

3919

ELECTROMAGNETIC SURVEY  
ON THE 82F/14W  
MOUNTAIN CHIEF PROPERTY

SLOCAN M.D.

B.C.

117 - 50 - NE

20-7-72: 3-8-72

For:

NEW DENVER EXPLORATIONS LTD. (NPL)  
470 Granville Street  
Vancouver, B.C.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3919 MAP

By:

ALLEN GEOLOGICAL ENGINEERING LTD.  
325 Howe Street  
Vancouver, B.C.

August 14, 1972

CONTENTS

INTRODUCTION..... 1.

LOCATION AND ACCESSIBILITY..... 1.

TOPOGRAPHY..... 2.

PROPERTY..... 2.

GEOLOGY..... 2.

ELECTROMAGNETIC SURVEY..... 3.

SURVEY RESULTS..... 4.

CONCLUSIONS..... 6.

RECOMMENDATIONS..... 7.

REFERENCES..... 9.

- MAPS:   #1 Location Map  
          #2 Electromagnetic Survey  
          #3 Detailed Electromagnetic Survey

\* \* \* \* \*

ELECTROMAGNETIC SURVEY

MOUNTAIN CHIEF PROPERTY

SLOCAN M.D. B.C.

INTRODUCTION

An electromagnetic survey was conducted over the northern part of the Mountain Chief property, July 20 - August 3, 1972 by Allen Geological Engineering Ltd.

From three base lines, cross lines were established over the area at 400-foot intervals and stations set at 100-foot intervals along all lines. Red and blue flagging was used on all stations and lines.

Scintrex S E - 300 instruments were used.

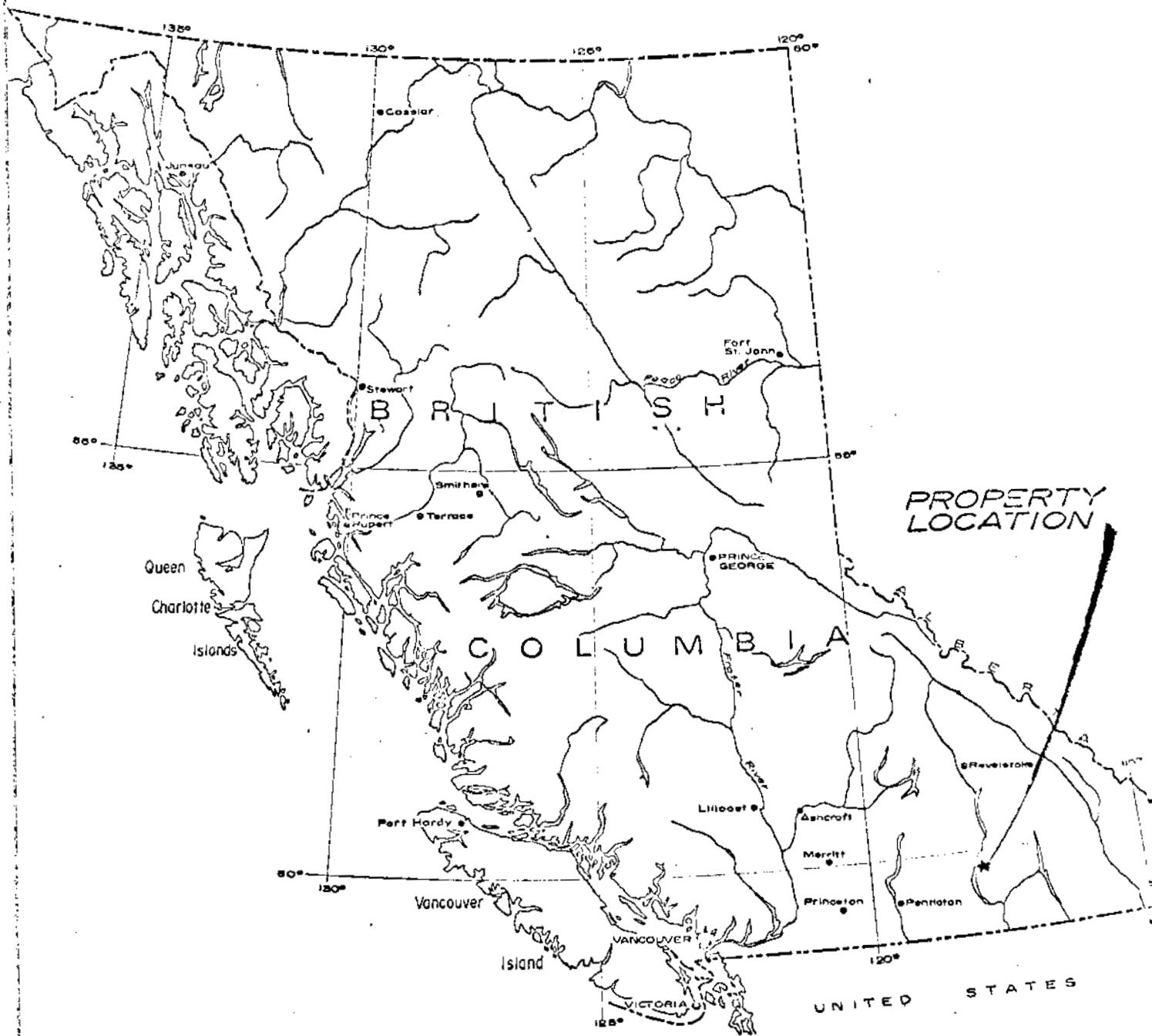
The purpose of the survey was to detect zones of sulphide mineralization similar to those from which high-grade silver-lead-zinc has been mined.

