REPORT ON AIRBORNE GEOPHYSICAL SURVEYS SMITHERS AREA, BRITISH COLUMBIA ON BEHALF OF TEXAS GULF SULPHUR COMPANY INC.

by

Richard O. Crosby, B.Sc., P.Eng.
and
Russell A. Hillman, B.Sc.

August 25, 1969

CLAIMS:

Name	Record Number
ASCOT 15 to 24 incl.	53528 to 53537
ASCOT 30, 32, 34, 36	53543, 45, 47, 49
ASCOT 39 to 48 incl.	53551 to 53561
ASCOT 53 to 90 incl.	53566 to 53603
ASCOT 91 to 109 incl.	53604 to 53622
ASCOT 111 to 128 incl.	53624 to 53641

LOCATION:

About 18 miles east of Smithers and 24 miles west of Babine Lake, B. C.
126° 54° ~~N.E.~~ NW
Omineca Mining Division

DATE:

June 12, 1969

2139

2139

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP

TABLE OF CONTENTS

REPORT ON AIRBORNE GEOPHYSICAL SURVEYS SMITHERS AREA, BRITISH COLUMBIA ON BEHALF OF TEXAS GULF SULPHUR COMPANY INC.

INTRODUCTION

On June 12, 1969 airborne geophysical surveys were executed on behalf of Texas Gulf Sulphur Company Inc. in the Smithers area, British Columbia, covering approximately 15 square miles (see Plate 1).

The airborne survey included electromagnetic and magnetometer measurements. The former employed a Scintrex HEM-701 electromagnetic unit and the latter a Scintrex NPM-1 nuclear resonance, total intensity magnetometer.

Appendix A, attached, gives full details of the airborne geophysical equipment and the ancillary equipment employed, as well as the treatment of data resulting from these surveys. In the case of the present surveys a Hiller SL-4 helicopter, on charter from Haida Helicopters, was employed as the basic transport vehicle.

The electromagnetic survey lines were flown at a nominal 1/8 mile line interval. Flight navigation and flight path recovery have been based upon photomosaics on the scale of approximately 1" = 1000 ft.

The magnetometer sensor and the EM"bird" were flown separately behind the helicopter.

The purpose of the present program was to map the distribution of the subsurface conductors in the area covered. In the survey area the targets of economic interest are metallic sulphide bodies. The electromagnetic data provide the basic information relating to the possible presence of such bodies. The purpose of the magnetometer survey results is primarily one of correlation with the conductors.

PRESENTATION OF DATA

The results of the geophysical surveys are presented on Plates 1,2 and 3, on the scale of 1"=1000 ft. Some topographic features and flight lines are shown on the plates. Plates 1 and 2 show the magnetic contours. The contours are at an interval of 100 gammas or less, according to magnetic relief. Plate 3 shows the elctromagnetic results. Conductor half-widths and peak locations are shown, coded as described in Appendix A. The in-phase amplitude, in-phase/out-of-phase ratio and magnetic correlation (if any) are indicated for each conductor intersection.

The EM and magnetometer data are presented together with altimeter and fiducial recording on a dual trace Moseley recorder.

The original geophysical traces are on the following scales:

EM	1" =	100 parts per million
Magnetometer	1" =	100 gammas, with automatic steps of 500 gammas. The magnetic base level is 58,000 gammas.

DISCUSSION OF RESULTS

The electromagnetic responses of interest obtained during the current survey are listed in Table 1. They fall generally in the first category and show poor to good conductivity.

Conductors have been connected between flight lines where this appeared logical. Some conductors display a corresponding magnetic response, which may be due either to a higher magnetite or pyrrhotite mineralization, both known to be present in this part of British Columbia. The higher magnetic intensities are likely due to magnetite.

revised A. J. Schmidt
Dec. 19/69

Electromagnetic disturbances due to sudden altitude differences of the system, resulting in changes in coil configuration in respect to the target area, are also present.

Except for the conductors located in the northwest portion of the survey area, all are related to rocks and/or structure having magnetic expression. The most important of these are those in the northeastern quarter of the survey area, coincident with a strong, generally northwest-southeast trending magnetic gradient and flanking a circular magnetic depression, which is interpreted as arising from an acidic intrusive.

The magnetic positive anomaly trending northwest-southeast in the southern part of the survey area is coincident with a series of extensive negative electromagnetic anomalies suggesting that the reversed responses may in part be caused by the magnetic permeability of the underlying rocks.

Plate 2 shows two zones which were flown perpendicular to main flight direction. These zones revealed additional reversed responses suggesting that the orientation of the conductors are in part also responsible for the reversals.

As a first approximation the selection of targets for ground follow-up could be based upon conductivity, category, magnetic correlation, etc. and weighted by all geological information directly available to Texas Gulf Sulphur Company Inc.

To examine selected targets on the ground and to determine their precise location, a combination of surveys on small grids possibly comprising geological, geochemical, Turam electromagnetic and magnetometer investigations is recommended.

Respectfully submitted,
SEIGEL ASSOCIATES LIMITED

Richard O. Crosby, P.Eng.
Geophysicist

August 25, 1969
Vancouver, B.C.

SUMMARY

Helicopter-borne electromagnetic and magnetometer surveys were executed over approximately 15 square miles in the Smithers area, British Columbia. Fifty-three conductors with favourable electrical characteristics have been revealed. In several cases a corresponding magnetic response is evident.

Lacking geological information, only general recommendations for ground follow-up have been made.

TABLE ONE

Line	Anomaly	Peak Fiducial	Electrical Character	Magnetic Character
0	A	0097	Category 1, Medium Conductor	No
00	A	0280	" 1, Good Conductor	No
	B	0061	" 1, Poor Conductor	Yes
1	A	0095	" 1, Poor Conductor	No
	B	0022	" 1, Med/Poor Conductor	No
2	A	0310	" 1, Medium Conductor	No
	B	0360	" 1, Med/Poor Conductor	No
	C	0110	" 1, Good Conductor	No
	D	0090	" 1, Med./Poor Conductor	No
	E	0040	" 1, Poor Conductor	Yes
	F	0039	" 1, Good Conductor	No
	G	0027	" 1, Med/Poor Conductor	No
3	A	0056	" 1, Medium Conductor	No
	B	0105	" 1, Med/Poor Conductor	No
	C	0053	" 1, Poor Conductor	No
4	A	0058	" 1, Med/Poor Conductor	No
	B	0050	" 1, Poor Conductor	Yes
	C	0018	" 2, Good Conductor	No
	D	0067	" 1, Poor Conductor	No
5	A	0076	" 1, Med/Poor Conductor	No
	B	0024	" 1, Poor Conductor	No
	C	0038	" 1, Poor Conductor	No
6	A	0070	" 1, Poor Conductor	No
	B	0048	" 2, Poor Conductor	No
	C	0075	" 1, Poor Conductor	No
7	A	0030	" 2, Poor Conductor	No
	B	0070	" 1, Poor Conductor	No
8	A	0087	" 1, Good Conductor	No
	B	0098	" 1, Good Conductor	No
	C	0081	" 1, Medium Conductor	No
9	A	0027	" 1, Poor Conductor	Yes
	B	0070	" 1, Poor Conductor	No

Line	Anomaly	Peak Fiducial	Electrical Character	Magnetic Character
10	A	0044	Category 1, Poor Conductor	Yes
11	A	0031	" 1, Poor Conductor	Yes
12	A	0032	" 1, Poor Conductor	Yes
13	A	0049	" 1, Poor Conductor	Yes
14	A	0020	" 2, Poor Conductor	Yes
	B	0018	" 1, Med/Poor Conductor	Yes
15	A	0013	" 2, Poor Conductor	No
	B	0030	" 1, Poor Conductor	Yes
17	A	0030	" 2, Poor Conductor	Yes
	B	0019	" 1, Poor Conductor	Yes
18	A	0030	" 1, Medium Conductor	Yes
19	A	0014	" 2, Med/Poor Conductor	Yes
	B	0016	" 1, Med/Poor Conductor	No
20	A	0019	" 3, Med/Poor Conductor	Yes
21	A	0167	" 3, Good Conductor	Yes
	B	0011	" 2, Poor Conductor	No
22	A	0160	" 3, Good Conductor	No
	B	0013	" 2, Poor Conductor	Yes
23	A	0134	" 1, Good Conductor	Yes
	B	0180	" 1, Good Conductor	No
	C	0010	" 3, Poor Conductor	Yes

