

84-#658(b)-13356

REPORT ON
GEOLOGICAL AND GEOCHEMICAL SURVEY

CONDUCTED ON THE
GEO I AND III MINERAL CLAIMS
VERNON MINING DIVISION
BRITISH COLUMBIA
N.T.S. 82E/15 AND 82E/16

Longitude 49° 56' N. Latitude 118° 29' W.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,356
PART
3 OF 5

Owners of the Claims:
Operator:
Author:
Dated:

Amore Minerals Corporated
Mohawk Oil Co. Ltd.
B. Callaghan, B. Sc.
April 10, 1984

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INTRODUCTION

Work applied to a portion of the GEO III Mineral Claim has included a program of follow-up geological mapping, prospecting and geochemical soil sampling over a survey grid previously established by Glen E. White, Geophysical Consulting and Services Ltd., on behalf of Amore Minerals Incorporated. The survey grid represents a section of the old International Mine surveys grid near Horseshoe Lake in the area of Lightning Peak.

SUMMARY

A northeast extension of a lead, silver, geochemical anomaly initially determined from a soil sampling programme over the Geo III Mineral Claim in 1980 occurs on lines 4+20S, 5+40S and 6+60S, just east of the eastern claim boundary. The source of this anomaly may be related to sulphide enriched greenstone as determined from a diamond drilling programme, conducted by Amore Minerals Inc., in which three holes were collared over the anomaly to the south, in 1981.

The potential for skarn-type minealization associated with silver, sphalerite and lead within this northeast trending anomaly exists between lines 6+60S and 8+40S on the Geo III Mineral Claim. A programme of prospecting, detailed mapping, trenching and close spaced VLF-EM is recommended to expose this possible northeast structure between lines 6+60S and 8+40S in the vicinity of the Amore diamond drill holes collared in 1981.

LOCATION AND ACCESS

The Geo I and Geo III Mineral Claims are located within the Monashee Mountains of southern British Columbia, approximately 2 kilometres northeast of Lightning Peak, map sheets NTS 82 E/15 and 82 E/16, latitude $49^{\circ} 56' N$, longitude $118^{\circ} 29' W$.

Access to the claims is via the Lightning Peak road which joins Highway 6 approximately 110 kilometres southwest of Vernon. Access can also be gained to Lightning Peak via a newly established extension of the K-50 logging access road which leaves the Kettle River logging road at 62 kilometre. The Kettle River road intersects Highway 6 at Spruce Grove about 52 kilometres southeast of Lumby. The claims are staked in the vicinity of Horseshoe Lake which is located on the east side of the Lightning Peak road between the post office junction and Payday turn-off approximately 30 kilometres from Highway 6.

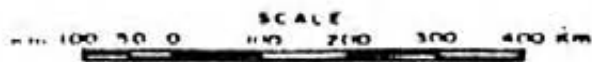


MOHAWK OIL Co. LTD.

GEO 1 & 3

LOCATION MAP

FIGURE 1



PHYSIOGRAPHY

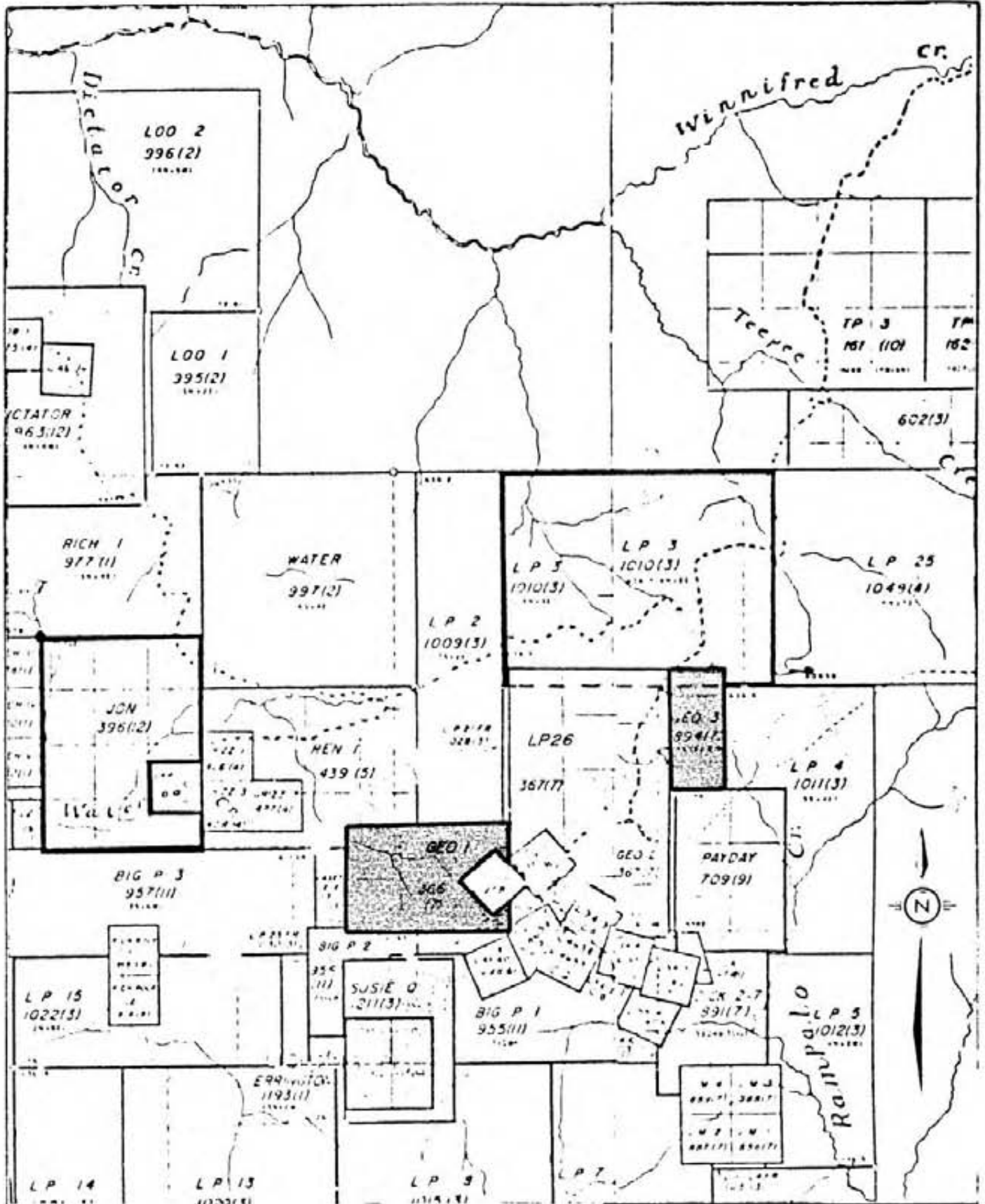
The claims are situated on the northeastern slopes of Lightning Peak. Elevations range between 1720 metres to 1900 metres. The area is drained by small intermediate to fast flowing streams that run underground for varying distances. Several swampy meadow areas occur in the vicinity of Horseshoe Lake where outcrop exposure is limited.