LOCATION AND ACCESSIBILITY

The property is located two miles southeast of the village of New Denver in southeastern British Columbia.

The Mountain Chief and Mammoth crown granted claims, along with fourteen located claims, lie on the south side of Carpenter Creek.

Access is by road  $1\frac{1}{2}$  miles up Carpenter Creek from Highway 6. This is the old Sandon road.



**Department of**  
**Mines and Petroleum Resources**  
**ASSESSMENT REPORT**  
 NO. 3919 MAP # 1

NEW DENVER EXPLORATIONS LTD.	
LOCATION MAP	
SCALE: 1" = 136 Mls.	
Drawn by	Date AUGUST 1972
Checked by	Drg. no.
ALLEN GEOLOGICAL ENGINEERING LTD. <i>Allen</i>	

TOPOGRAPHY

The property is located on the steep slopes of Carpenter Creek. Mountain Chief and several other small creeks flow north into Carpenter Creek which flows west into Slocan Lake.

PROPERTY

The property includes the following mineral claims:

Mountain Chief,	C.G.	L 474
Mammoth,	C.G.	L 1910
PET 1-4	inclusive	
PET 9-14	"	
RT 1-4	"	

GEOLOGY

The property is underlain by slate, argillite, tuff, limestone and conglomerate of the Slocan Group. These stratified rocks are cut by dykes and stocks of granitic rocks. The Nelson batholith outcrops two miles to the south. The strata are highly folded and fractured and the predominant attitude is a northwest strike and southwest dip.

Sulphide minerals replace a 2-foot limestone bed. This is intersected by the Apex and Mountain Chief quartz veins. Heavy concentrations of sphalerite, galena with some pyrite and chalcoppyrite occur in the veins.

ELECTROMAGNETIC SURVEY

A grid was surveyed over the northerly part of the property to include the known veins and limestone replacement body. Because of the local topography three base lines were established in a southwest direction along the sidehill. Cross lines were surveyed in a southeast direction every 400 feet. Stations were placed along all lines at 100-foot intervals.

The "broadside" method was used, followed later by the "detail" method.

The broadside method involved an operator moving along one line with the transmitter coil and a second operator moving along an adjacent parallel line with the receiver coil. Readings were noted at corresponding stations, as follows:

Holding the transmitter coil vertical, with the axis directed towards the receiver coil, a transmission was made for about 20 seconds. The receiver coil was held in the horizontal position with axis directed toward the transmitter coil. The receiver coil was rotated until a null signal was attained through connected earphones. The average angle of tilt was observed and noted in a field book along with the station and line number. The tilt angle was indicated on a clinometer attached to the receiver coil.