Westerly Zone

R	A	0170	Category 1, Good Conductor	No
	B	0100	" 1, Good Conductor	No
S	A	0052	" 1, Poor Conductor	No
	B	0137	" 1, Good Conductor	Yes
	C	0143	" 1, Good Conductor	Yes

Line	Anomaly	Peak Fiducial	Electrical Character	Magnetic Character
T	A	0059	Category 1, Good Conductor	No
U	A	0020	" 1, Poor Conductor	No
	B	0134	" 1, Good Conductor	No
	C	0204	" 1, Good Conductor	No
V	A	0041	" 1, Poor Conductor	No
W	A	0179	" 1, Good Conductor	No
	B	0205	" 1, Good Conductor	No
X	A	0065	" 1, Good Conductor	No
	B	0221	" 1, Good Conductor	No
Y	A	0165	" 1, Good Conductor	No
	B	0140	" 1, Good Conductor	No
Z	A	0072	" 1, Good Conductor	No
	B	0112	" 1, Good Conductor	No
	C	0018	" 2, Poor Conductor	No
Z_1	A	0017	" 1, Med/Poor Conductor	No
	B	0196	" 1, Good Conductor	No
	C	0293	" 1, Good Conductor	No
Z_2	A	0109	" 1, Good Conductor	No
Easterly Zone				
A	A	0096	Category 1, Poor Conductor	No
B	A	0076	" 1, Poor Conductor	No
D	A	0183	" 1, Good Conductor	No
E	A	0135	" 1, Good Conductor	No
	B	0120	" 1, Medium Conductor	No
F	A	0184	" 1, Good Conductor	No

APPENDIX 'A'

DESCRIPTION OF AIRBORNE SYSTEMS

ELECTROMAGNETIC SYSTEM - SCINTREX HEM-701

Equipment

The Scintrex HEM-701 is a solid state, fixed-configuration, electromagnetic system especially designed for helicopter transport. It consists of two coaxial coils, one serving as transmitter and the other as receiver, which are mounted, 30 ft. apart, in a rigid "bird" with their axes horizontal and in the direction of flight. The bird is towed approximately 100 ft. below the helicopter, by means of a suitable cable which also carried electrical signals and power to and from the bird.

The system operates at 1600 Hertz. Changes in the alternating magnetic field at the receiver coil are observed and these changes are converted into two components, one whose phase is the same as that of the transmitted signal (the "In-Phase" component), and the other whose phase is 90° apart (the "Out-of-Phase" component). These changes are expressed in terms of the normal undistorted primary field. They are so small as to be expressed usually in parts-per-million or p. p. m.

The In-Phase and Out-of-Phase variations are presented in graphic time-shared form on a single channel of a graphic recorder. The full scale chart width employed is commonly 1000 p. p. m., although in areas of low geologic noise levels 500 p. p. m. may be employed. At one or more points during each flight the scale sensitivity is checked by means of calibration signals, usually 100 p. p. m. on each trace.

The reference or "zero" level for each EM trace is an arbitrary one and is obtained empirically from the regional level of each trace. These levels may drift slowly during a flight because of temperature changes affecting the bird dimensions. These drifts are very gradual and are readily distinguishable from much quicker, local changes due to conductors of a geologic origin. Similarly, severe turbulence effects sometimes introduce low-order, primarily in-phase disturbances which are of such short period that they may also readily be distinguished from the effects of geologic conductors.

Man-made disturbances are often to be seen, including power lines, pipe lines, metal fences, railways, etc. The former are generally recognizable as such because they usually show through as cyclic noise of irregular shape and phase relationship. Non-energized, grounded power lines (e.g. 3 phase systems) may also give rise to proper conductor indications, however. Such indications, as well as those from pipe lines and metal fences, etc. are usually of short duration and can be distinguished from proper geologic sources except for very narrow, near-surface lenses. In some instances ground investigation may be necessary in order to resolve the ambiguity of possible source. Whereas the airborne geophysical crew attempts to note visible man-made conductors of the above types, the ground moves by so rapidly at the low flight elevation employed that 100% recognition of such sources cannot be expected from the air.

The normal terrain clearance of the bird is 100 ft. - 200 ft. depending on the surface topography and tree cover, etc., with the helicopter 100 ft. above. The established useful depth of detection of the system for moderate-to-large conducting bodies is about 350 ft. sub-bird under conditions of low extraneous geologic noise, i.e. where the general level of conductivity of the overburden and rock types of the area is low. The useful depth of detection of the system is therefore between 150 ft. and 250 ft. beneath the ground surface under these conditions.

Interpretation of Results

The EM records are interpreted to determine the presence of conducting bodies and to obtain some information relating to their character. The intervalometer time marks (see below) are synchronized with the positioning camera film strip (also see below) and thereby permit the relating of the conductors with appropriate ground locations. The altimeter data (see below) indicate, for each conductor, what the terrain clearance was at the time of detection.

A plan is prepared, either using a subdued photo-mosaic ("grayflex") or an overlay from a mosaic or topographic plan as base. The flight path of each survey line is obtained by means of "tie points", which are features on the mosaic or topographic plan which are also recognizable on the positioning camera film. The flight path is interpolated between these tie points.

For each conductor the following quantities are measured and recorded.

a) Half width. This is the distance between the points of half the maximum conductor disturbance. For a very thin, steeply dipping body or pipe line, etc., the half width will be about 1.6 times its depth below the bird. If the bird is at a mean conductor clearance of 150 ft. the half width would be about 250 ft. Larger half widths reflect either more deeply buried or, more likely, thicker conductors.

Flat-lying conductors (e.g. overburden) characteristically give large half widths.

The conductor half width is indicated on the plan by an open bar symbol along the flight line. In the event of very narrow conductors only the peak location may be shown (see below).

b) Peak Location. The in-phase conductor peak location is shown on the plan by a circle in the appropriate location. In the case of broad conductors or closely spaced multiple conductor zones there may be more than one peak, in which event all major peaks are shown. If a conductor is of short half width there may be no room for a half width bar and only the peak circle will be shown. A conductor which is likely man-made will be indicated by an X rather than by a circle.

c) In-Phase and Out-of-Phase Amplitudes. These amplitudes are scaled from the EM traces and noted in parts per million. On the flight plan, opposite each peak location (circle) will be given the peak in-phase amplitude and the ratio of peak in-phase to peak out-of-phase response (see below).

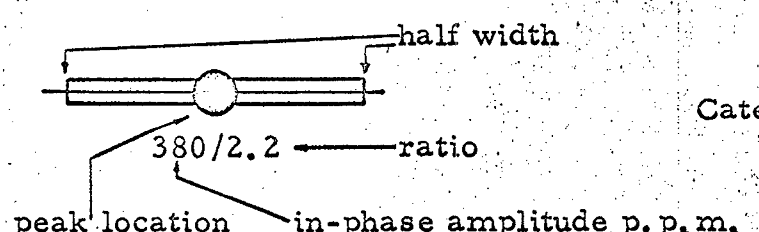
d) Conductor Coding. Conductor intersections are graded in electrical categories 1, 2 and 3, based on the in-phase amplitude but taking into account the terrain clearance. For tabular bodies such as sheet-like ore deposits, strata bound conductors and overburden, their response drops off almost in accordance with the inverse cube power of the elevation. Assuming an average 50 ft. of overburden, a category 1 conductor has a peak in-phase response equivalent to 350 p.p.m. or over at 100 ft. bird terrain clearance. A category 2 conductor has a peak in-phase response under similar conditions of between 100 p.p.m. and 350 p.p.m. A category 3 conductor has an equivalent peak in-phase response of less than 100 p.p.m.

The respective peak circles are shaded to reflect their electrical category, with category 1 fully shaded, category 2 half shaded and category 3 unshaded.

