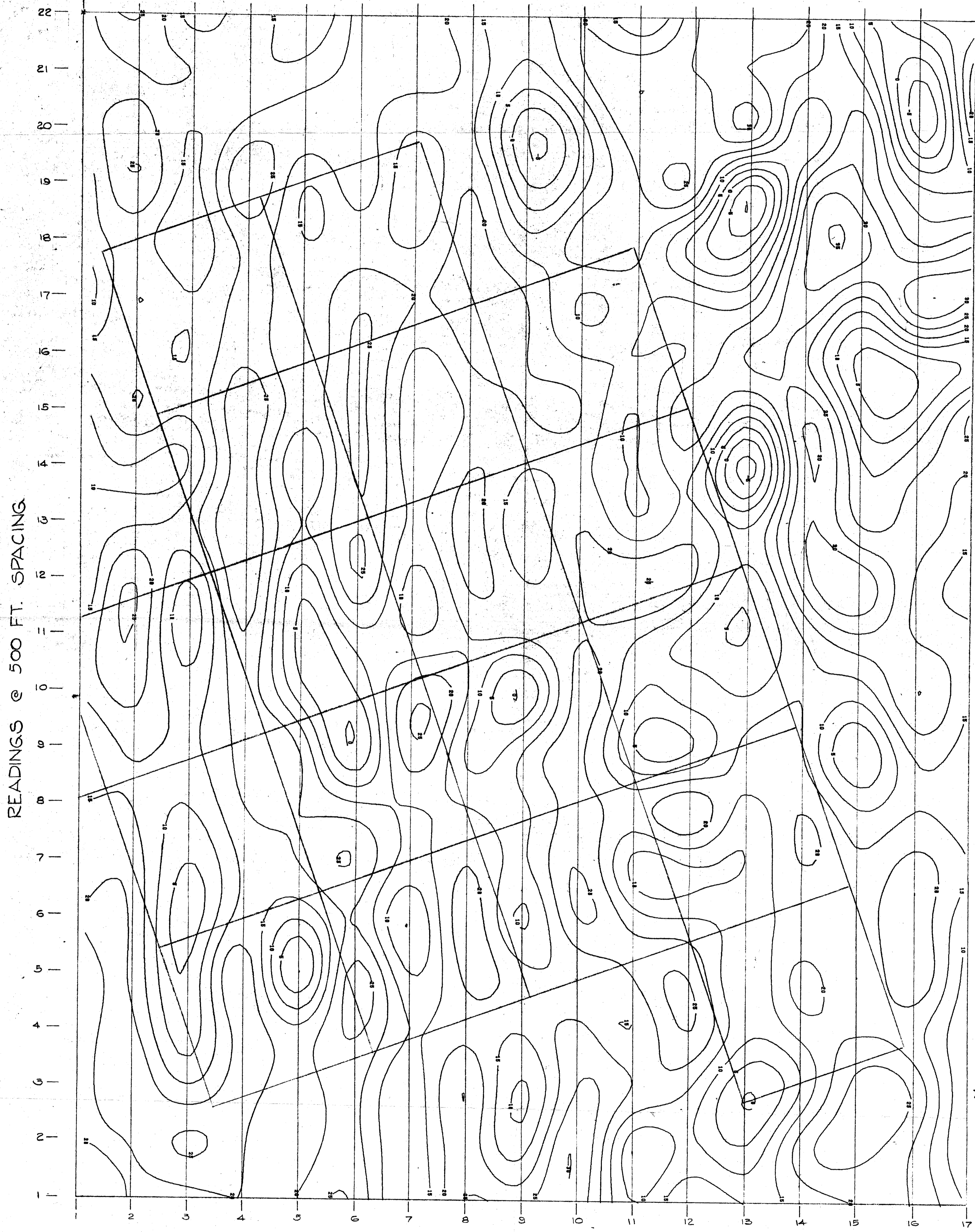
MONASHEE

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1920 MAP #2

AIRBORNE MAG.-BURNT BASIN, B.C. GREENWOOD MINING DIV.

