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REPORT ON
AIRBORNE GEOPHYSICAL SURVEYS
CRY LAKE AREA, BRITISH COLUMBIA
ON BEHALF OF
FALCONBRIDGE NICKEL MINES LTD.
104I07W/104I10W

by

Richard O. Crosby, B.Sc., P.Eng.
and
John P. Steele, B.Sc.

October 7, 1969

CLAIMS:

Record Number		
25342 N	to	25347 N
24079 K	to	24041 K
24002 K	to	24027 K
23647 H	to	23676 H

LOCATION:
About 50 miles east of Dease Lake,
British Columbia
Laird Mining Division
58°25' North Latitude - 129°00' West Longitude

DATES:
July 7 - July 14, 1969

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SUMMARY

Helicopter-borne electromagnetic and magnetometer surveys were executed over approximately 52 square miles in the Turnagain River - Cry Lake area, British Columbia. A large number of electromagnetic conductors have been revealed, some of which show correlation with magnetic features.

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

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INTRODUCTION

From July 7 to July 14, 1969 geophysical surveys were executed on behalf of Falconbridge Nickel Mines Ltd. in the Cry Lake area, British Columbia covering approximately 52 square miles (see Plate 3). Centre of the area is located 58° 25' N - 129° 00' W. Basic compilation of the data was carried out between July 23 and July 27.

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" = 1320 feet.

The magnetometer sensor and the EM "bird" were flown separately below the helicopter, the former 50 feet and the latter 100 feet below the helicopter.

The purpose of the present program was to map the distribution of 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 twofold. The primary purpose is primarily one of correlation with the electromagnetic conductors and the second purpose is to infer geological structure.

PRESENTATION OF DATA

The results of the geophysical surveys are presented on Plates 1 and 2 on the scale of 1" = 1320 feet. Some topographic features and flight lines are shown on the plates. Plate 1 shows the magnetic contours. The contours are at an interval of 1000 gammas or less, according to magnetic relief. Plate 2 shows the electromagnetic results. Conductor half-widths and peak locations are shown, coded as described in Appendix "A". The in-phase amplitude, in-phase to 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. In order to record three traces on the dual trace recorder, the in-phase and the out-of-phase utilize the same pen by alternately displaying level and recording the other trace. The in-phase trace is displayed for a period twice that of the out-of-phase to distinguish between the traces.

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 56,500 gammas.

DISCUSSION OF RESULTS

The electromagnetic responses of interest obtained during the current survey are listed in Table 1. A large portion of the survey area shows above normal electromagnetic response and the conductors range from poor to good conductivity and low to high amplitude.

The conductors have been grouped together according to their electromagnetic characteristics and the general magnetic characteristics of their location.

As there are many electromagnetic conductors in the survey area, selection of targets could be based upon conductivity, category and magnetic correlation and weighted by all geological information directly available to Falconbridge Nickel Mines Ltd. To examine the selected targets on the ground and to determine their precise location, a combination of surveys on small grids is recommended. The electromagnetic anomalies with the recommended geophysical surveys are listed in Table 2. Geological and geochemical surveys could be conducted at the same time as the geophysical surveys.

Respectfully submitted,

SEIGEL ASSOCIATED LIMITED

Richard O. Crosby per JAS

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John P. Steele

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October 7, 1969

TABLE ONE

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
A	4	752	2	Poor	Yes
A	4	785	2	Med/Poor	No
A	4	792	2	Poor	No
A	5	871	2	Good	No
A	5	867	2	Medium	No
A	5	862	2	Med/Poor	Yes
A	5	857	2	Medium	Yes
A	6	1176	2	Poor	Yes
A	7	1547	1	Medium	Yes
A	7	1530	2	Poor	Yes
A	7	1528	2	Poor	Yes
B	2S	5370	1	Good	No
B	2S	5367	1	Good	No
B	2S	5355	1	Medium	No
B	2S	5350	1	Med/Poor	No
B	2S	5344	1	Poor	Yes
B	1S	5503	1	Good	No
B	1S	5514	1	Medium	No
B	1S	5517	1	Medium	Yes
B	1S	5523	1	Medium	Yes
B	1S	5525	1	Medium	Yes
B	1S	5531	1	Medium	Yes
B	1S	5535	1	Medium	Yes
B	1S	5541	1	Medium	No