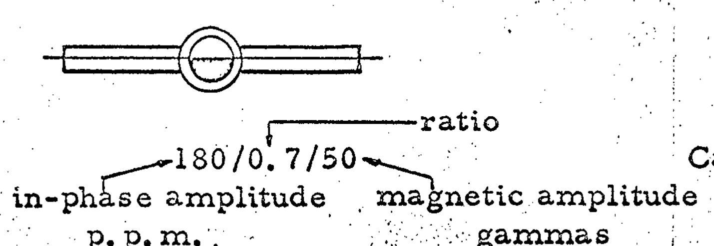
For each conductor peak the ratio of peak in-phase to peak out-of-phase amplitude is calculated and plotted on the plan. This ratio is indicative of a conductivity-size factor for the conductor. Large, high conducting bodies such as massive sulphides or graphite and sea-water, etc., generally have ratios of 3 or over. Moderate conductivity-size bodies will have ratios between 1 and 3. Poor conductivity bodies (e.g. most overburden and some sulphide and graphitic zones) will have ratios of less than 1. In areas where there is a clear differentiation in conductivity between the targets of potential economic interest and other possible conductors, the ratio is a diagnostic feature. In some areas, however, there is an overlap of conductivity ranges and then the ratio cannot be too rigidly relied upon.

Where magnetic data is available, preferably from a coincident recording magnetometer, any correlating magnetic activity will be noted for the pertinent conductor peak. A conductor peak with apparently direct magnetic correlation will be indicated by a double concentric circle. Although a conducting body which is appreciably magnetic is more likely to be a sulphide body than one which is non-magnetic, there are many very important base metal ore bodies which are quite non-magnetic.

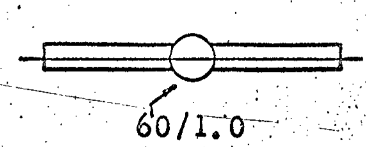
Examples of conductor coding are given below.



Category one, no magnetic correlation.



Category two, magnetic correlation.



Category three, no magnetic correlation.

X Probably man-made conductor.

SEIGEL ASSOCIATES LIMITED

DAILY FLIGHT REPORT

JOB: Texas Gulf Sulphur Company Inc.   DATE: June 12, 1969

AREA: Smithers, B.C.   OPERATOR: Tony Szanto

SURVEY TYPE: E.M. & Magnetometer   PILOT: Tom Scheer

SENSITIVITY: 1000 gammas   NAVIGATOR

f. ______ T.O. 5:30 T.D. 6:32   FLIGHT NO.

LINE NO.	FIDUCIALS		TIME		LINE LENGTH	REMARKS
	START	END	START	END		
L 1 W	1	84				Light ing bad going East, will
L 1 W	117	206				continue

SEIGEL ASSOCIATES LIMITED

DAILY FLIGHT REPORT

JOB: Texas Gulf Sulphur Company

DATE: June 12, 1969

AREA: Smithers, B.C.

OPERATOR: Tony Szanto

SURVEY TYPE: E. M. & Magnetometer

PILOT: Tom Scheer

SENSITIVITY: 1000 gammas

NAVIGATOR

f. ______ T.O. 8:45 T.D. 9:48

FLIGHT NO. 2

LINE NO.	FIDUCIALS START	FIDUCIALS END	TIME START	TIME END	LINE LENGTH	REMARKS
L 2 E	211	410				
L 3 W	419	534				
L 4 E	538	711				
L 5 W	715	820				
L 6 E	824	967				
L 7 W	971	1077				

SEIGEL ASSOCIATES LIMITED

DAILY FLIGHT REPORT

JOB: Texas Gulf Sulphur Company DATE: June 12, 1969

AREA: Smithers, B.C. OPERATOR: Tony Szanto

SURVEY TYPE: E.M. & Magnetometer PILOT: Tom Scheer

SENSITIVITY: 1000 gammas NAVIGATOR

f. T.O. 10:00 T.D. 12:00 FLIGHT NO. 3

LINE NO.	FIDUCIALS START	FIDUCIALS END	TIME START	TIME END	LINE LENGTH	REMARKS
L 8 E						
L 9 W	83	204				
L 10 E	208	351				
L 11 W	355	472				
L 12 E	476	628				
L 13 W	632	760				
L 14 E	764	915				
L 15 W	919	1047				
L 16 E	1051	1104				
L 16 E	1108	1257				
L 17 W	1261	1390				
L 19 W	1394	1500				
L 20 E	1504	1635				
L 21 W	1639	1757				
L 22 E	1761	1909				
L 23 W	1913	2035				

SEIGEL ASSOCIATES LIMITED

DAILY FLIGHT REPORT

JOB: Texas Gulf Sulphur Company

DATE: June 12, 1969

AREA: Smithers, B.C.

OPERATOR: Tony Szanto

SURVEY TYPE: E.M. & Magnetometer

PILOT: Tom Scheer

SENSITIVITY: 1000 gammas

NAVIGATOR

f. ______ T.O. 15:00 T.D. 16:35

FLIGHT NO. 4

LINE NO.	FIDUCIALS START	FIDUCIALS END	TIME START	TIME END	LINE LENGTH	REMARKS
18 E	2031	2162				
AS	2166	2201				
BN	2205	2249				
CS	2253	2292				
DN	2296	2346				
ES	2350	2390				
FN	2401	2437				
GS	2442	2480				
RS	2484	2549				
SN	2553	2613				
TS	2617	2663				
UN	2667	2717				
VS	2721	2781				
WN	2785	2839				
XS	2843	2911				
YN	2914	2979				
Z	3000	3078				
Z1	3082	3144				
Z2	2148	3221				
OE	3225	3278				
TL1	3282	3371				
TL3	3469	3501				

SEIGEL ASSOCIATES LIMITED

DAILY FLIGHT REPORT

JOB: Texas Gulf Sulphur Company

DATE: June 12, 1969

AREA: Smithers, B.C.

OPERATOR: Tony Szanto

SURVEY TYPE: E.M. & Magnetometer

PILOT: Tom Scheer

SENSITIVITY: 1000 gammas

NAVIGATOR

f. ____ T.O. 19:50 T.D. 21:50

FLIGHT NO. 5

LINE NO.	FIDUCIALS START	FIDUCIALS END	TIME START	TIME END	LINE LENGTH	REMARKS
Z2S	1	60				
Z1N	64	118				
ZS	122	193				
YN	197	245				
XS	249	312				
WN	316	368				
VS	372	438				
UN	442	488				
TS	492	547				
SN	551	603				
RS	607	672				
GN	676	721				
FS	725	758				
DN	762	799				
ES	803	843				
CN	847	872				
BS	876	909				
AN	913	947				
TL1	951	1032				
L 18 W	1036	1147				
TL2	1151	1221				
LOW	1225	1282				
LOOE	1283	1341				

APPENDIX "B"

PERSONNEL AND QUALIFICATIONS:

I, Richard O. Crosby, of the City of Vancouver, Province of British Columbia, hereby certify that:

1. I am a geologist-geophysicist with offices at Seigel Associates Limited, 750 - 890 W. Pender Street, Vancouver, British Columbia.

2. I am a graduate of Washington State University, B.Sc. (Geology) 1951.

3. I have been actively and continuously engaged in mineral and petroleum exploration for 18 years.

4. I am a member of the Association of Professional Engineers of British Columbia and the Yukon Territory.

5. I have no interest, directly or indirectly, nor in the securities of, nor do I expect to receive any such interest in Texas Gulf Sulphur Company.

Dated this 27th day of October, 1969, in the City of Vancouver, Province of British Columbia.

Richard O. Crosby

Richard O. Crosby, B.Sc., P.Eng.

QUALIFICATIONS

John P. Steele, Project Geophysicist

1. Graduate of the University of Toronto, B.Sc. (Mathematics and Physics) 1967.

2. Presently a geophysicist with Seigel Associates Limited, 750 - 890 W. Pender Street, Vancouver, British Columbia and attending graduate school University of British Columbia.

3. Two years' experience directing and performing geophysical surveys in Canada and the United States for Geoterrex Ltd. and Seigel Associates Ltd.