Forested areas include stands of Spruce, Jack Pine, Balsam and Alder with minor poplar.

PROPERTY

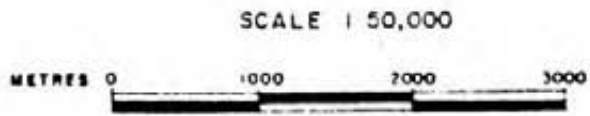
The Geo I and III Mineal claims are currently held by Amore minerals Incorporated and are optioned to Mohawk Oil Co. Ltd.

<u>Name Claim</u>	<u>No. Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Geo I	6	366	July
Geo III	5	894	Sept.



MOHAWK OIL CO. LTD.

CLAIMS MAP



DRAWN BY	DATE	DRAWING NO.
B.C	APRIL, 84	FIG. 2

HISTORY

The history of mining activity in the Lightning Peak area was first officially documented in 1904, and included an account of development work and production on three properties, including the Lightning Peak, Waterloo and Rampalo Claims. The latter was the first claim staked in the area during 1897. (B.C. Ministry of Mines, Annual Report 1904.) Subsequent prospecting led to the staking of the Killarney, Payday, Silver Lump, Potosi, Dictator and Lumby Claims at a time when small shipments of ore were made from the Waterloo and Lightning Peak properties. Ore shipments were taken out by pack horse over the Galloping Mountain trail and later by a snow trail that connected the main centres on Lightning Peak and with the Edgewood-Vernon road. Small scale high grade mining was practiced until approximately 1936, and a renewed interest in the area began at the Waterloo Property in 1948. This included mining of high grade silver, lead and zinc and construction of a mill in the early 1950's.

International Mine Services Ltd., staked 209 claims in 1968 in an area that extended east-west between and including, the Payday claims westwards, to the Waterloo Property and beyond.

Exploration work included a detailed geochemical soil sampling programme which established anomalous areas unrelated to known workings or showings. Several anomalous areas were established in the vicinity of Horseshoe Lake, an area covered by the Geo I and II Mineral Claims just north of and in close proximity to the old Crown Grants.

Initial work in 1978 included a programme of line cutting and soil sampling over a portion of the Geo II mineral claim in an attempt to verify and relocate geochem anomalies established by International Mine Services Ltd. Additional work in 1980 consisted of staking the Geo III mineral claim and extending the soil sampling survey to the south on to the old Crown Grants, 25 kilometres of the survey grid was covered with magnetometer and electromagnetometer surveys. Results from this programme indicated a lead, silver geochem. soil anomaly associated with a series of NNE-SSW trending VLF-EM conductors. This anomaly was later detailed utilizing a horizontal loop max.-min. EM system which located a low conductivity anomaly at a depth of

approximately 25 metres. Subsequent diamond drilling in 1981 indicated the cause of the anomaly to be due to 15 metres of sulphide enriched greenstone containing 1.0% - 3.0% pyrite and mixed pyrrhotite. Trace amounts of grey sulphides were thought to account for the low level Ag - Pb geochem anomalies, although no record of assay results of the diamond drill programme are available at this time to the writer.

GENERAL GEOLOGY

The general geology of the Lightning Peak area is described by Cairnes (1930) and Little (1957).

The Permian (?) Anarchist Group rocks, consists of greenstone, graywacke, tuffs, limestone and paragneiss. They form a roof pendant in the Lightning Peak area and are intruded by Cretaceous (?) Nelson and Valhalla granitic intrusives. The Anarchist Group in the vicinity of Lightning Peak area, host the silver, zinc and lead mineralization at the nearby Waterloo Mine to the west of the Geo claims. Silver, lead, copper and zinc mineralization at the Payday property to the east of the Geo III mineral claim occurs along a northwest trending contact between granodiorite and highly altered volcanic rocks of the Anarchist Group.

Intrusive rocks mapped on the property are primarily fine to coarse grained granodiorites. Some of the granodiorite is depleted in mafics whilst others grade into fine grained diorites containing inclusions of granodiorite. Metavolcanic rocks that outcrop on the property are composed primarily of andesitic lava and are generally grey green, fine grained and invariably silicious. Others are crystalline containing laths of potash feldspar.

STRUCTURAL GEOLOGY

The contacts between Nelson Intrusives and Anarchist Group rocks both north and south of Horseshoe Lake, have been interpreted using aerial photography and airborne magnetic data in conjunction with the geological mapping.

GEOCHEMISTRY

A geochemical survey was conducted over an established survey grid in an area of interest north of the Thunderhill and Killarney Crown Granted Mineral Claims. Flagged traverse lines were surveyed in between east-west cut lines every 120 metres from a north-south baseline west of Horseshoe Lake. 94 samples were taken along approximately 6 kilometres of flagged lines every 50 metres. Soil samples were taken in the 'B' horizon whenever possible. Samples were taken from a 'C' horizon if the 'B' horizon was not well developed.

The B Horizon was generally reddish to orange brown in colour and occurred at a depth of 7.5 to 20 cms and was approximately 15 cms thick. A small mattock was used to dig the hole. Coarse rock debris and organic matter was discarded. Samples were not collected in swampy areas or rock outcrops. The grid location, soil horizon type and depth, degree of oxidation, colour and exposure were noted at each soil sample site. All soil samples were air dried and boxed for shipment to Kamloops Research and Assay Laboratories Ltd. The lab preparation included drying and screening to minus 80 mesh. A measured amount of the minus 80 mesh fraction was then digested in hot aqua regia. Hot acid extraction and atomic absorption were used to determine parts per million for silver, copper, lead and zinc. Arsenic determinations were done using a combination of pyridine and colorimetric. Hot acid extraction and A.A. were used for Antimony.