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
B	1S	5547	1	Med/Poor	Yes
B	1S	5572	1	Medium	Yes
B	1S	5578	1	Med/Poor	Yes
B	1S	5579	1	Med/Poor	Yes
B	1S	5581	1	Medium	Yes
B	1S	5583	1	Medium	Yes
B	1S	5585	1	Medium	No
B	1S	5595	1	Medium	Yes
B	1N	134	2	Medium	Yes
B	1N	103	1	Good	Yes
B	1N	70	1	Med/Poor	No
B	1N	64	1	Medium	Yes
B	1N	61	1	Medium	Yes
B	2N	273	1	Good	Yes
B	2N	279	1	Good	Yes
B	2N	288	1	Good	Yes
B	2N	320	2	Poor	Yes
B	2N	324	2	Poor	Yes
B	2N	358	1	Medium	No
B	3N	536	1	Good	Yes
B	3N	533	1	Medium	Yes
B	3N	531	1	Medium	Yes
B	3N	519	1	Med/Poor	Yes
B	3N	505	2	Medium	Yes
B	3N	497	1	Good	Yes

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
B	3N	493	1	Medium	Yes
B	3N	485	1	Good	Yes
B	3N	482	1	Good	Yes
B	3N	472	1	Good	Yes
B	4N	678	1	Good	Yes
B	4N	689	1	Medium	No
B	4N	717	2	Poor	Yes
B	4N	726	1	Medium	Yes
B	4N	732	1	Good	Yes
B	4N	734	1	Medium	Yes
B	4N	738	1	Good	Yes
B	4N	752	1	Good	Yes
B	5N	921	1	Medium	Yes
B	5N	920	1	Medium	Yes
B	5N	916	1	Med/Poor	No
B	5N	906	1	Med/Poor	Yes
B	5N	893	1	Good	Yes
B	5N	888	1	Good	Yes
B	5N	883	1	Good	Yes
B	5N	878	1	Medium	Yes
B	6N	1103	1	Medium	Yes
B	6N	1107	1	Medium	Yes
B	6N	1122	1	Med/Poor	Yes
B	6N	1130	1	Med/Poor	Yes

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
B	6N	1135	1	Good	Yes
B	6N	1144	1	Medium	Yes
B	6N	1151	1	Medium	No
B	7N	1575	1	Medium	No
B	7N	1571	1	Medium	Yes
B	7N	1568	1	Medium	No
B	7N	1555	1	Good	Yes
B	8N	1703	1	Good	Yes
B	8N	1711	1	Medium	No
B	8N	1779	1	Good	Yes
B	8N	1790	1	Medium	Yes
B	8N	1799	1	Med/Poor	Yes
B	8N	1807	1	Med/Poor	No
B	8N	1813	1	Med/Poor	No
B	8N	1817	1	Medium	No
B	8N	1832	1	Medium	No
B	8N	1837	1	Medium	No
B	9N	81	1	Medium	Yes
B	9N	75	1	Medium	Yes
B	9N	65	1	Good	Yes
B	10	326	1	Med/Poor	Yes
B	10	329	1	Medium	Yes
B	10N	338	1	Medium	Yes
B	11N	537	1	Medium	Yes
B	11N	535	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
C	8N	1750	1	Medium	Yes
C	8N	1752	1	Medium	Yes
C	8N	1757	1	Med/Poor	Yes
C	9N	98	1	Good	No
C	9N	94	1	Medium	Yes
C	10N	276	1	Good	Yes
C	11N	561	1	Medium	Yes
C	11N	558	1	Medium	Yes
C	11N	557	2	Poor	Yes
D	4N	678	1	Good	No
D	4N	689	1	Medium	Yes
D	5N	938	1	Good	Yes
D	6N	1082	1	Good	No
D	6N	1089	1	Good	Yes
D	8N	1734	1	Medium	Yes
D	8N	1739	1	Medium	No
D	9N	108	1	Good	No
D	11N	569	1	Good	Yes
D	11N	565	1	Good	No
D	13N	5924	1	Medium	Yes
D	13N	5922	1	Good	No
D	13N	5919	1	Good	No
D	13N	5917	1	Good	No
D	13N	5913	1	Good	No