Russell A. Hillman, Geophysicist

1. Graduate of the University of British Columbia, B.Sc. (Geophysics) 1967.

2. Presently a geophysicist with Seigel Associates Limited, 750 - 890 W. Pender Street, Vancouver, British Columbia.

James Mabley, Electronic Technician

1. Senior Electronic Technician. Seigel Associates Limited, 79 Martin Ross Ave., Downsview, Ontario.

2. Fifteen years' experience in airborne geophysical systems for Aero Service Corporation, Barringer Research Limited and Seigel Associates Limited.

A. Szanto, Electronic Operator and Technician

1. Graduate Ryerson Polytechnical Institute (Electronics) 1968.

2. Electronic operator and technician, airborne geophysical systems. Seigel Associates Limited, 79 Martin Ross Ave., Downsview, Ontario.

Michael Dyment, Survey Assistant

1. Graduate Halibury School of Mines, 1965.

2. Two years' experience in underground mining operations and six months shift foreman.

3. Two years geophysical operator and technician. Seigel Associates Limited, 750 - 890 W. Pender Street, Vancouver, B.C.

Ronald Gibbons, Survey Assistant

1. Student-University of British Columbia, majoring in engineering.

2. Two summers' experience as geophysical field assistant for Seigel Associates Limited, 750 - 890 W. Pender Street, Vancouver, British Columbia.

REPORT ON AIRBORNE GEOPHYSICAL SURVEYS SMITHERS AREA, BRITISH COLUMBIA ON BEHALF OF TEXAS GULF SULPHUR COMPANY INC.

by

Richard O. Crosby, B.Sc., P.Eng.

and

Russell A. Hillman, B.Sc.

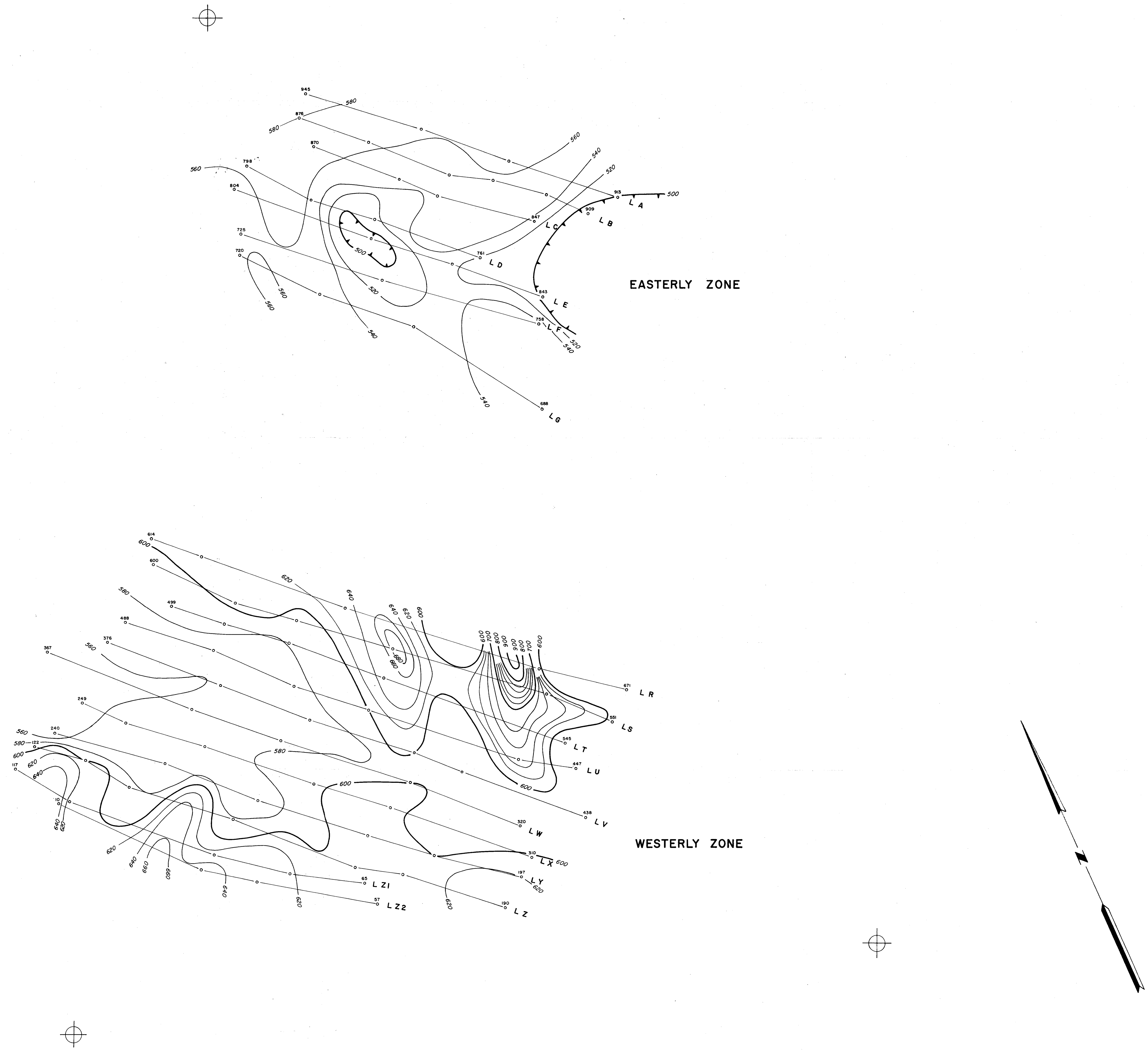
August 25, 1969

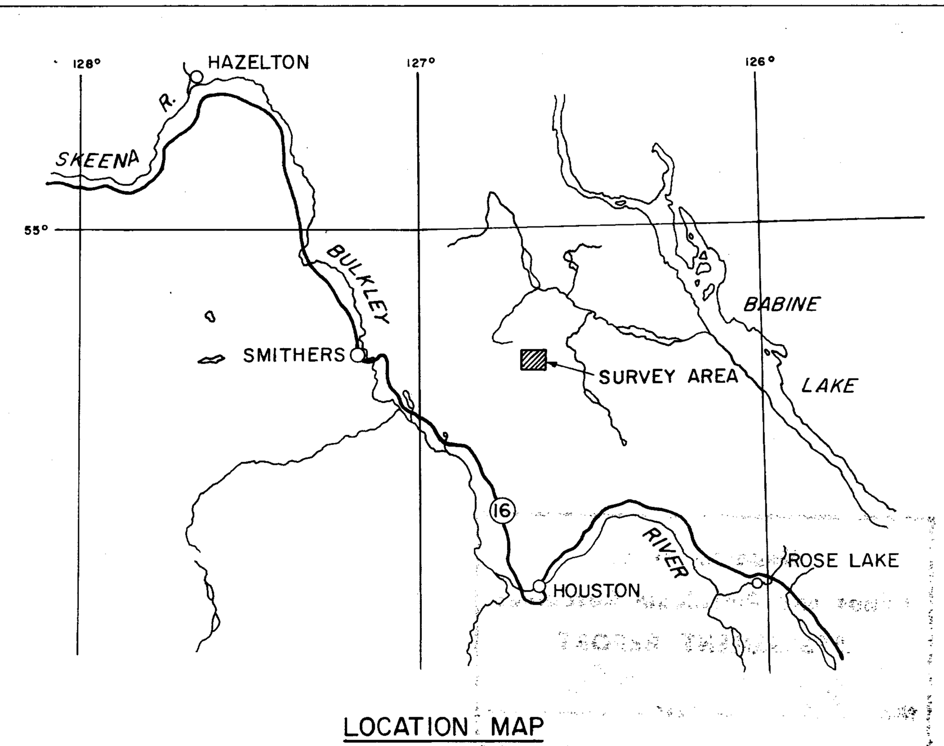
CLAIMS:

Name	Record Number
ASCOT 15 to 24 incl.	53528 to 53537
ASCOT 30, 32, 34, 36	53543, 45, 47, 49
ASCOT 38 to 48 incl.	53551 to 53561
ASCOT 53 to 90 incl.	53566 to 53603
ASCOT 91 to 109 incl.	53604 to 53622
ASCOT 111 to 128 incl.	53624 to 53641

LOCATION:
About 18 miles east of Smithers and
24 miles west of Babine Lake, B. C.
126° 54° N. E.
Omineca Mining Division