The assay data has been plotted on single element maps at a scale of 1:5000 (see Drawings 2 - 8). The data treatment has included contouring and definition of subanomalous, anomalous and second order anomalous values for the six elements over the intrusive rocks and Anarchist Group metamorphic rocks. Table II illustrates the statistical data, contour intervals, and subanomalous, anomalous and second order anomalous values for each of the six elements analyzed. Generally, subanomalous values for each element are the mean plus one standard deviation, anomalous values are the mean plus two standard deviations and second order anomalous values are the mean plus three standard deviations.

TABLE I

	<u>Anarchist Group Rocks</u>						<u>Intrusive Rock (Nelson Intrusives)</u>					
	<u>Pb</u>	<u>Zn</u>	<u>(ppm)</u>		<u>As</u>	<u>Sb</u>	<u>Pb</u>	<u>Zn</u>	<u>(ppm)</u>		<u>As</u>	<u>Sb</u>
			<u>Ag</u>	<u>Cu</u>					<u>Ag</u>	<u>Cu</u>		
\bar{X}	16.13	60.6	0.95	25.94	1.25	7.87	3.06	58.06	0.88	22.06	2.38	8.50
\overline{SX}	5.68	20.2	0.34	10.74	1.52	1.51	15.78	15.95	0.18	8.49	4.19	2.01
Contour Interval	6	20	0.3	10	2	2	4	15	0.2	10	4	2
Sub Anomalous	22	80	1.3	35	3	10	20	75	1.1	30	6	11
Anomalous	28	100	1.6	45	5	12	24	90	1.3	40	10	13
2nd Order Anomalous	34	120	1.9	55	7	14	28	105	1.5	50	14	15

 \bar{X} = Mean \overline{SX} = Standard Deviation

INTERPRETATION OF GEOCHEMISTRY

The silver soil geochemistry is illustrated on drawing No. 4 anomalous values for silver are higher in the Anarchist Group rocks than the intrusives. A single value of 1.5ppm was detected on lines 0+60N and 4+50E and occurs as part of the north trending anomaly coincident with a single value of 55ppm copper to the north, and 110ppm zinc to the south. Most significant values of silver occur in the southeast portion of the survey grid area where highs of 2.7ppm were obtained on lines 6+60S and 4+50E and 2.0ppm on lines 5+40S and 3+50E.

The silver anomalies are coincident with higher northeast trending zinc values as shown on drawing no. 3 and occur at or near the contact between intrusive and volcanic rocks on lines 0+60s and 3+00S.

A high of 48ppm lead as illustrated on drawing no. 2, occurs on lines 5+40s and 4+50E and is also coincident with the higher zinc and silver values. The higher zinc values occur at or near the contact between intrusives and volcanic rocks on lines 0+60S and 3+00s.

Copper values are illustrated on drawing no. 7. A value of 79ppm copper occurs on the north-south baseline along traverse 6+60N coincident with subanomalous antimony. Most of the highest copper values occur east of Horseshoe Lake on lines 4+20N and 1+80N.

CONCLUSION AND RECOMMENDATIONS

Results of a geochemical soil sampling programme conducted over a portion of the Geo III mineral claim indicates that the highest values in silver, zinc, lead and copper occur in areas mapped as Anarchist Group Volcanics. The highest values occur in an area east of the Geo III mineral claim and may be related to an inferred northeast trending structure mineralized with silver, sphalerite and galena. A programme of prospecting, detailed mapping and trenching should be done to expose this possible northeast structure between lines 6+60s and 8+40S in vicinity of diamond drill holes collared in 1981. In addition, a closely spaced VLF-EM survey should be conducted to determine possible cross-overs related to previous silver, lead, zinc geochem anomalies.

Detailed geological mapping and prospecting should be conducted over geological contact areas coincident with higher geochem values to explore the potential for possible skarn type mineralization.

In addition, it is recommended that a programme of prospecting, geological mapping and geochemical soil sampling be conducted on the Geo I mineral claim.

AUTHORS QUALIFICATIONS

BRIAN CALLAGHAN

I graduated from Brandon University, Manitoba, in 1980 with a Bachelor of Science Degree in Geology,

The following is a synopsis of my employment experience:

- | | |
|-------------------------|---|
| June - October 1980 | Esso Minerals, Canada
Geological Assistant - exploration in Northern Manitoba, Northern Saskatchewan, MacKenzie, B.C. and various properties in the Stewart area of B.C., including the Grande Duc Mine. |
| February 1981 - Present | Mohawk Oil Co. Ltd.
Exploration Geologist - responsible for geological exploration, report preparation, supervision of geological, geochemical and geophysical surveys. |