ANOMALY	LINE	PEAK FIDUCIAL	Cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
D	14N	1245	1	Good	Yes
D	14N	1251	1	Good	No
E	1N	002	1	Med/Poor	No
E	6N	1181	3	Poor	No
E	6N	1182	3	Poor	No
E	6N	1184	3	Poor	No
E	6N	1187	2	Poor	No
E	6N	1196	1	Med/Poor	No
E	6N	1198	1	Med/Poor	No
E	7N	1511	2	Poor	No
E	10N	403	1	Med/Poor	No
E	11N	476	2	Poor	No
E	11N	473	2	Poor	No
E	11N	470	2	Poor	No
E	12N	861	2	Medium	No
E	12N	864	1	Poor	No
E	12N	869	1	Med/Poor	No
E	13N	5842	1	Med/Poor	No
E	14N	1390	1	Poor	No
F	11N	526	1	Medium	Yes
F	11N	520	1	Med/Poor	Yes
F	11N	518	1	Medium	Yes
F	11N	516	1	Poor	Yes
F	12N	765	2	Poor	Yes

ANOMALY	LINE	PEAK FIDUCIAL	Category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
F	12N	768	1	Medium	Yes
F	12N	773	1	Medium	No
F	12N	778	1	Good	Yes
F	12N	784	1	Medium	Yes
F	12N	786	1	Medium	Yes
F	12N	795	1	Good	Yes
F	12N	803	1	Good	Yes
F	12N	810	1	Good	No
F	12N	817	1	Medium	No
F	12N	820	1	Med/Poor	No
F	13N	5889	1	Good	No
F	13N	5885	1	Good	Yes
F	13N	5881	1	Good	Yes
F	13N	5864	2	Poor	Yes
F	13N	5862	2	Poor	Yes
F	13N	5859	2	Poor	Yes
F	13N	5856	2	Poor	No
F	14N	1316	1	Good	Yes
F	14N	1318	1	Medium	Yes
F	14N	1326	1	Good	Yes
F	14N	1333	2	Medium	Yes
F	14N	1358	1	Poor	Yes
F	14N	1362	2	Poor	Yes
F	15N	1475	1	Medium	Yes
F	15N	1470	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
F	15N	1468	1	Medium	Yes
F	16N	1678	1	Good	Yes
F	16N	1681	1	Medium	Yes
F	16N	1688	1	Medium	Yes
F	16N	1712	2	Poor	Yes
F	16N	1716	2	Poor	Yes
F	17N	1836	1	Good	Yes
F	17N	1833	1	Good	Yes
F	18N	2030	1	Medium	Yes
F	18N	2046	1	Good	Yes
F	18N	2070	2	Med/Poor	Yes
F	19N	2169	2	Poor	Yes
F	20N	2410	2	Poor	Yes
G	12N	733	1	Good	Yes
G	12N	738	1	Medium	Yes
G	12N	742	1	Medium	Yes
G	13N	5909	1	Good	Yes
G	13N	5907	1	Good	Yes
G	13N	5905	1	Good	Yes
G	13N	5900	2	Poor	Yes
G	13N	5898	1	Good	Yes
G	13N	5896	1	Good	Yes
G	13N	5894	1	Good	Yes
G	13N	5892	1	Good	No