The tilt angles are shown on the accompanying map. Transmitter locations are designated by "Tr" and an arrow in the direction of the receiver, on the adjoining line 400 feet distance.

The detail method involved the operator with the transmitter coil remaining stationary while the operator with the receiver coil progressed from station to station along a line. Transmission and reception were the same as for the broad-side method. Transmitter location is designated on the map by a triangle with a letter and the receiver line is marked with the corresponding letter.

Sulphide zones may be indicated when the audio frequency alternating magnetic field from a vertical loop transmitter is distorted by eddy currents set up by the zone cause a secondary field and thereby distort the primary field. The horizontal loop receiver detects this distortion and measures it by a tilt angle.

#### SURVEY RESULTS

The survey area is covered with overburden and light forest growth.

Four conductor zones were detected and these are designated as A, B, C and D.

##### Conductor Zone A

This zone is 2,400 feet long, and extends at  $70^{\circ}$ , from near the trail on the Mountain Treasure to the east boundary of the RT 1 claim. Tilt angles of 20 to 35 degrees were recorded on lines 24 and 28.

The most pronounced cross-over was on line 28.

Conductor Zone B

This conductor passes through the adit tunnels and extends parallel to conductor A across the Mountain Treasure and RT 1 claims. Tilt angles up to 36 degrees were recorded. This conductor is over 3,500 feet long. Detail on B indicates strong reaction at the intersection with conductor D.

Conductor Zone C

A third zone parallel to A and B crosses the Mountain Chief and extends to the central area of the RT 1 claim. Tilt angles up to 40 degrees were recorded, and good cross-overs were made on lines 0, 4, 8, 12 and 20. Detail showed a good cross-over on lines 12 and 16.

A weak conductor is indicated along the south boundary of RT 4, from 0 to 12.

Conductor Zone D

This strong cross conductor strikes at about 20 degrees, and extends from the central area of RT 4 to the intersection with B, on line 20, on the RT 1 claim. Tilt angles up to 30 degrees were measured. Detail indicated strongest cross-overs on lines 12 and 16.

The conductor zones may represent shears with or without sulphide mineralization. All four conductor zones warrant thorough investigation to ascertain bedrock conditions. The strongest conductors are recorded on line 16 at the intersection of B and D.



CONCLUSIONS

The electromagnetic survey of a selected area on the New Denver property indicated, by the broadside method, that four conductor zones lie up the hill and to the south and east of the known showings of the Mountain Treasure and Mammoth Crown Granted claims.

Silver-lead-zinc in at least three zones have been partially exposed by pits, shafts and adit tunnels in the past. Rich silver-lead-zinc shipments were made from these showings and reportedly from similar veins and replacement zones on Crown Grant Lot 4003 on the east boundary of the property.

Detailed electromagnetic checks were made over conductors B and D on lines 8 to 20 and stronger effects were noted.

It is concluded that a thorough exploration programme is warranted to test the property for silver-lead-zinc deposits similar to those mined on and near the property in the past.

RECOMMENDATIONS

A two-phase exploration programme is herewith recommended on the Mountain Chief property of New Denver Explorations Lt. (N.P.L.).

The first phase will be over the surface and the second underground.

The first phase will be directed towards exposing bedrock along the electromagnetic conductor zones.

Where silver-lead-zinc mineralization is exposed, the zones should be trenched to establish width, length and grade. The better zones should be checked to shallow depths by diamond drilling.

The second phase may be a winter programme of underground work, and should be detailed after results of phase #1 are available.

<u>Phase #1.</u>	<u>Estimated Costs</u>
1. Soil sample parallel to and down slope from the conductor zones,	\$ 1,500.00
2. Expose bedrock by bulldozing conductor zones,	8,000.00
3. Rock trench the zones of sulphide mineralization to de-limit and sample same,	3,000.00
4. Make detailed maps of the geology of all exposed bedrock,	1,500.00
5. Check the downward extensions of the mineralized zones by diamond drilling angle holes. Using AQ wire-line equipment drill 10 holes to 125-150 feet long,	15,000.00

<u>Phase #1. continued</u>	<u>Estimated Costs</u>
6. Office, overhead and supervision,	\$ 9,000.00
7. Contingencies,	<u>7,000.00</u>
Total estimated costs,	\$45,000.00

Phase #2.