April 10, 1983



Brian Callaghan

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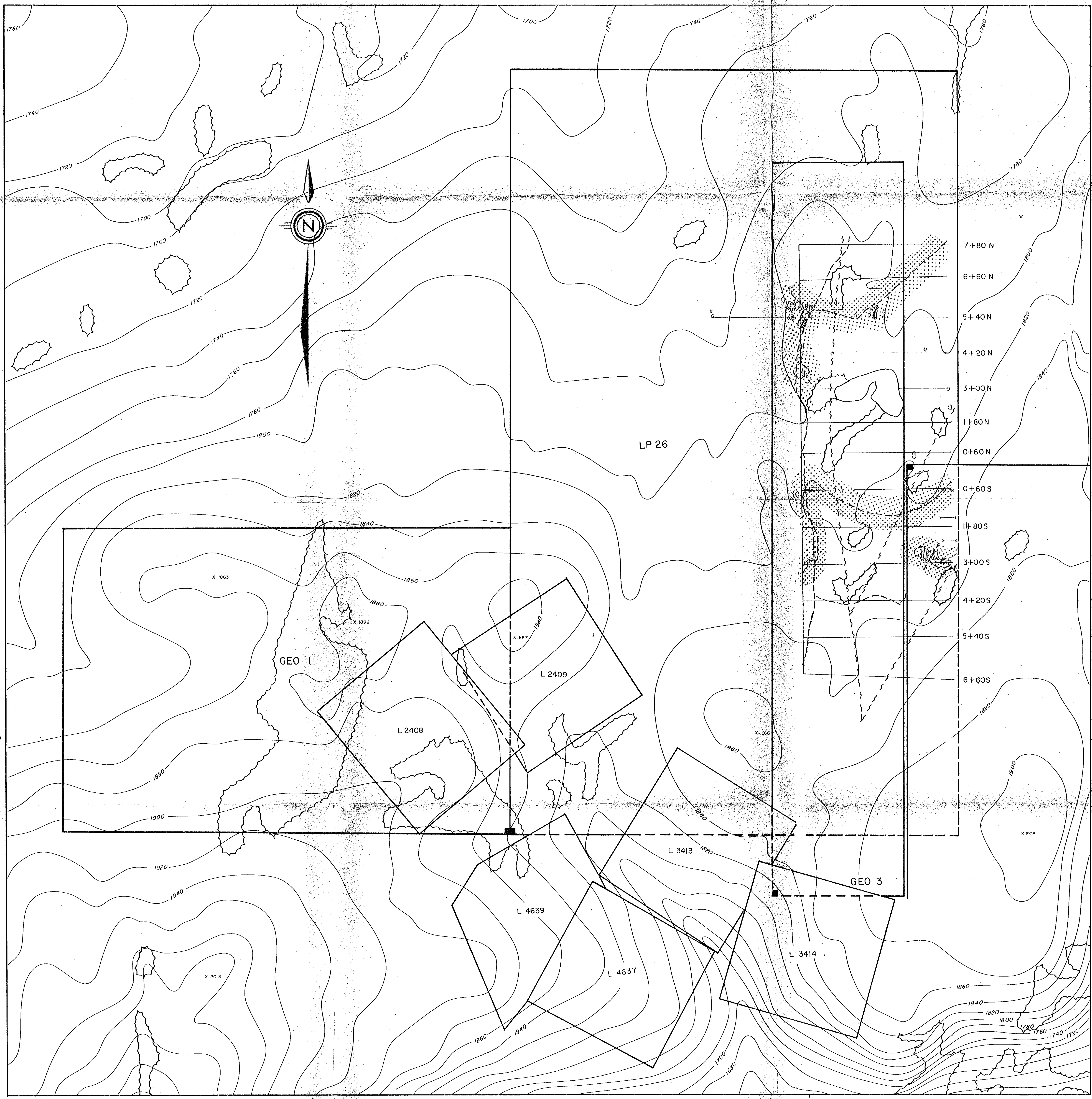
APPENDIX I

ITEMIZED COST STATEMENT

APPENDIX I

ITEMIZED COST STATEMENT

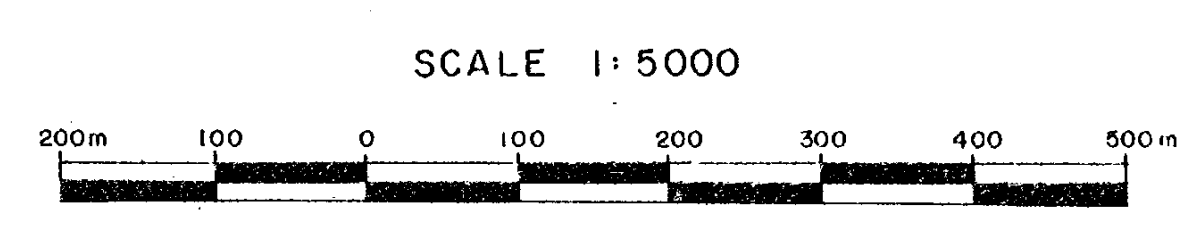
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Project Geologist	(B. Çallaghan - 1 day @ \$110/day)	110.00
Geological Mapping	Field Geologist - \$95/day	95.00
	Intermediate Geologist - \$85/day	85.00
Geochemical Sampling	three Assistants - \$80/day	240.00
Geochemical samples Soils	94 determinations for Ag, Pb, Zn, Cu, As, Sb @ \$12 - 30/samples	1,156.00