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
G	14N	1265	1	Good	Yes
G	14N	1270	1	Good	Yes
G	15N	1494	3	Poor	Yes
H	13N	5848	2	Poor	Yes
H	17N	1810	2	Poor	No
H	17N	1803	1	Poor	No
H	18N	2086	2	Poor	No
H	18N	2100	2	Poor	No
H	19N	2152	2	Poor	No
H	20N	2424	2	Poor	No
H	20N	2440	2	Poor	No
H	22N	2794	3	Poor	No
H	22N	2800	2	Poor	No
H	22N	2806	2	Poor	No
H	23N	2899	1	Poor	No
H	24N	3188	2	Med/Poor	No
I	19N	2193	1	Medium	Yes
I	20N	2368	1	Medium	Yes
I	20N	2371	1	Medium	Yes
I	20N	2374	1	Medium	Yes
I	20N	2385	1	Good	Yes
I	20N	2389	1	Medium	Yes
I	22N	2741	1	Poor	Yes
I	22N	2745	1	Med/Poor	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
I	22N	2752	1	Medium	Yes
I	23N	2927	1	Medium	Yes
I	24N	3140	2	Poor	Yes
I	24N	3152	1	Good	Yes
I	25N	3326	2	Poor	Yes
I	25N	3317	1	Medium	Yes
I	26N	3537	2	Medium	No
J	16N	1617	1	Medium	Yes
J	16N	1621	1	Medium	Yes
J	16N	1628	1	Good	Yes
J	16N	1633	1	Med/Poor	Yes
J	16N	1635	1	Medium	Yes
J	17N	1879	1	Medium	Yes
J	17N	1870	1	Med/Poor	Yes
J	17N	1865	1	Medium	Yes
J	17N	1859	1	Good	Yes
J	18N	1969	1	Good	No
J	18N	1978	1	Medium	No
J	18N	1983	1	Medium	Yes
J	18N	1988	1	Medium	Yes
J	18N	1996	1	Good	Yes
J	19N	2233	1	Medium	Yes
J	19N	2222	1	Med/Poor	Yes
J	20N	2297	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	20N	2301	1	Medium	Yes
J	20N	2309	1	Medium	Yes
J	20N	2314	1	Good	Yes
J	20N	2319	1	Medium	Yes
J	20N	2322	1	Medium	Yes
J	21N	2609	1	Medium	Yes
J	21N	2606	1	Medium	Yes
J	21N	2602	1	Good	Yes
J	22N	2659	1	Poor	Yes
J	22N	2664	1	Med/Poor	Yes
J	22N	2666	1	Med/Poor	Yes
J	23N	3021	1	Med/Poor	Yes
J	23N	3011	1	Medium	Yes
J	23N	3006	1	Good	Yes
J	24N	3070	1	Med/Poor	Yes
J	24N	3075	1	Med/Poor	Yes
J	25N	3390	1	Med/Poor	Yes
J	26N	3436	1	Med/Poor	Yes
J	26N	3446	1	Medium	Yes
J	26N	3449	1	Medium	Yes
J	26N	3453	1	Med/Poor	Yes
J	26N	3471	1	Medium	Yes
J	27N	3771	1	Medium	Yes
J	27N	3770	1	Med/Poor	Yes

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	27N	3764	1	Good	Yes
J	28N	3817	2	Poor	Yes
J	28N	3819	1	Med/Poor	Yes
J	28N	3822	1	Med/Poor	Yes
J	28N	3823	1	Med/Poor	Yes
J	28N	3826	1	Medium	Yes
J	28N	3827	1	Medium	Yes
J	28N	3829	1	Medium	Yes
J	28N	3834	1	Medium	Yes
J	28N	3838	2	Poor	Yes
J	29N	267	1	Med/Poor	Yes
J	29N	265	1	Med/Poor	Yes
J	29N	259	2	Poor	Yes
J	30N	175	2	Good	No
J	30N	189	2	Med/Poor	Yes
J	30N	192	1	Med/Poor	Yes
J	30N	194	1	Medium	Yes
J	30N	198	1	Medium	Yes
J	30N	200	1	Med/Poor	Yes
J	30N	205	1	Medium	Yes
J	30N	211	2	Med/Poor	Yes
J	31N	136	1	Poor	No
J	32N	302	2	Medium	No
J	32N	306	2	Medium	No
J	32N	312	2	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	32N	318	1	Medium	Yes
J	32N	322	1	Medium	No
J	32N	325	1	Med/Poor	Yes
J	32N	327	1	Med/Poor	No
J	32N	333	1	Med/Poor	Yes
J	32N	337	1	Med/Poor	Yes
J	32N	339	1	Poor	Yes
J	33N	649	1	Med/Poor	Yes
J	33N	642	1	Medium	Yes
J	33N	639	1	Medium	Yes
J	33N	636	1	Med/Poor	No
J	33N	632	1	Medium	Yes
J	33N	629	1	Poor	Yes
J	33N	625	2	Poor	Yes
J	34N	683	2	Good	No
J	34N	688	1	Med/Poor	Yes
J	34N	695	1	Medium	Yes
J	34N	698	1	Med/Poor	Yes
J	34N	705	1	Med/Poor	Yes
J	34N	707	1	Med/Poor	Yes
J	34N	709	1	Medium	Yes
J	35N	1011	1	Med/Poor	Yes
J	35N	1000	1	Good	Yes
J	36N	1055	1	Med/Poor	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	36N	1056	1	Poor	Yes
J	36N	1061	1	Poor	No
J	36N	1066	1	Poor	Yes
J	36N	1068	1	Poor	Yes
J	36N	1076	1	Med/Poor	Yes
J	36N	1083	1	Medium	Yes
J	36N	1086	1	Medium	Yes
J	37N	1370	2	Med/Poor	Yes
J	37N	1366	1	Medium	Yes
J	37N	1362	1	Medium	Yes
J	37N	1346	2	Poor	Yes
J	38N	1418	2	Poor	Yes
J	38N	1422	2	Poor	Yes
J	38N	1425	2	Poor	Yes
J	38N	1430	1	Med/Poor	Yes
J	38N	1432	1	Med/Poor	Yes
J	38N	1442	1	Medium	Yes
J	38N	1446	1	Medium	Yes
J	39N	1722	1	Med/Poor	Yes
J	39N	1718	1	Medium	Yes
J	39N	1715	1	Med/Poor	Yes
J	39N	1711	1	Medium	Yes
J	39N	1709	1	Medium	Yes
J	40N	1750	1	Medium	No