X = -22.00
Y = 1.00



FLIGHT LINES @ 500 FT. SPACING: 289° T

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1920 MAP # 3

READINGS - 100 GAMMA
BASE 2000 GAMMA

To accompany Report on the Airborne Geophysical Survey
Burnt Basin Property
Nov. 5 / 1968

HARVEY H. COHEN ENGINEERING LTD.
1204 WEST PENDER STREET, VANCOUVER 1, B.C.

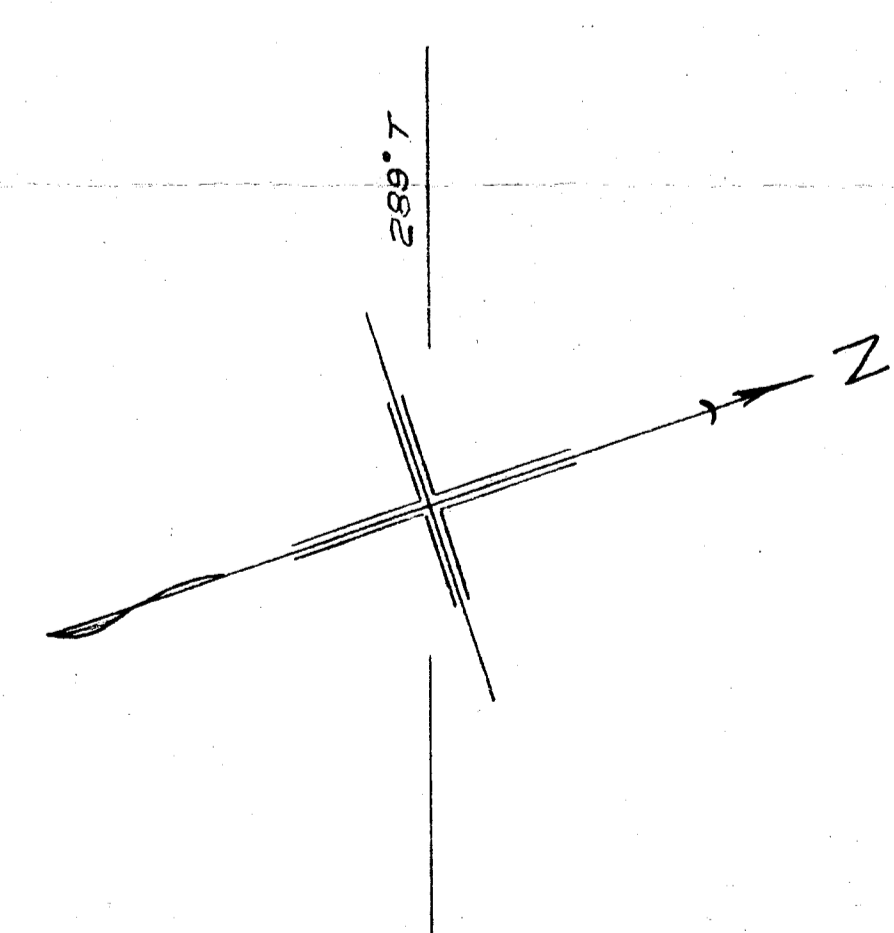
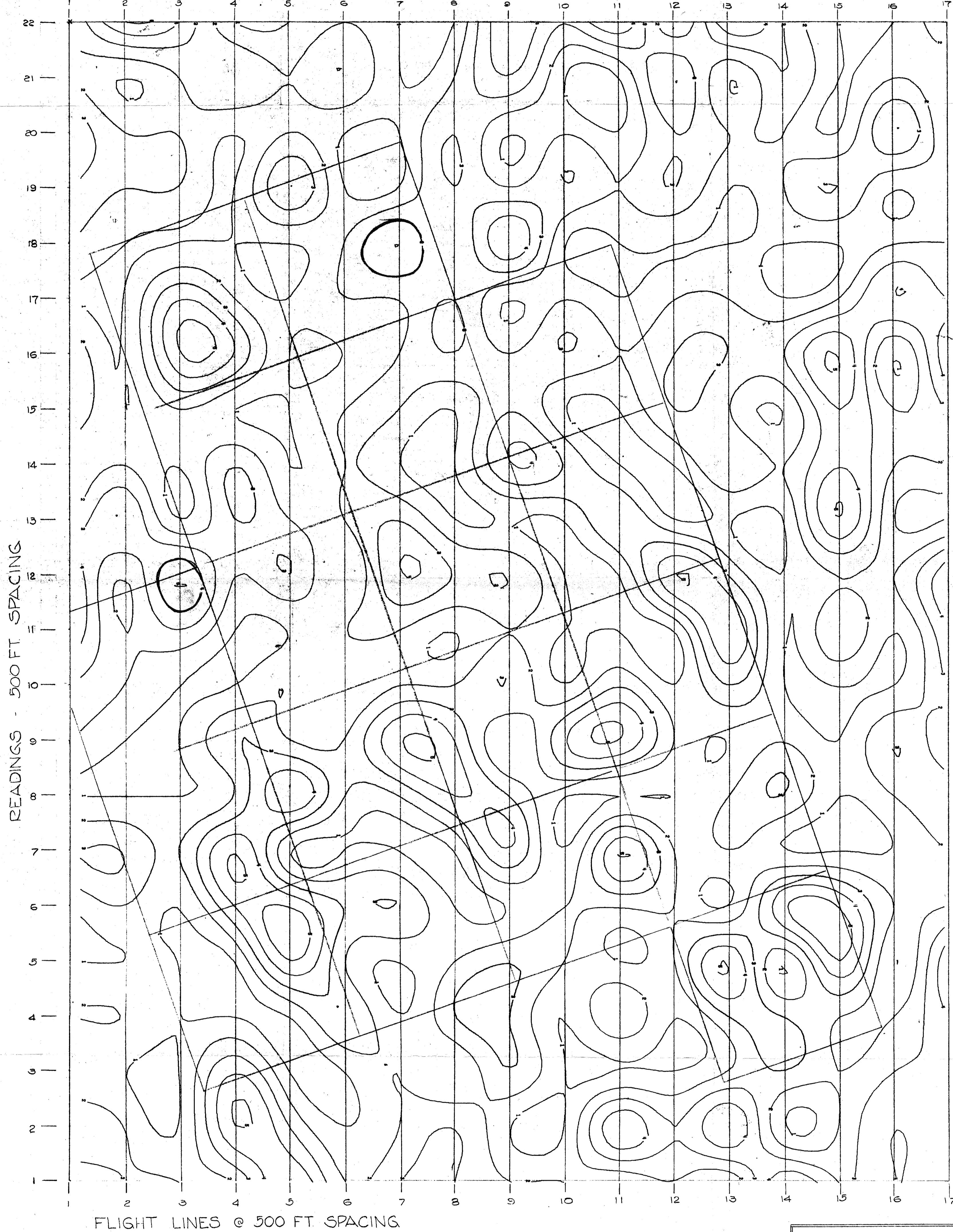
ROVER MINES LTD. NPL VANCOUVER, B.C.
AIRBORNE GEOPHYSICAL SURVEY MAGNETOMETER BURNT BASIN AREA, B.C.
SCALE: 1" = 500' DATE: OCT. 1968
68-168-3

1920

AIRBORNE MAG.-BURNT BASIN, B.C. GREENWOOD MINING DIV.

X = 4
-22.00
1.00

FLIGHT LINE (289°T)



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1920 MAP # 4

LEGEND

READINGS IN AMP.

Sig + 4

To accompany Report on the Airborne Geophysical Survey
Burnt Basin Property
Nov. 5, 1969

ROVER MINES LTD. NPL. VANCOUVER, B.C.
AIRBORNE GEOPHYSICAL SURVEY ELECTROMAGNETIC BURNT BASIN AREA, B.C.
SCALE: 1" = 500' DATE: OCT. 1968 H.C.
HARVEY H. COHEN ENGINEERING LTD. 1284 WEST PENDER STREET, VANCOUVER 3, B.C.
68-168-2

1920