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Transportation	4 X 4 Crew Cabs - @ \$46/day	92.00
Freight Charges		50.00
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Surveying	Chain Compass @ \$85/day	170.00
One Pick-up	@ \$43/day - two days	86.00
Radios	@ \$15/day - 4 radios for two days	120.00
Map Preparation Interpretation report preparation		1,325.00
Typing, Copying		450.00
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	Grand Total	<u><u>\$5,192.00</u></u>



GEOLOGICAL BRANCH
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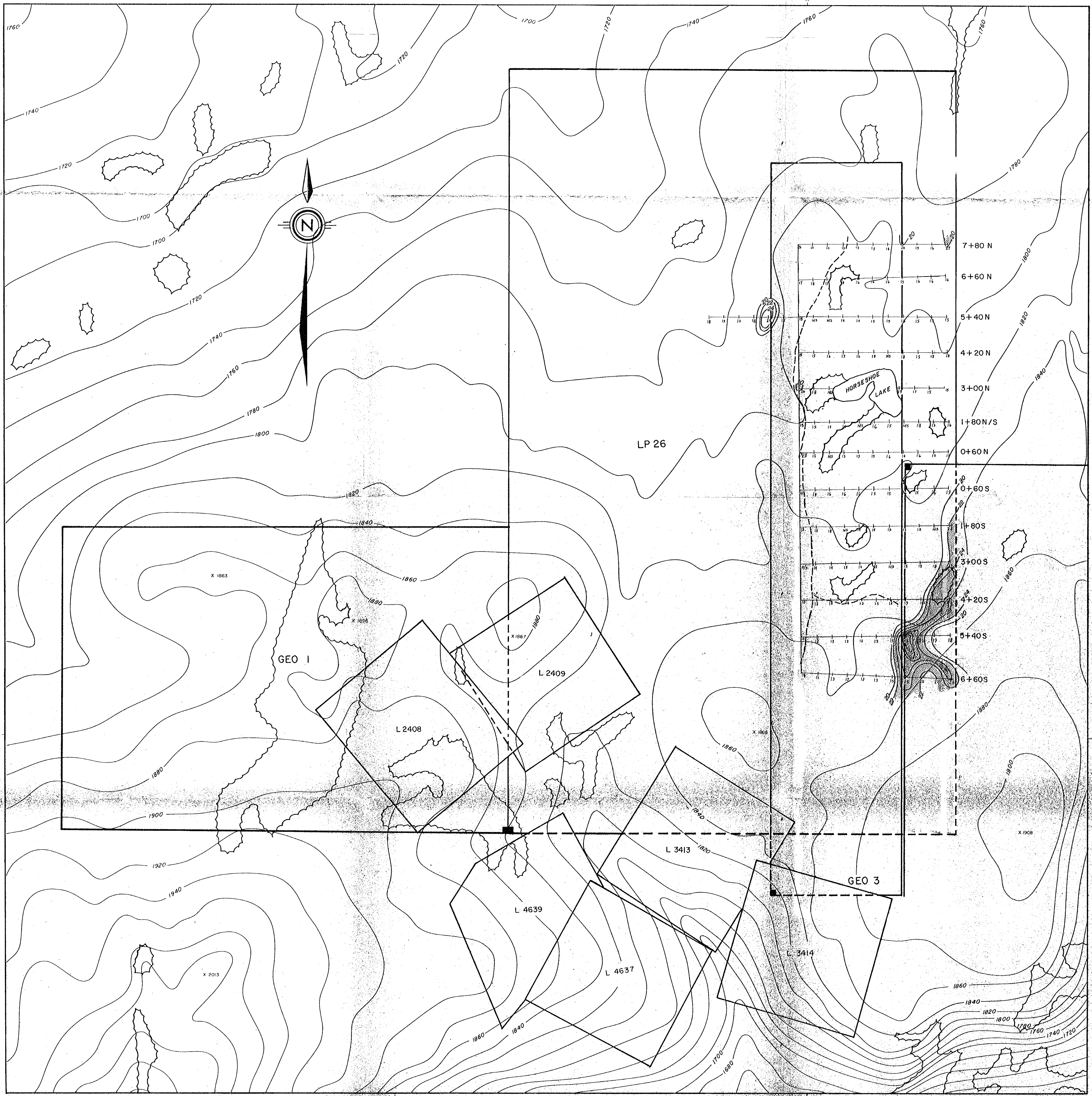
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PART 3 OF 5