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	40N	1758	1	Medium	Yes
J	40N	1761	1	Medium	Yes
J	40N	1770	1	Good	Yes
J	40N	1779	1	Good	Yes
J	40N	1788	1	Medium	Yes
J	41N	2071	1	Med/Poor	Yes
J	41N	2069	1	Med/Poor	Yes
J	41N	2064	1	Medium	Yes
J	41N	2062	1	Medium	Yes
J	41N	2059	1	Med/Poor	Yes
J	41N	2057	1	Med/Poor	Yes
J	41N	2050	3	Poor	Yes
J	41N	2047	3	Poor	Yes
J	42N	2104	2	Poor	No
J	42N	2109	1	Med/Poor	Yes
J	42N	2111	1	Medium	Yes
J	42N	2115	1	Med/Poor	No
J	42N	2117	1	Medium	Yes
J	42N	2118	1	Medium	Yes
J	42N	2121	1	Good	Yes
J	42N	2124	1	Med/Poor	Yes
J	42N	2129	1	Medium	No
J	43N	2419	1	Med/Poor	Yes
J	43N	2408	1	Medium	Yes
J	43N	2394	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	43N	2386	3	Poor	Yes
J	43N	2368	2	Poor	Yes
J	43N	2362	1	Medium	Yes
J	44N	2457	1	Poor	Yes
J	44N	2458	1	Med/Poor	Yes
J	44N	2469	1	Medium	Yes
J	44N	2480	1	Medium	No
J	44N	2485	1	Med/Poor	Yes
J	44N	2493	1	Med/Poor	Yes
J	45N	2788	1	Medium	Yes
J	45N	2786	1	Medium	Yes
J	45N	2777	1	Medium	Yes
J	45N	2773	1	Good	Yes
J	45N	2765	1	Med/Poor	No
J	45N	2761	1	Med/Poor	Yes
J	45N	2755	1	Medium	Yes
J	45N	2742	1	Med/Poor	No
J	46N	2831	2	Poor	No
J	46N	2838	1	Med/Poor	Yes
J	46N	2842	1	Medium	Yes
J	46N	2849	1	Medium	No
J	46N	2852	1	Good	Yes
J	46N	2856	1	Medium	Yes
J	46N	2866	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	46N	2870	1	Medium	Yes
J	46N	2872	1	Med/Poor	Yes
J	46N	2875	1	Medium	Yes
J	46N	2878	1	Medium	Yes
J	46N	2883	1	Good	No
J	47N	3175	1	Medium	Yes
J	47N	3170	1	Medium	Yes
J	47N	3167	1	Medium	Yes
J	47N	3163	3	Poor	Yes
J	47N	3160	1	Medium	Yes
J	47N	3154	1	Good	Yes
J	47N	3152	1	Medium	Yes
J	48N	3238	2	Poor	No
J	48N	3240	2	Poor	No
J	48N	3246	1	Poor	Yes
J	48N	3247	1	Med/Poor	Yes
J	48N	3252	1	Med/Poor	Yes
J	49N	3566	1	Medium	No
J	49N	3562	1	Medium	Yes
J	49N	3557	2	Med/Poor	No
J	49N	3540	1	Med/Poor	Yes
J	50N	3652	1	Medium	Yes
J	50N	3656	1	Medium	Yes
J	50N	3661	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
J	50N	3664	1	Medium	Yes
J	51N	3459	1	Med/Poor	Yes
J	52N	4048	1	Med/Poor	Yes
J	52N	4052	1	Med/Poor	Yes
J	52N	4053	1	Poor	Yes
K	31N	78	1	Med/Poor	Yes
K	31N	73	2	Medium	Yes
K	32N	389	1	Medium	Yes
K	32N	391	1	Med/Poor	Yes
K	33N	576	1	Good	Yes
K	33N	569	1	Medium	Yes
K	33N	566	2	Medium	Yes
K	35N	947	1	Med/Poor	Yes
K	36N	1127	1	Medium	Yes
K	37N	1307	1	Med/Poor	Yes
K	40N	1816	1	Good	Yes
K	40N	1828	1	Medium	Yes
K	41N	2010	1	Poor	Yes
L	48N	3287	1	Med/Poor	Yes
L	48N	3290	1	Medium	Yes
M	52N	4060	1	Med/Poor	No
M	52N	4064	1	Poor	No
N	47N	3203	2	Medium	Yes
N	47N	3200	1	Medium	Yes