This will be underground work on the mineralized zones as considered most practicable after the results of Phase #1 are tabulated.

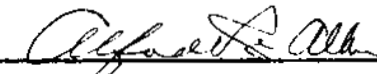
1. Crosscut to intersect zones of mineralization as indicated in the old workings and phase 1 data,	\$30,000.00
2. Drift and raise on zones of silver-lead-zinc mineralization as necessary to check tonnage and grade,	15,000.00
3. Office, overhead and supervision,	5,000.00
4. Contingencies	<u>5,000.00</u>
Total estimated costs,	\$55,000.00

Efforts should be made to complete surface work by October first.

The full programme, involving expenditure of \$100,000.00 will continue into the winter.

Respectfully submitted,

ALLEN GEOLOGICAL ENGINEERING LTD.

Per  P. Eng.  
Alfred R. Allen

601 - 325 Howe Street  
Vancouver, B.C.

August 14, 1972.

REFERENCES

- Cairnes, C.E., Geological Survey Canada Mem.173-1934  
Cairnes, C.E., " " " Mem.184-1935  
Hedley, M.S., B.C. Department of Mines Bul. 29  
DeBriske, A.L. Report, November 1966  
Price, F.L., Report, January 2, 1969  
Little, H.W., Geological Survey Canada Mem.308

\* \* \* \* \*

ALFRED R. ALLEN

ELECTROMAGNETIC SURVEY

SLOCAN M.D.

20-7-72 - 18-9-72

RT 1-4, PET 1-4, PET 9-14, Mountain Chief L 474, Mammoth L 1910

Expenditures

Crew

Alfred R. Allen, P.Eng., operator,	Vancouver, B.C.	\$ 430.00
T. Thomas, Operator,	Langley, B.C.	1,250.00
R. Thomas, Helper,	Langley, B.C.	540.00

Cash outlay

Transportation,	160.00
Motel and meals,	197.88
Equipment rental,	315.00
Maps,	25.00
Telephone	20.00
Office, mapping, stenographic	30.00

\$2,967.88

Declared before me at the *City*  
of *Mammoth*, in the  
Province of British Columbia, this *27th*  
day of *October*, 1972, A.D.

*Alfred R. Allen*

*G. Phillips*

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

SUB-MINING RECORDER

ALFRED R. ALLEN

ELECTROMAGNETIC SURVEY

SLOCAN, M.D.