LEGEND



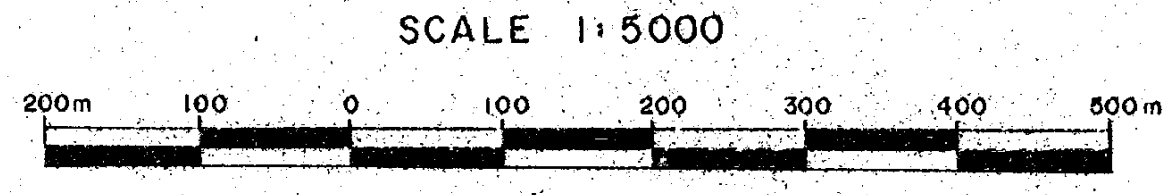
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LIGHTNING PEAK AREA			
GEO 1 & 3			
GEOLOGY			
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M. LETILLY	1:5000	APRIL, 1984	NO. 1



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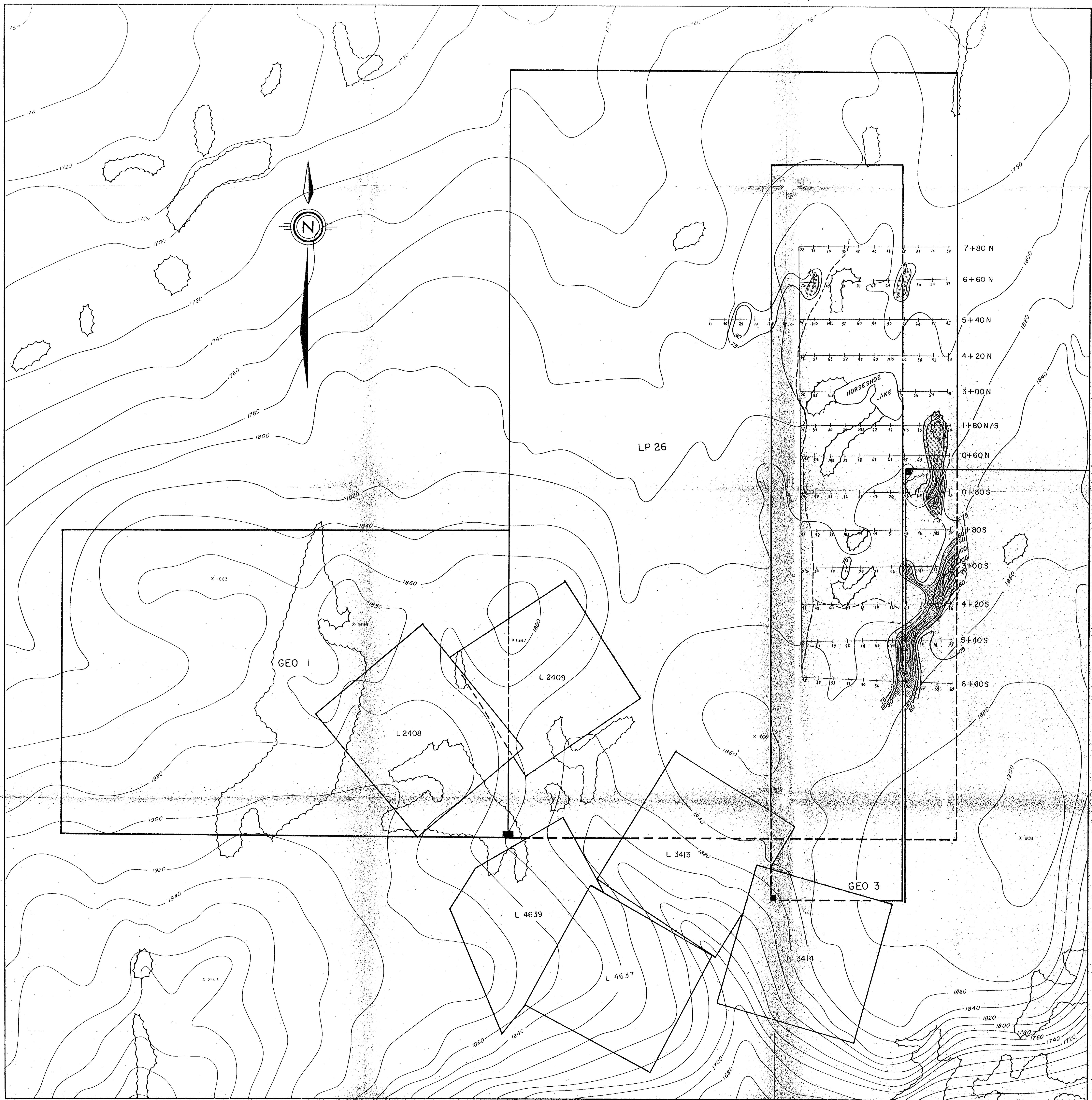
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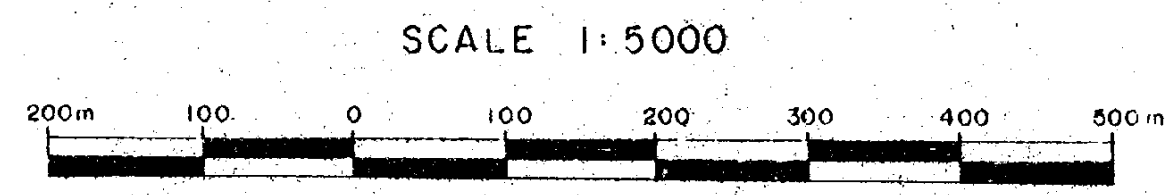
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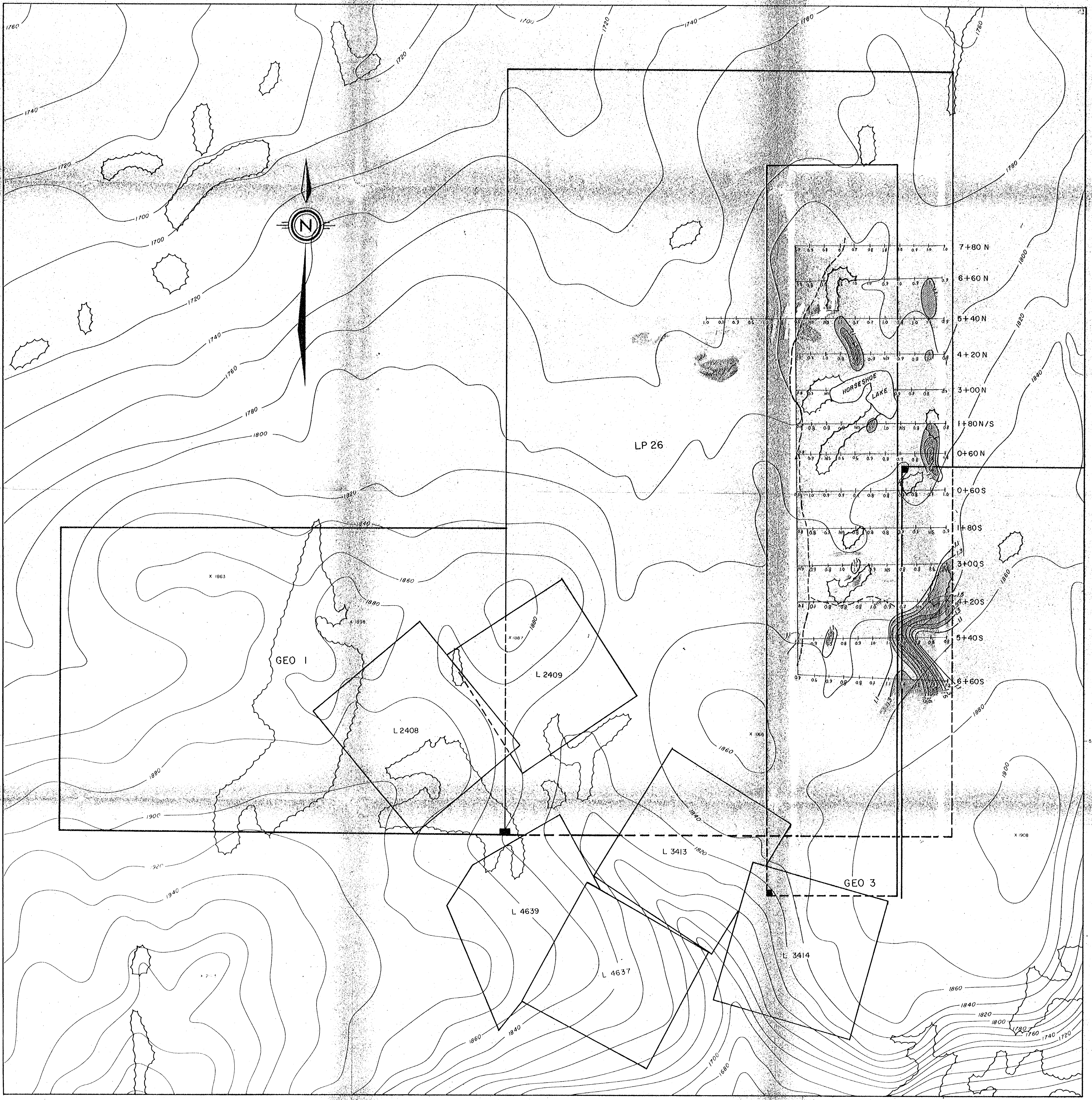