ANOMALY	LINE	PEAK FIDUCIAL	cate-gory	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
N	47N	3198	1	Medium	Yes
O	49N	3590	1	Poor	Yes
O	49N	3582	1	Med/Poor	Yes
O	49N	3572	1	Med/Poor	Yes
O	50N	3635	2	Med/Poor	Yes
O	50N	3640	1	Med/Poor	Yes
O	51N	3981	1	Medium	Yes
O	51N	3972	1	Medium	Yes
O	52N	4032	1	Medium	Yes
O	52N	4038	2	Med/Poor	No
O	53N	4404	1	Medium	Yes
O	53N	4397	1	Medium	Yes
O	53N	4393	1	Med/Poor	No
O	53N	4388	1	Good	Yes
O	53N	4384	1	Medium	Yes
O	53N	4378	1	Medium	No
O	54N	4416	1	Medium	Yes
O	54N	4420	1	Med/Poor	Yes
O	54N	4422	1	Medium	Yes
O	54N	4429	1	Medium	No
O	54N	4436	1	Medium	Yes
O	54N	4442	1	Medium	Yes
O	54N	4448	1	Medium	Yes
P	55N	4634	1	Good	Yes

ANOMALY	LINE	PEAK FIDUCIAL	category	ELECTRICAL CHARACTER	MAGNETIC CHARACTER
P	55N	4626	1	Medium	No
P	55N	4623	1	Good	No
P	56N	4643	3	Medium	Yes
P	56N	4648	2	Medium	No
P	56N	4652	2	Medium	Yes
P	56N	4658	1	Medium	Yes
P	56N	4664	1	Medium	No
P	56N	4667	1	Medium	No
P	57N	4736	1	Good	Yes
P	57N	4731	1	Good	Yes
P	57N	4723	1	Medium	Yes
P	58N	4756	1	Medium	No
P	58N	4762	1	Medium	Yes
P	58N	4768	1	Good	No
P	58N	4773	1	Good	Yes
P	58N	4776	1	Good	Yes
P	58N	4781	1	Medium	Yes
P	59N	4850	1	Medium	Yes
P	59N	4845	1	Med/Poor	Yes
P	59N	4842	1	Med/Poor	Yes
P	59N	4836	2	Med/Poor	Yes
P	60N	4876	1	Med/Poor	Yes
P	60N	4878	1	Poor	Yes
P	61N	4950	1	Med/Poor	Yes
P	61N	4947	2	Poor	Yes