20-7-72 - 18-9-72

RT 1-4, PET 1-4, PET 9-14, Mountain Chief L 474, Mammoth L 1910

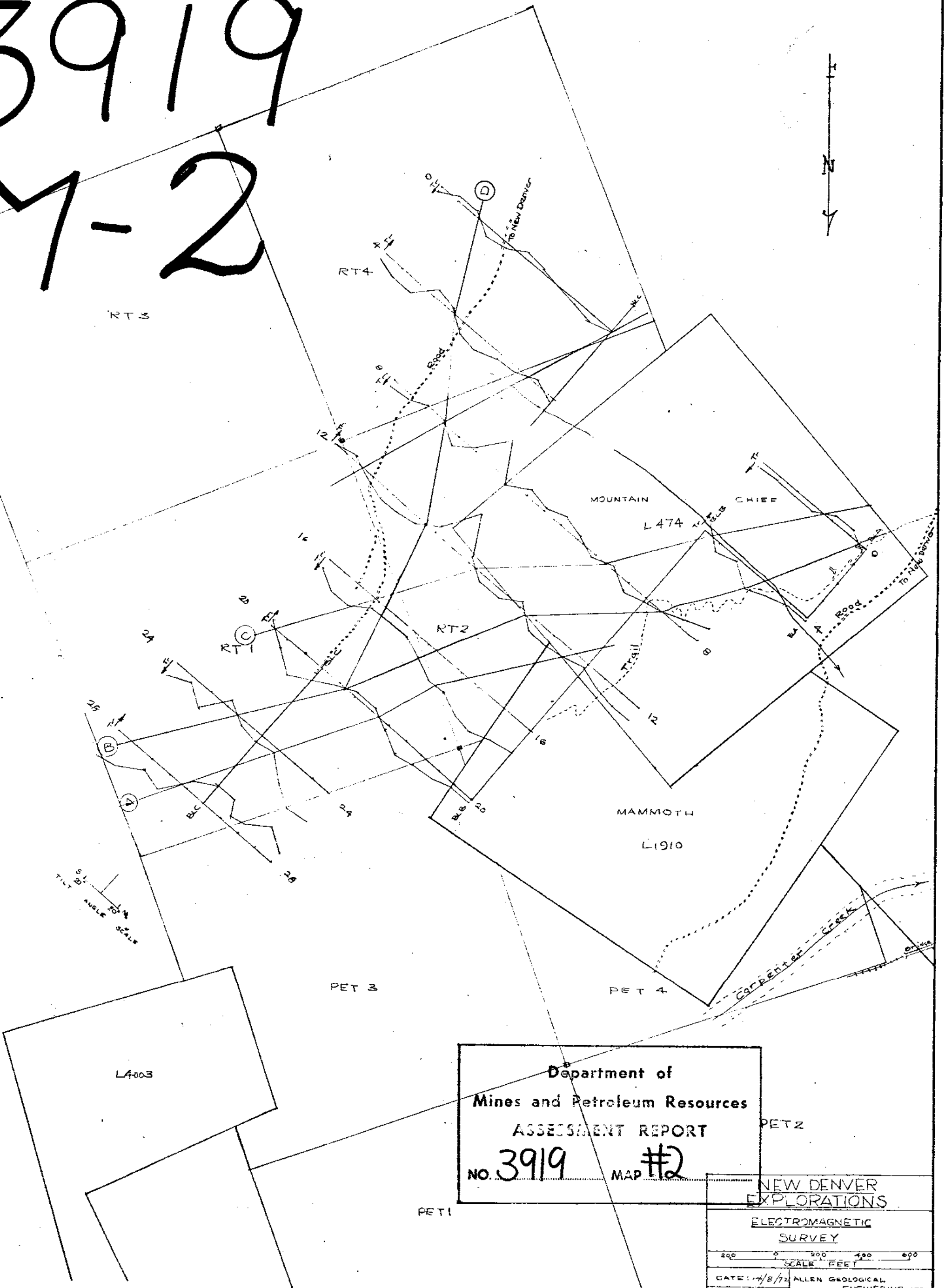
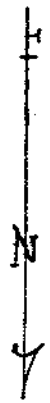
Crew

Alfred R. Allen, P.Eng., operator, Vancouver, B.C.