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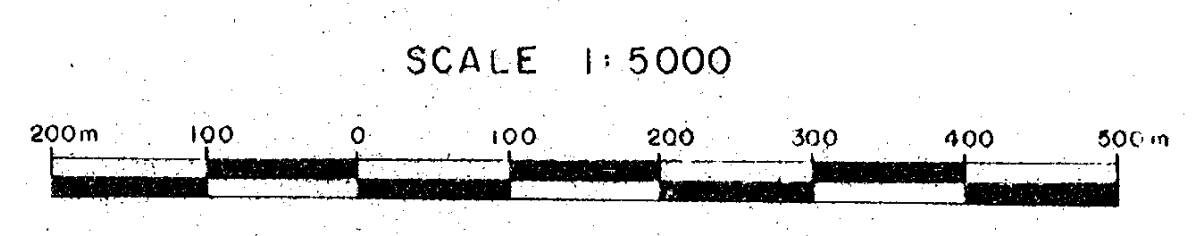
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LIGHTNING PEAK AREA			
GEO 1 & 3			
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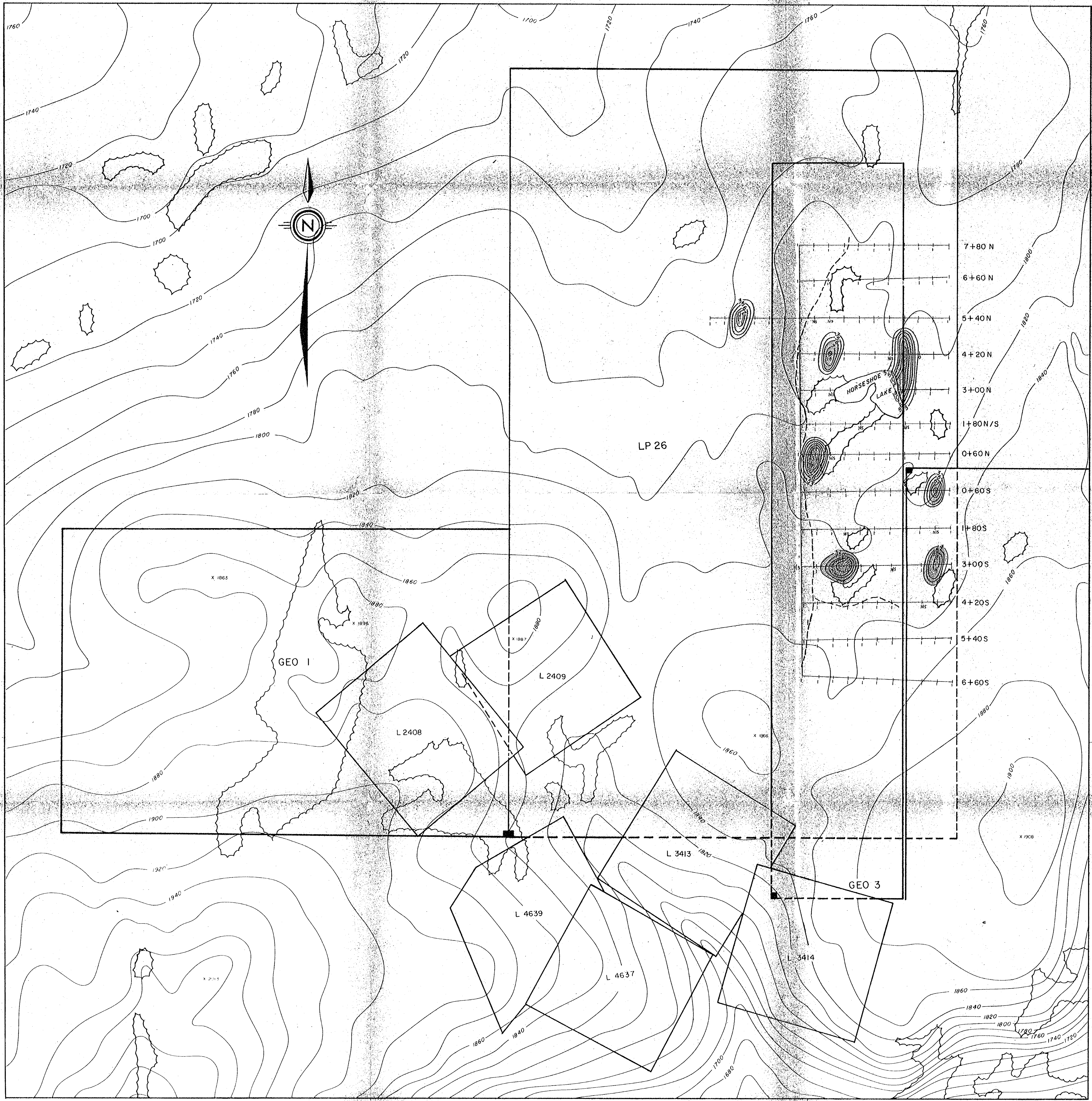
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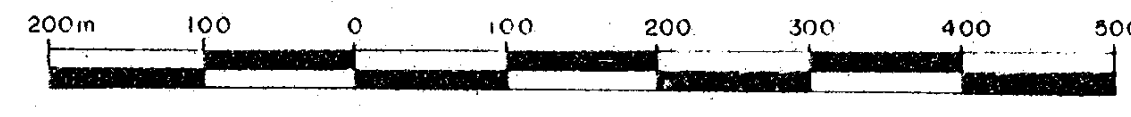
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ASSESSMENT REPORT