TABLE TWO

ANOMALY	ELECTROMAGNETIC CHARACTER	GENERAL MAGNETIC CHARACTER OF SURVEY AREA	RECOMMENDED GROUND GEOPHYSICAL SURVEY
A	Low amplitude, poor conductivity	Southward flank of 3000 and high	Turam electromagnetic induced polarization
B	Medium amplitude, good conductivity	Low relief	Magnetometer, electromagnetic
C	Medium amplitude, good conductivity	Low relief	Magnetometer, electromagnetic
D	Medium amplitude, good conductivity	Low relief	Magnetometer, electromagnetic
E	Low amplitude, poor conductivity	Low relief	Turam electromagnetic, induced polarization
F	Low/medium amplitude, medium conductivity	Southward flank of 3000 and high	Electromagnetic, induced polarization
G	Low amplitude, good conductivity	Coincident with 2500 and high	Magnetometer, electromagnetic, induced polarization
H	Low amplitude, poor conductivity	Low magnetic relief	Induced polarization
I	Medium amplitude, good conductivity	Eastward flank of 3000 and high	Electromagnetic
J	High amplitude, medium conductivity	Coincident with 1500 and low to north of 3000 and high	Electromagnetic, magnetometer

ANOMALY	ELECTROMAGNETIC CHARACTER	GENERAL MAGNETIC CHARACTER OF SURVEY AREA	RECOMMENDED GROUND GEOPHYSICAL SURVEY
K	Low/medium amplitude, medium/good conductivity	Southward flank of 3000 and high	Electromagnetic
L	Low amplitude, medium conductivity	Coincident with 1000 and high	Magnetometer, Turam electromagnetic, induced polarization
M	Low amplitude, poor conductivity	Low magnetic relief	Induced polarization
N	High amplitude, medium conductivity	Coincident with 700 and high	Magnetometer, electromagnetic
O	High amplitude, medium conductivity	Northwest flank of 3000 and high	Magnetometer, electromagnetic
P	High amplitude, medium conductivity	Medium magnetic relief	Magnetometer, electromagnetic

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).

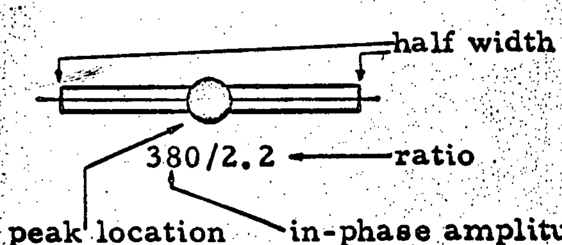
d) Conductor Coding. Conductor intersections are graded in electrical categories 1, 2 and 3, based on the in-phase amplitude but taking into account the terrain clearance. For tabular bodies such as sheet-like ore deposits, strata bound conductors and overburden, their response drops off almost in accordance 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.

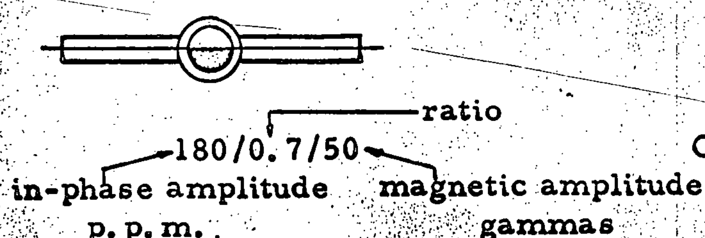
For each conductor peak the ratio of peak in-phase to peak out-of-phase amplitude is calculated and plotted on the plan. This ratio is indicative of a conductivity-size factor for the conductor. Large, high conducting bodies such as massive sulphides or graphite and sea-water, etc., generally have ratios 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.

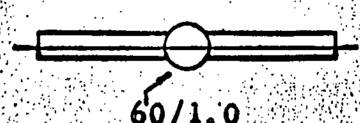
Examples of conductor coding are given below.



Category one, no magnetic correlation.