DATE:
June 12, 1969





LOCATION MAP

LEGEND

LR — FLIGHT LINE NUMBER, DIRECTION AND NUMBERED CONTROL POINT

500 GAMMA ISOMAGNETIC CONTOUR INTERVAL

100 GAMMA ISOMAGNETIC CONTOUR INTERVAL

20 GAMMA ISOMAGNETIC CONTOUR INTERVAL

MAGNETIC LOW
BASE VALUE ARBITRARY

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP #2

PLATE 2

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY

MAGNETOMETER CONTOUR PLAN
EASTERLY AND WESTERLY ZONES

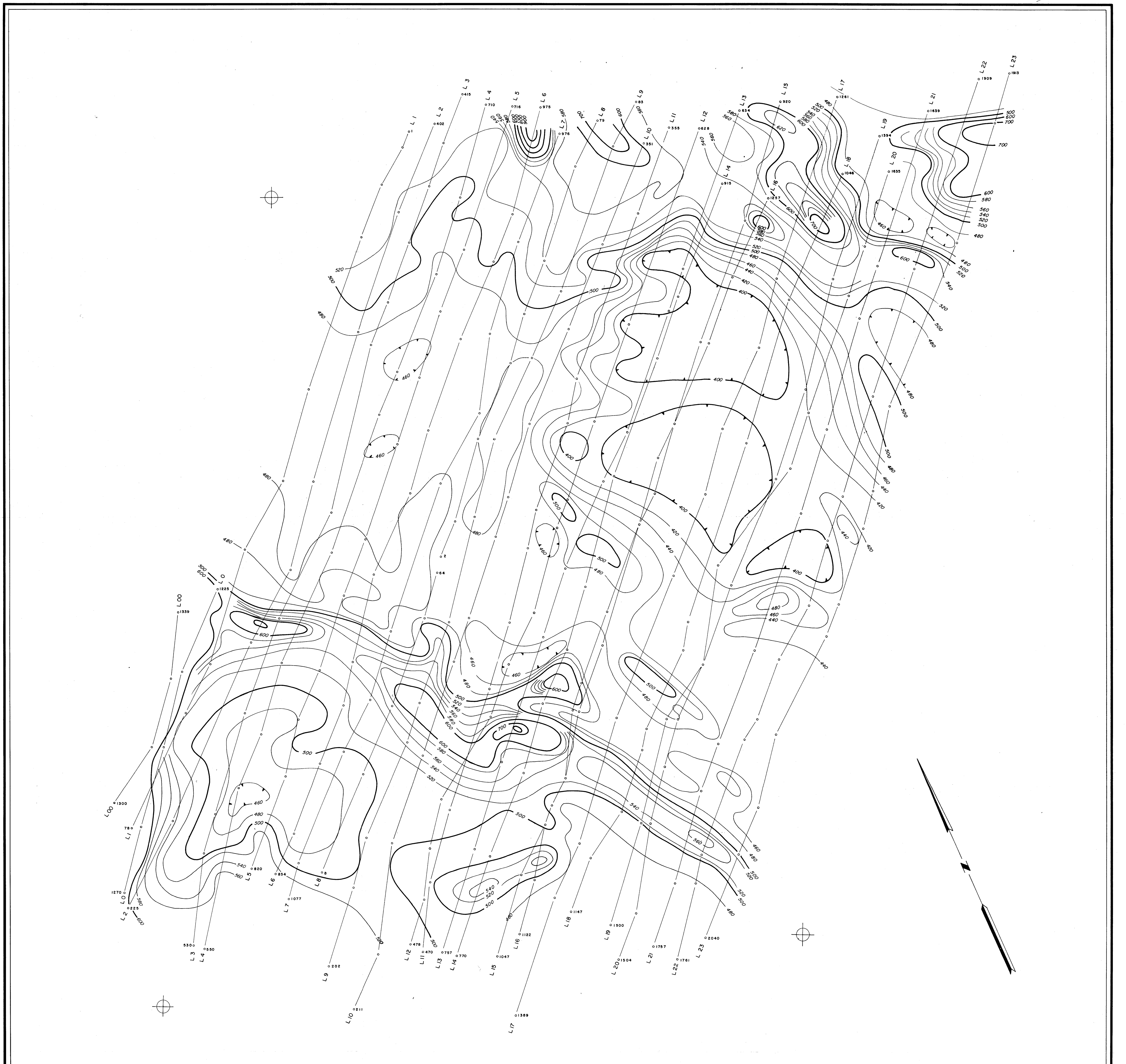
NPM-1

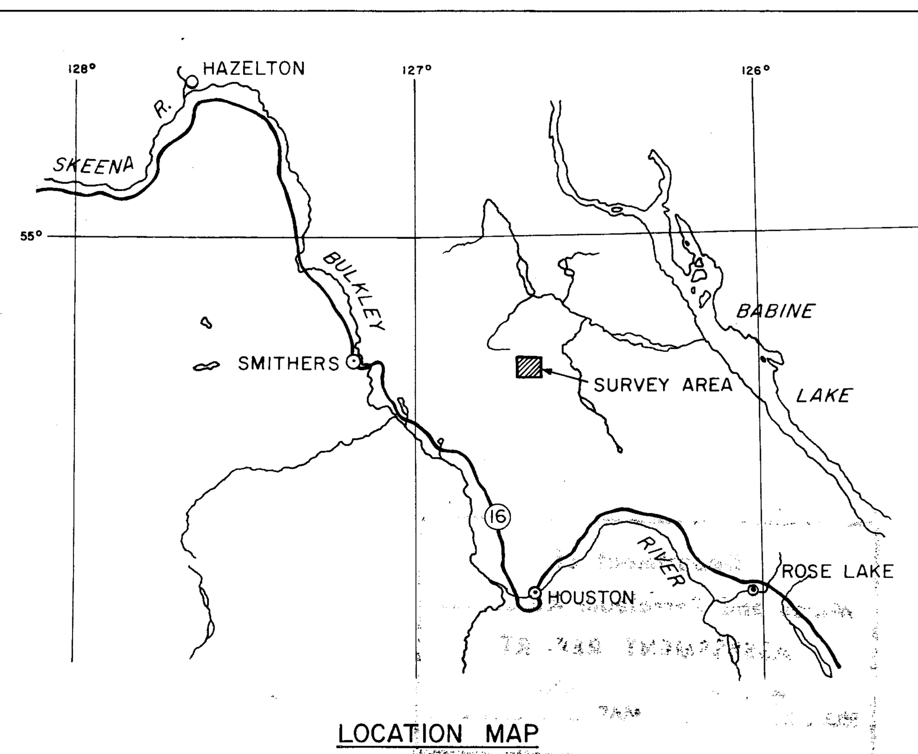
SCALE: 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE-JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≈ 250'
FLIGHT LINE SPACING ≈ 660'