T. Thomas, operator, Langley, B.C.

R. Thomas, Helper, Langley, B.C.

3919  
M-2



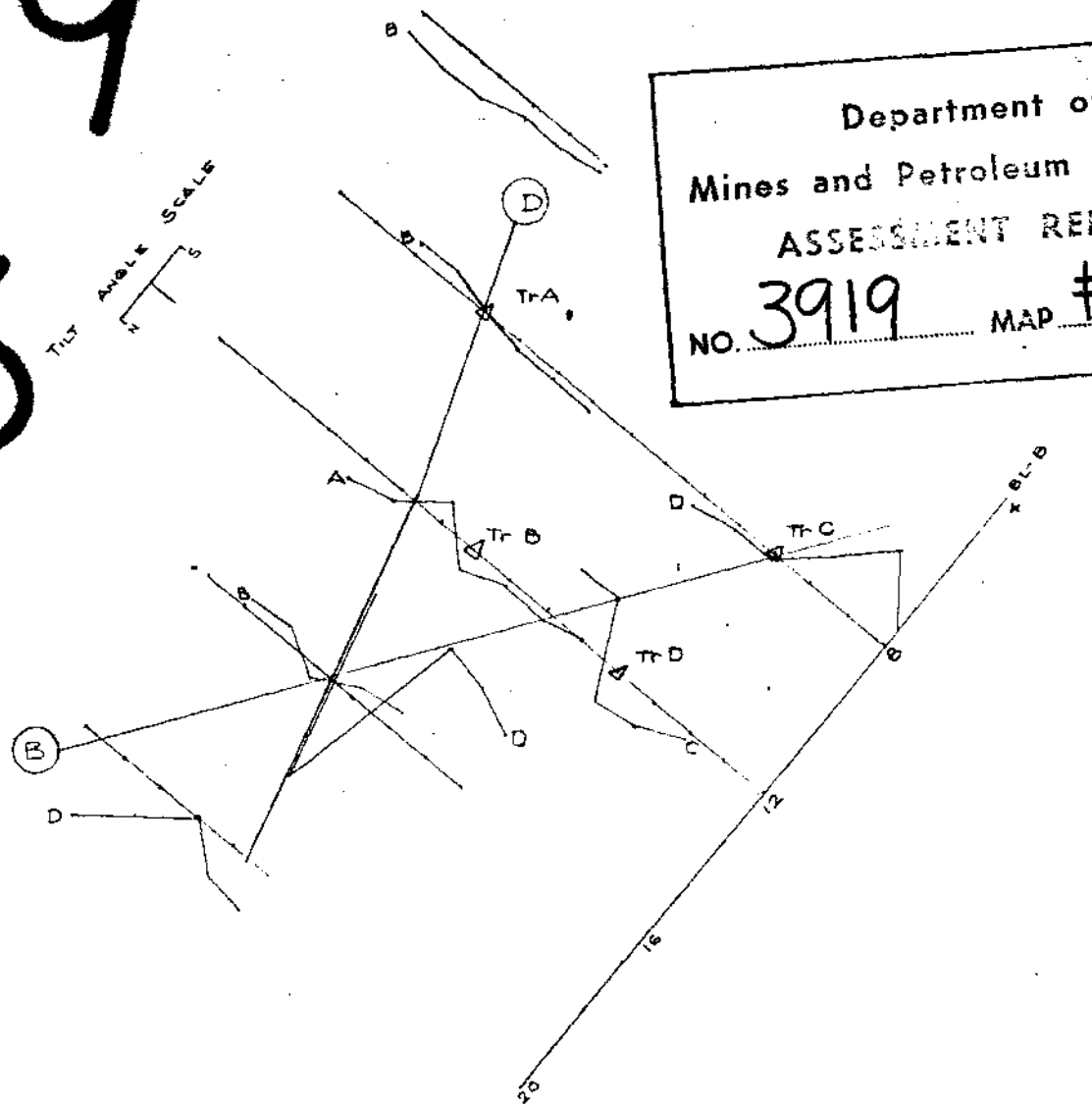
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3919 MAP #2

NEW DENVER  
EXPLORATIONS  
ELECTROMAGNETIC  
SURVEY  
SCALE FEET  
DATE: 4/8/72 ALLEN GEOLOGICAL  
ENGINEERING LTD  
No. 1 per: *Allen* P.E.