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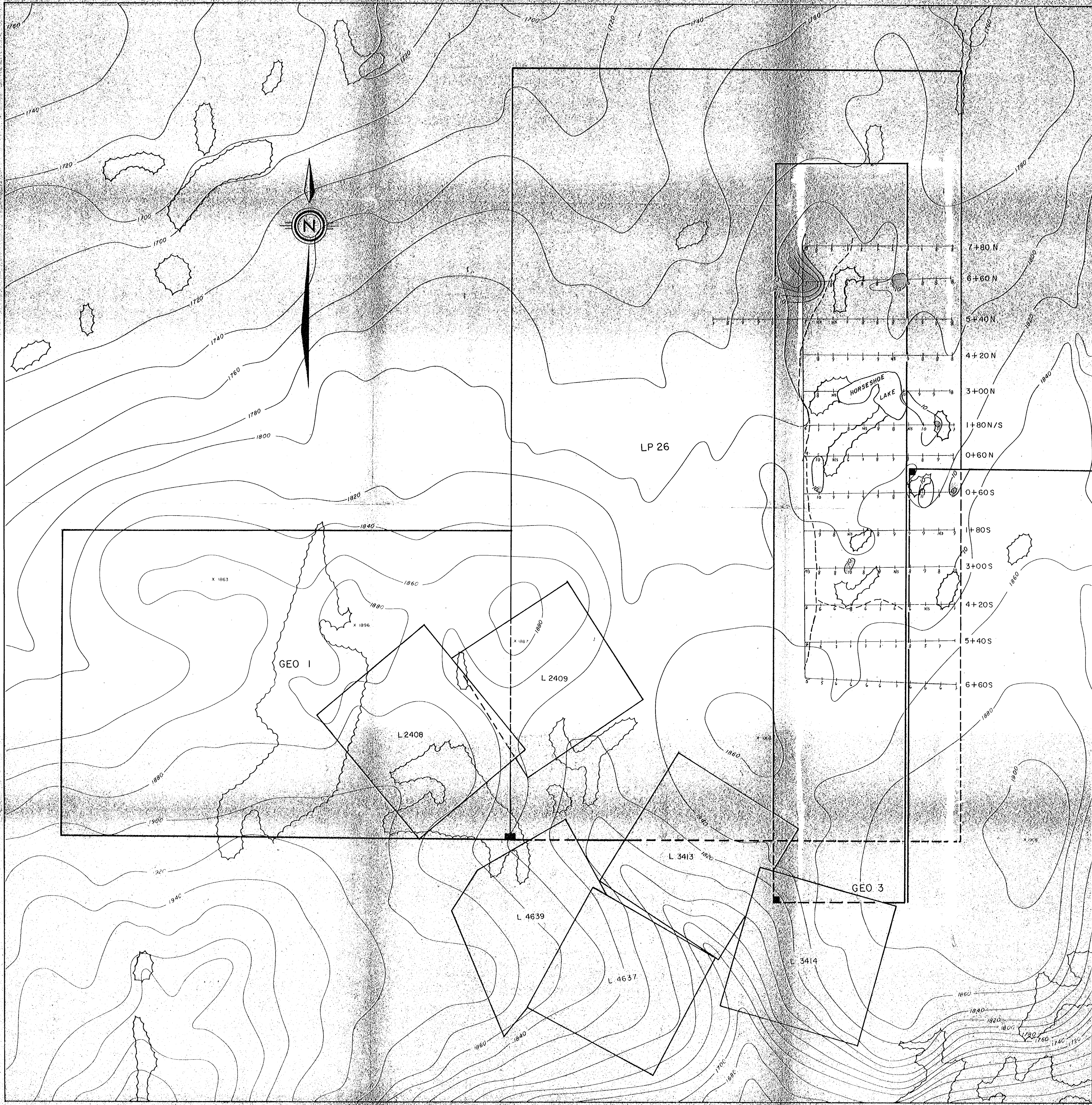
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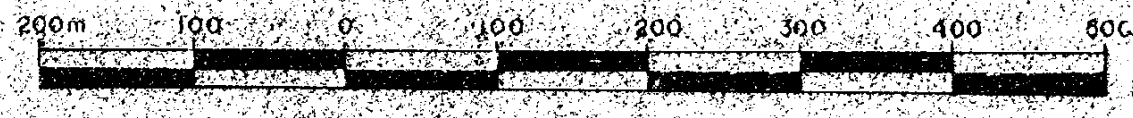
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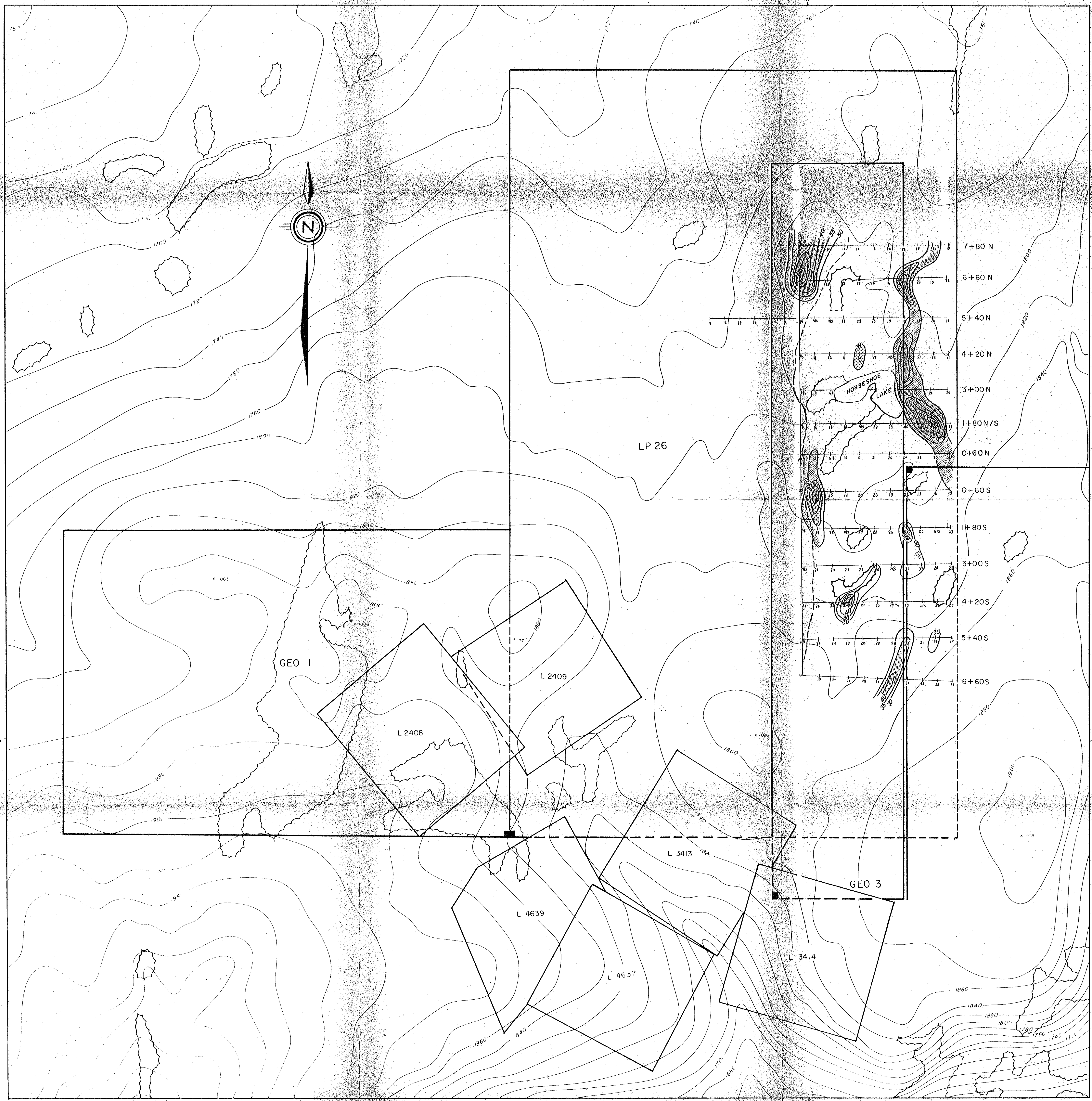
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2ND ORDER ANOMALY		ANARCHIST GROUP INTRUSIVES	TOPOGRAPHIC CONTOUR	
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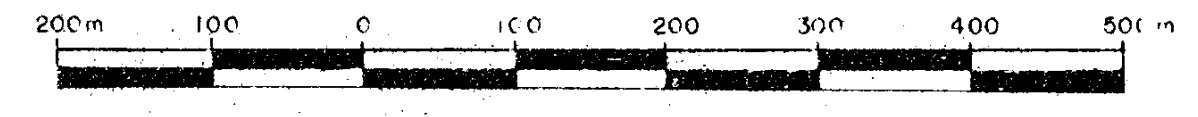
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GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,356
PART 3 OF 5

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| ANOMALOUS | | ANARCHIST GROUP INTRUSIVES | | CONTOUR LINE (ppm) | |
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| | | | | ROAD | |

MOHAWK OIL COMPANY LTD.			
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GEO 1 & 3			
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