PROFESSIONAL ENGINEER

2139





LOCATION MAP

LEGEND

L 7 ——— FLIGHT LINE NUMBER, DIRECTION AND NUMBERED CONTROL POINT

500 GAMMA ISOMAGNETIC CONTOUR INTERVAL

100 GAMMA ISOMAGNETIC CONTOUR INTERVAL

20 GAMMA ISOMAGNETIC CONTOUR INTERVAL

MAGNETIC LOW

BASE VALUE ARBITRARY

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP #1

PLATE I

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY

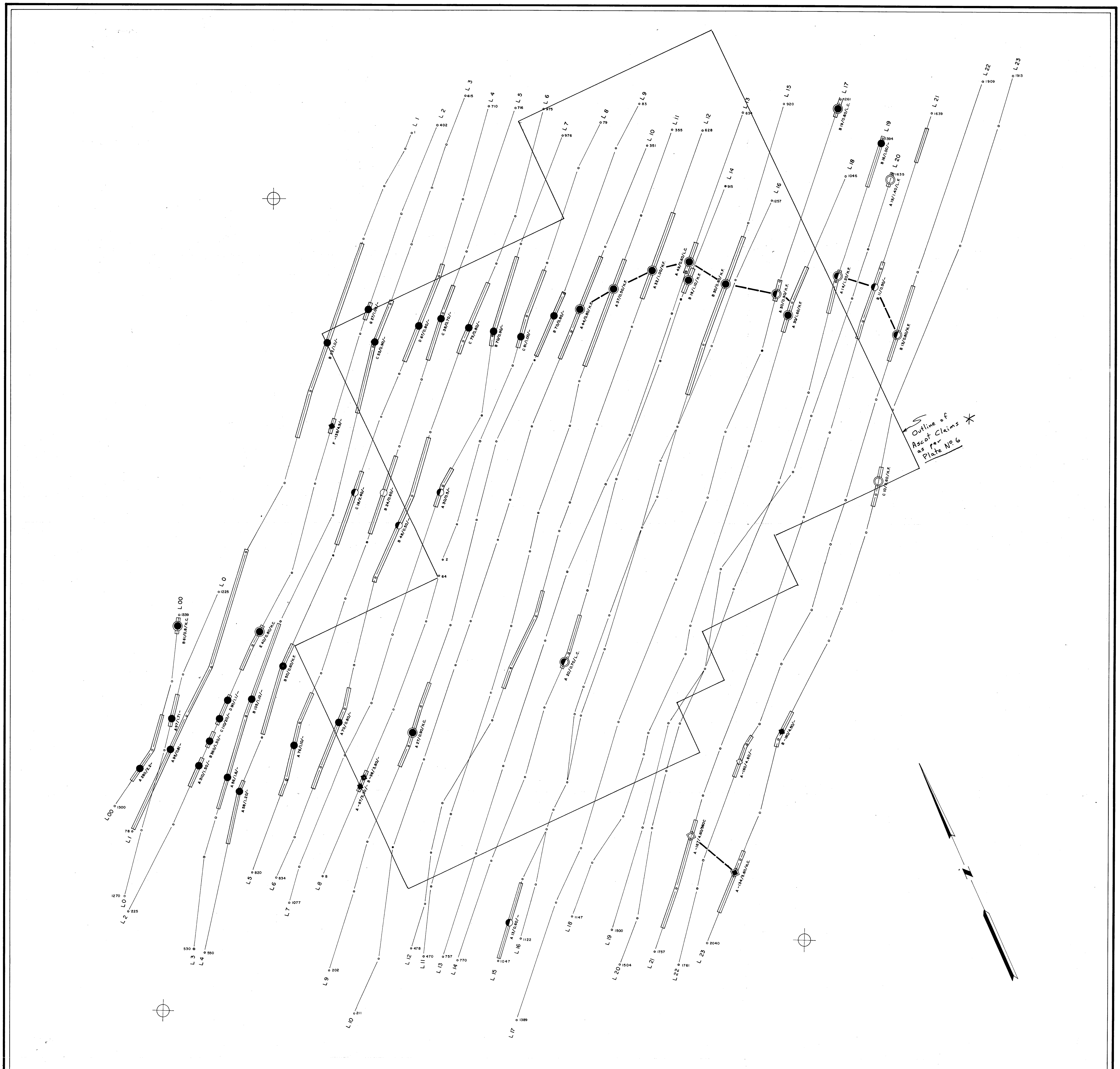
MAGNETOMETER CONTOUR PLAN

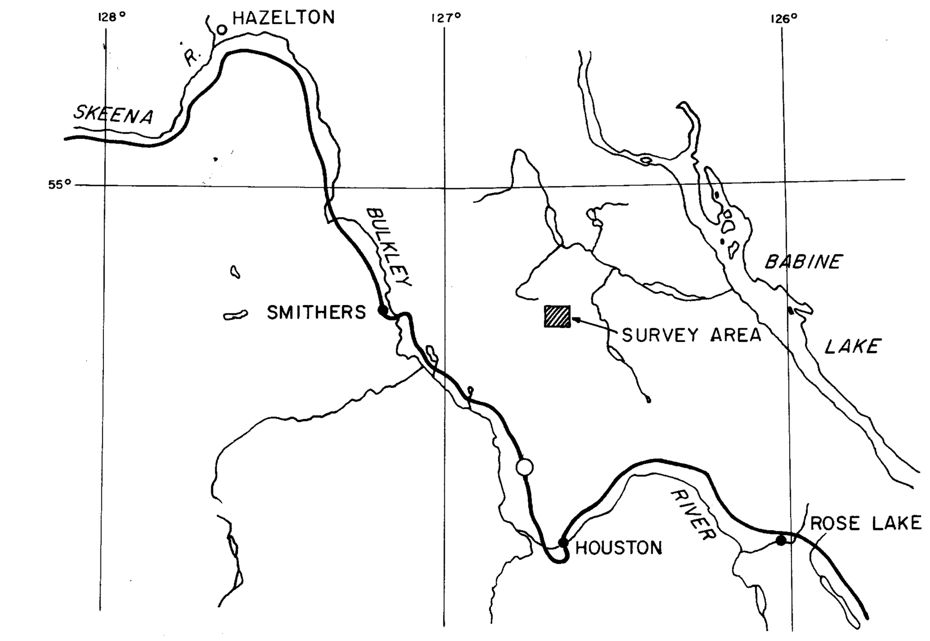
NPM-1

SCALE: 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE-JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≈ 250'
FLIGHT LINE SPACING ≈ 660'