NOTE: Scintrex SE-300 Instruments Used

3919

M-3



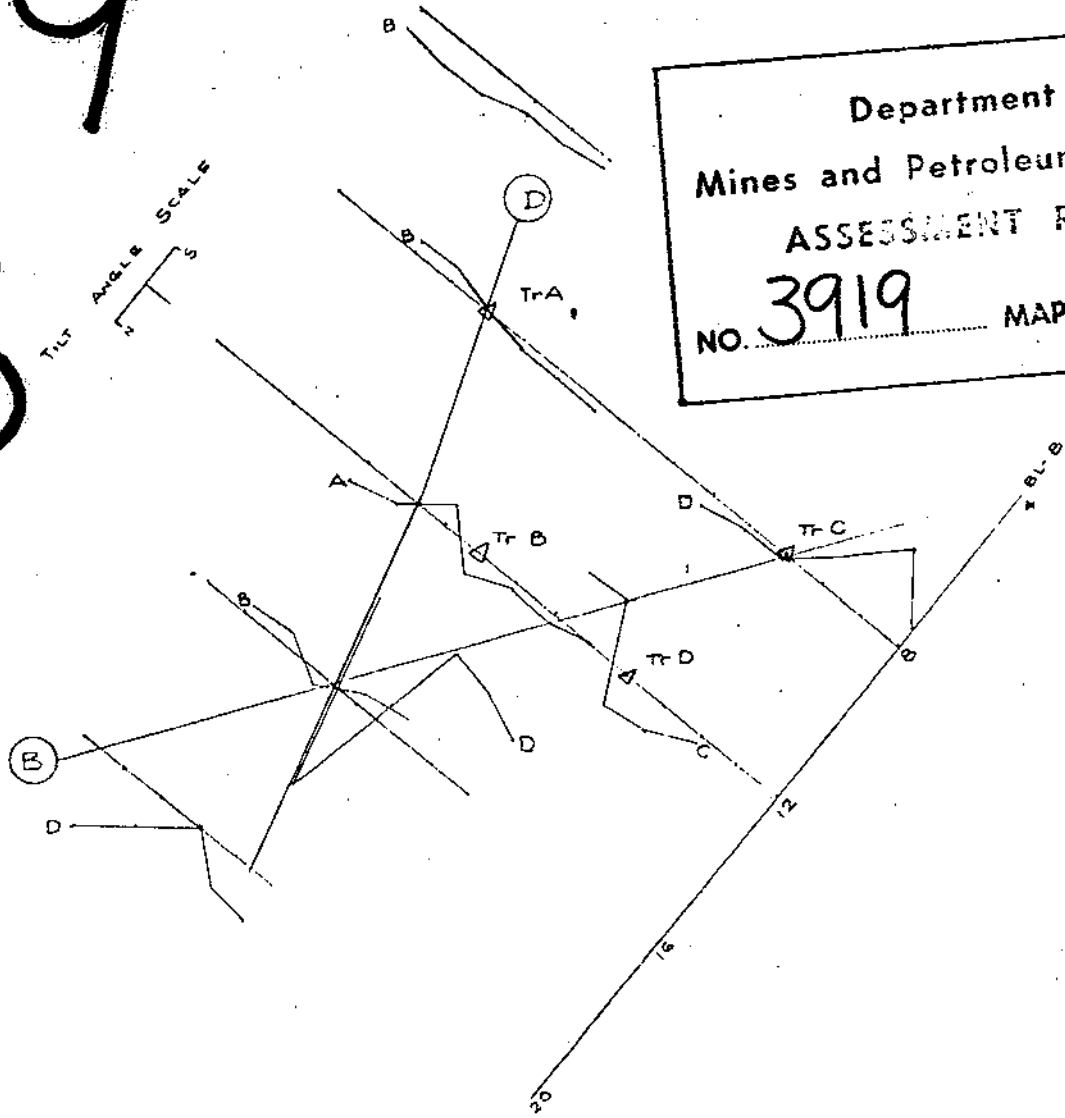
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3919 MAP #3

NEW DENVER EXPLORATIONS				
ELECTROMAGNETIC SURVEY DETAIL				
200	0	200	400	600
SCALE - FEET				
DATE: 14/6/72	ALLEN GEOLOGICAL ENGINEERING LTD			
No :	Per: <i>Allen</i>			



3919

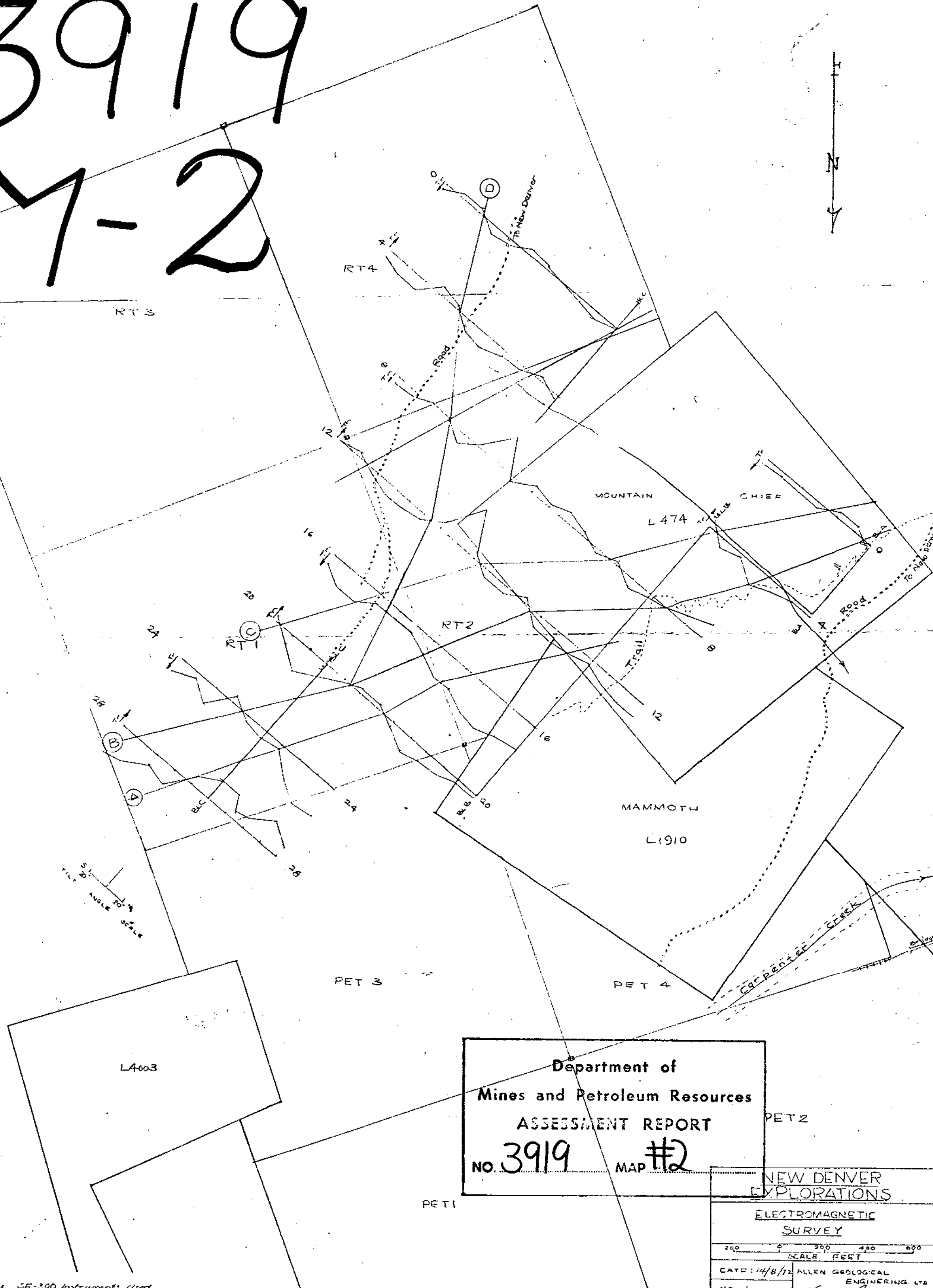
M-3



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3919 MAP #3

NEW DENVER EXPLORATIONS	
ELECTROMAGNETIC SURVEY DETAIL	
200 0 200 400 600 SCALE - FEET	
DATE: 11/5/72	ALLEN GEOLOGICAL ENGINEERING LTD
No :	By: <i>Robert Allen</i> 90m

3919  
M-2



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3919 MAP #2

NEW DENVER EXPLORATIONS	
ELECTROMAGNETIC SURVEY	
SCALE FEET 200 400 600	
DATE: 11/4/72	ALLEN GEOLOGICAL ENGINEERING LTD
NO. :	see [Signature] PER

NOTE: Sintrex SE-300 Instruments Used