2139





LOCATION MAP

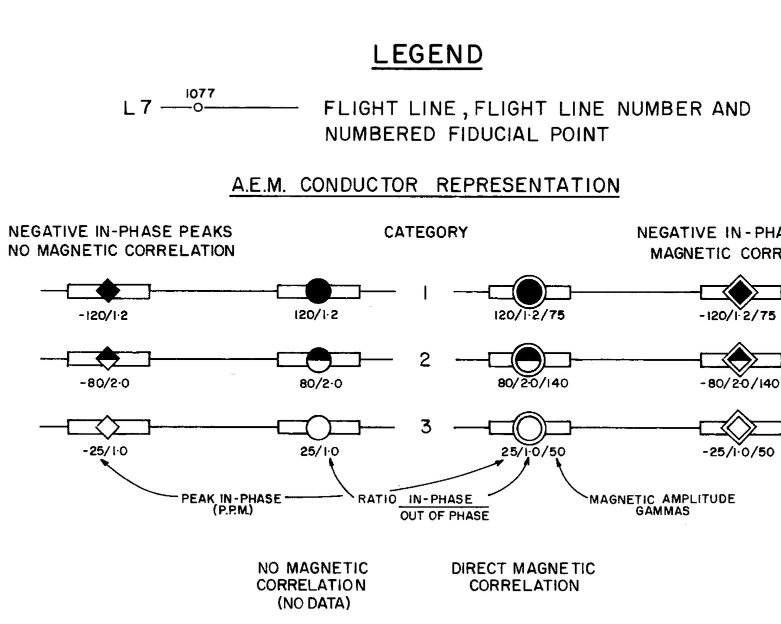


PLATE 3

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

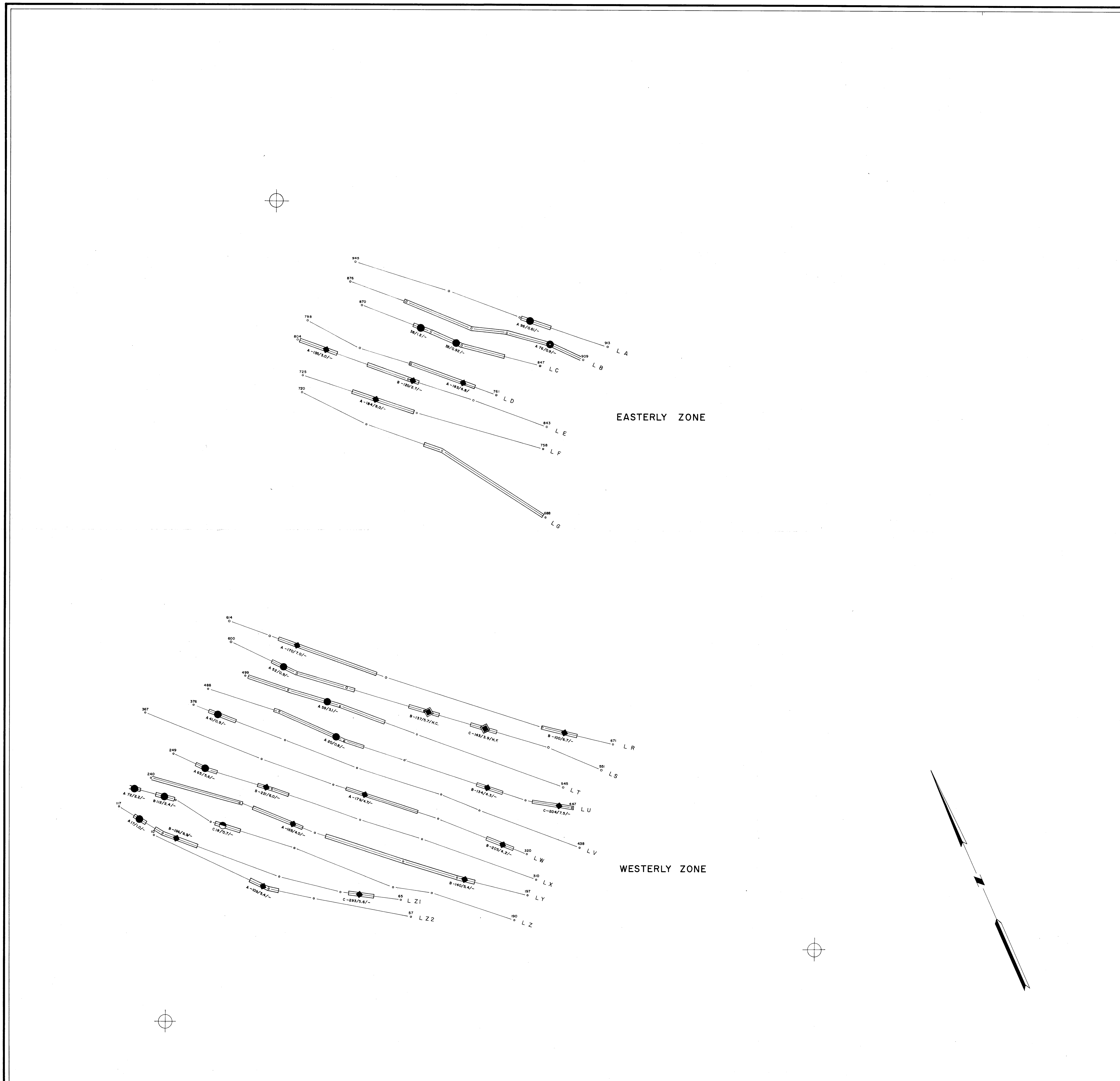
AIRBORNE GEOPHYSICAL SURVEY

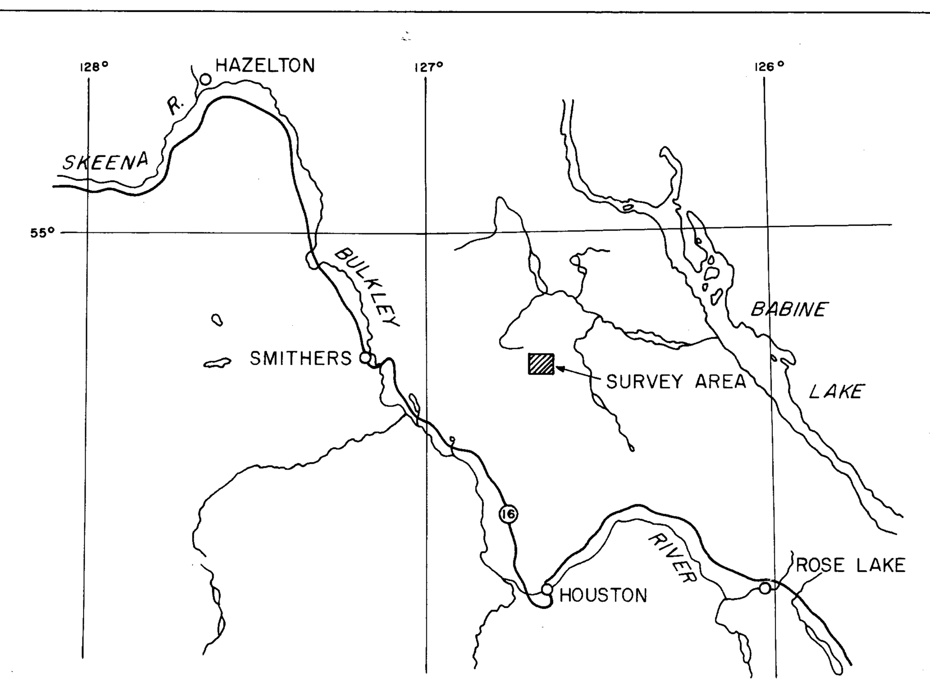
E. M. CONDUCTORS

SCALE: 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE-JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≈ 250'
FLIGHT LINE SPACING ≈ 660'

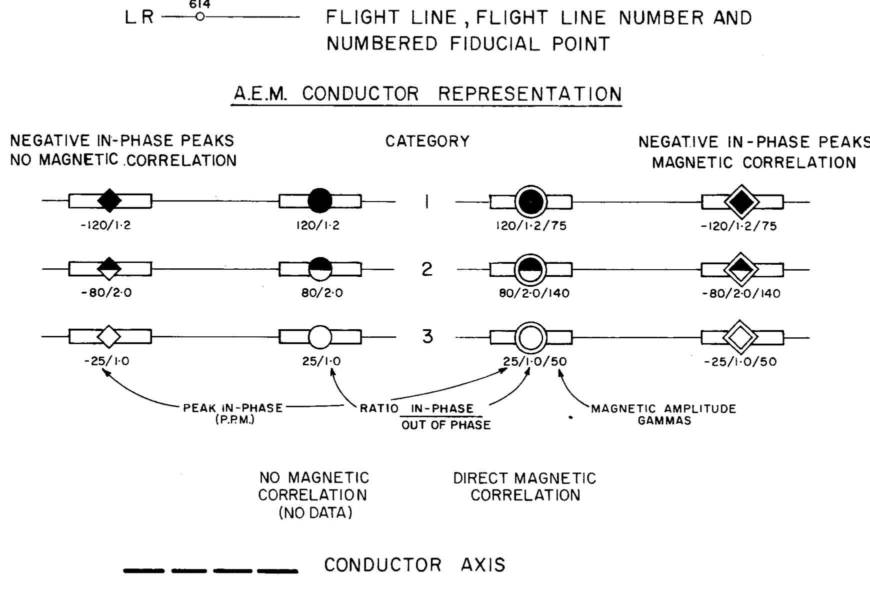
2139





LOCATION MAP

LEGEND



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP #4

PLATE 4

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY

E.M. CONDUCTORS

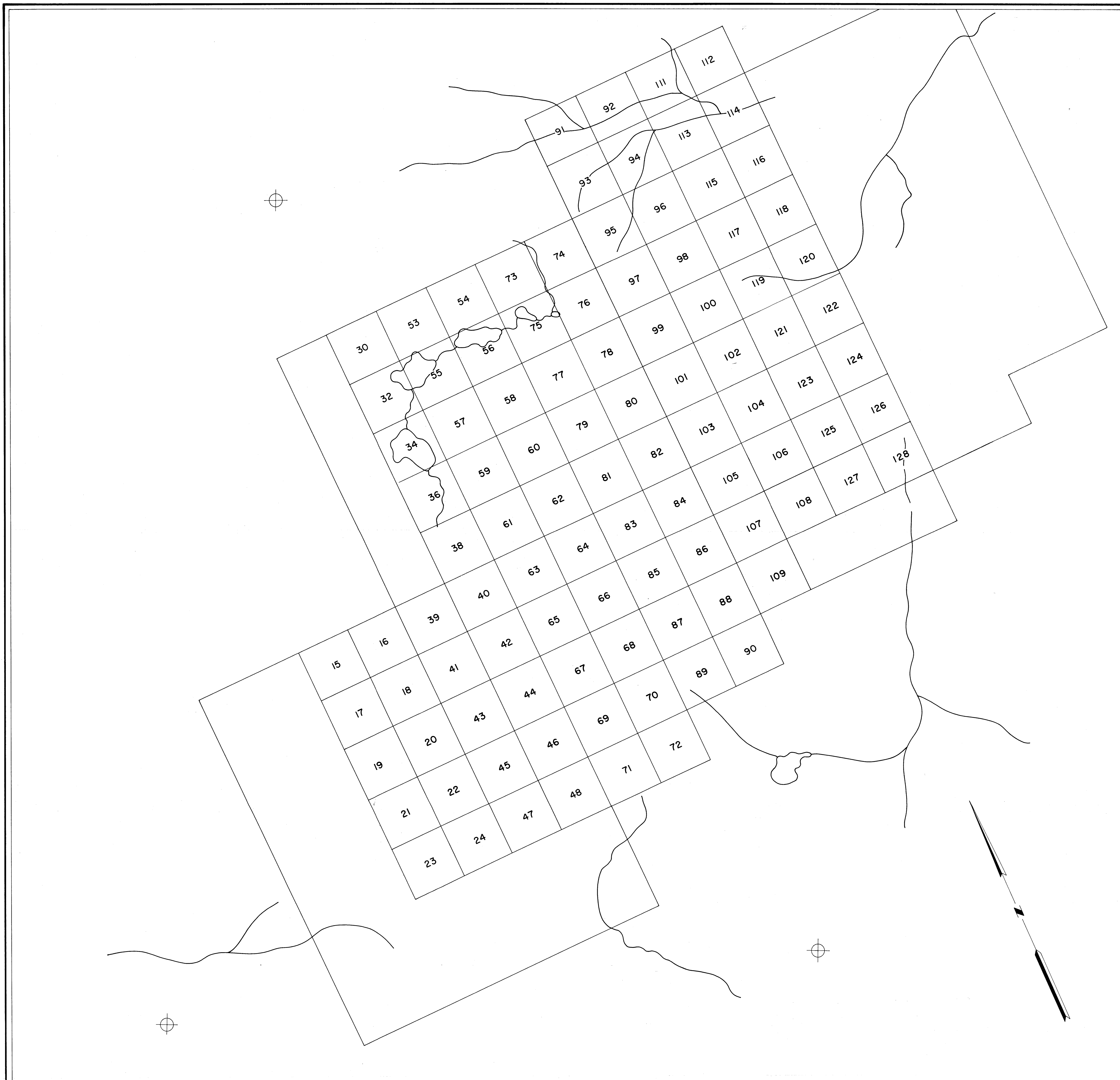
EASTERLY AND WESTERLY ZONES

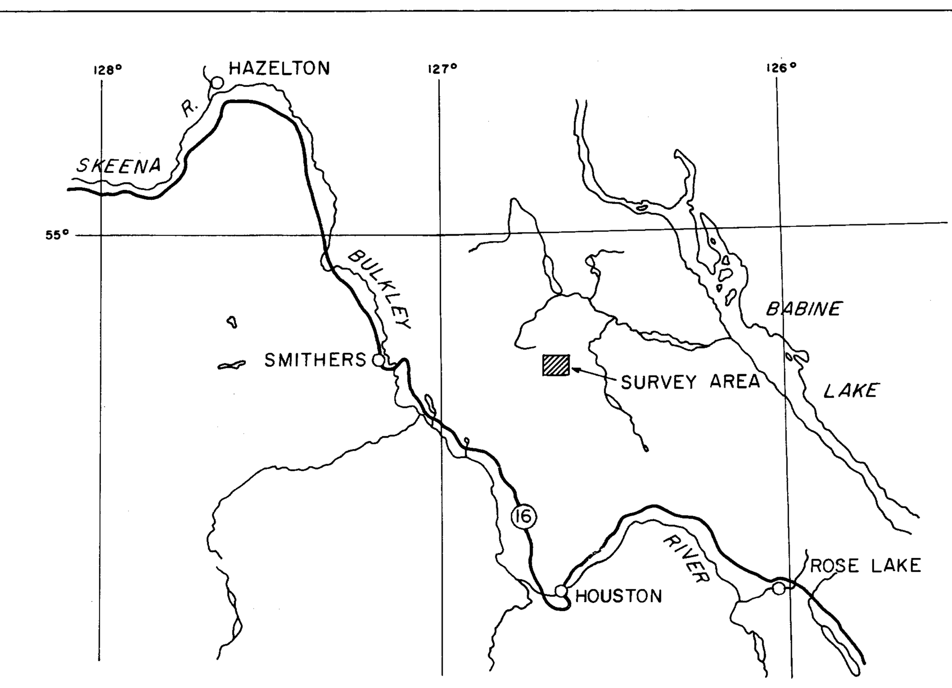
NPM-I

SCALE: 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE-JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≃ 250'
FLIGHT LINE SPACING ≃ 660'

2139





LOCATION MAP

PLATE 6

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY

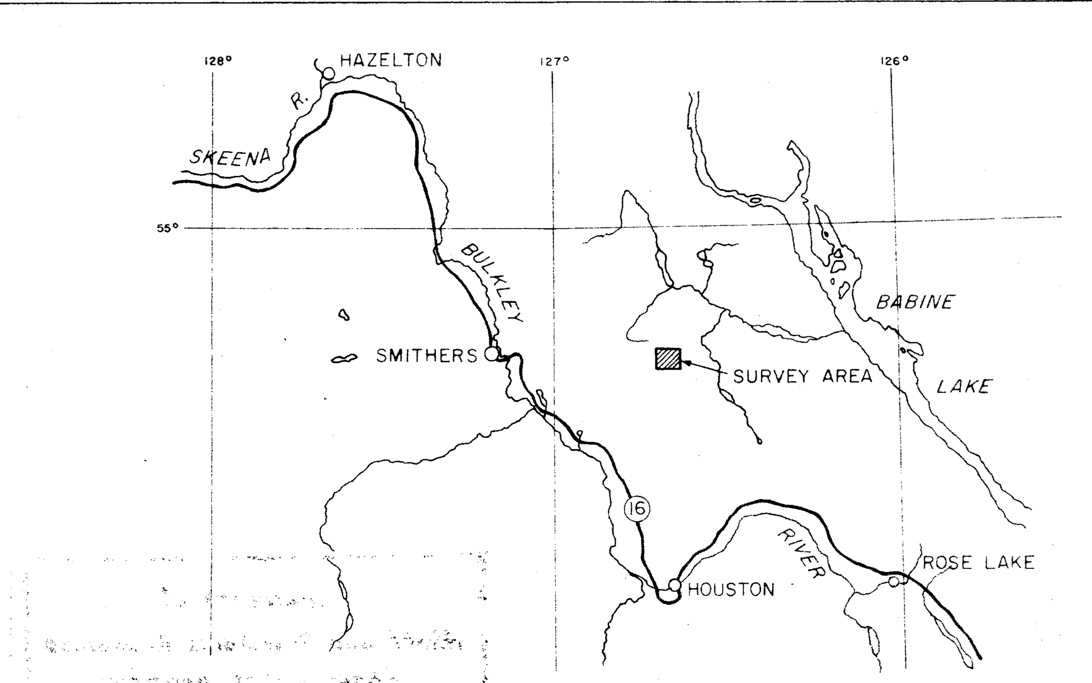
CLAIMS PLAN
ASCOT GROUP

SCALE : 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE-JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≈ 250'
FLIGHT LINE SPACING ≈ 660'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP #6

2139



LOCATION MAP

LEGEND

L 7 1077 — FLIGHT LINE NUMBER, DIRECTION AND NUMBERED CONTROL POINT

500 GAMMA ISOMAGNETIC CONTOUR INTERVAL

100 GAMMA ISOMAGNETIC CONTOUR INTERVAL

20 GAMMA ISOMAGNETIC CONTOUR INTERVAL

MAGNETIC LOW
BASE VALUE ARBITRARY

PROBABLE FAULT

GEOLOGICAL BOUNDARY

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2139 MAP #5

PLATE 5

TEXAS GULF SULPHUR COMPANY INC.

SMITHERS AREA, BRITISH COLUMBIA

AIRBORNE GEOPHYSICAL SURVEY

GEOPHYSICAL INTERPRETATION

SCALE : 1" = 1000'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED JUNE - JULY, 1969
AIRCRAFT TERRAIN CLEARANCE ≅ 250'
FLIGHT LINE SPACING ≅ 660'

2139