Category two, magnetic correlation.



Category three, no magnetic correlation.

X Probably man-made conductor.

MAGNETOMETER - SCINTREX NPM-1

The Scintrex NPM-1 nuclear resonance airborne magnetometer is based on a Newmont modification of a Varian Associates magnetometer and is produced under license to both companies. It is a very light weight, solid state unit, especially designed for use in a helicopter or light fixed-wing aircraft where weight is an important consideration.

Its cycle period is 1.1 seconds. Each cycle it measures the total intensity of the earth's magnetic field and this quantity, in gammas, is recorded, in analogue form, on a suitable graphic recorder. The full scale sensitivity is usually 1000 gammas and the recorder automatically steps each 500 gammas. In very active areas a full scale sensitivity of 5000 gammas with steps of 2,500 gammas may be employed. Only the magnetic variations are actually recorded although the absolute base level may be established from the NPM-1 as well.

The magnetic sensing head may be on a cable as much as 100 ft. below the aircraft or, in some installations, may be rigidly attached to the aircraft on a suitable boom.

The intrinsic noise level of each reading is about 5 gammas.

Where it is intended to contour the NPM-1 information it is customary to fly tie lines across the survey grid. A fixed magnetic field monitor is often used as well, on the ground, primarily to indicate periods of magnetic storms during which the aeromagnetic data should be considered as unreliable.

The aeromagnetic data may be contoured if desired, using a contour interval of 25 gammas or up, depending on the amount of magnetic relief. Alternatively they may be used simply for purposes of correlation with simultaneously obtained electromagnetic data to determine which conductor zones are appreciably magnetic.

ANCILLARY EQUIPMENT

1. Altimeter

A Bonzer, high frequency solid state radioaltimeter is employed to continuously indicate the mean terrain clearance of the helicopter or other transporting aircraft. The altimeter is installed in the aircraft (unless otherwise indicated) so that the elevation of the sensing birds (electromagnetic or magnetic) will be less by the usual vertical displacement of these birds below the aircraft.

The output of the Bonzer may be expressed in analogue form on a suitable graphic recorder, or may be, for convenience, converted to a semi-digital form on a recorder side pen. In the latter event the altimeter record is a series of spaced pulses whose separation is proportional to the mean terrain clearance.

2. Positioning Camera

A Vinten Mark 3 16 mm positioning camera is employed with a wide angle lens. Photographs of the ground are taken with sufficient frequency to give a complete record of the flight path of the aircraft or helicopter. The frequency of exposure is controlled by the intervalometer referred to below.

3. Intervalometer

A Scintrex IA-2 intervalometer provides regularly spaced timing pulses which drive the positioning camera exposure mechanism and produces synchronous "fiducial marks" on the side pen of the geophysical graphic recorder or recorders. Because of the synchronization of the geophysical traces and the positioning camera it is then possible to relate the geophysical events of interest to their proper ground location. The timing pulse frequency may be adjusted in accordance with the ground speed of the aircraft so that an adequate flight path record is obtained.

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of a geophysical survey on behalf of Falconbridge Nickel Mines Ltd.

I, E.M. Flett for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that helicopter-borne electromagnetic and magnetometer surveys have been executed on claims about 50 miles east of Dease Lake, B.C. 58°25' North Latitude - 129°00' West Longitude between July 7 - 14, 1969. The following expenses were incurred:

(1)	Wages:			
	J. Steele	10 days @ $62.00/day	$620.00	
	J. Mabley	8 days @ $35.00/day	280.00	
	T. Szanto	8 days @ $35.00/day	280.00	
	R. Gibbons	8 days @ $27.50/day	220.00	$1,400.00
(2)	Transportation & Shipping to the job			1,608.50
(3)	Transportation on the job(helicopter 24 hours @ $175.hr)			4,200.00
(4)	Food & Living & Miscellaneous expenses			526.89
(5)	Use of Geophysical Equipment	7 days @ $300.00/day		2,100.00
(6)	Compilation & reporting	423 line miles flown @ $15/mile		6,345.00
				$16,180.39

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 14th day of November, 1969, A.D.

E M Flett

L Jeannotte

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

Sub-mining Recorder

In the Matter of

____

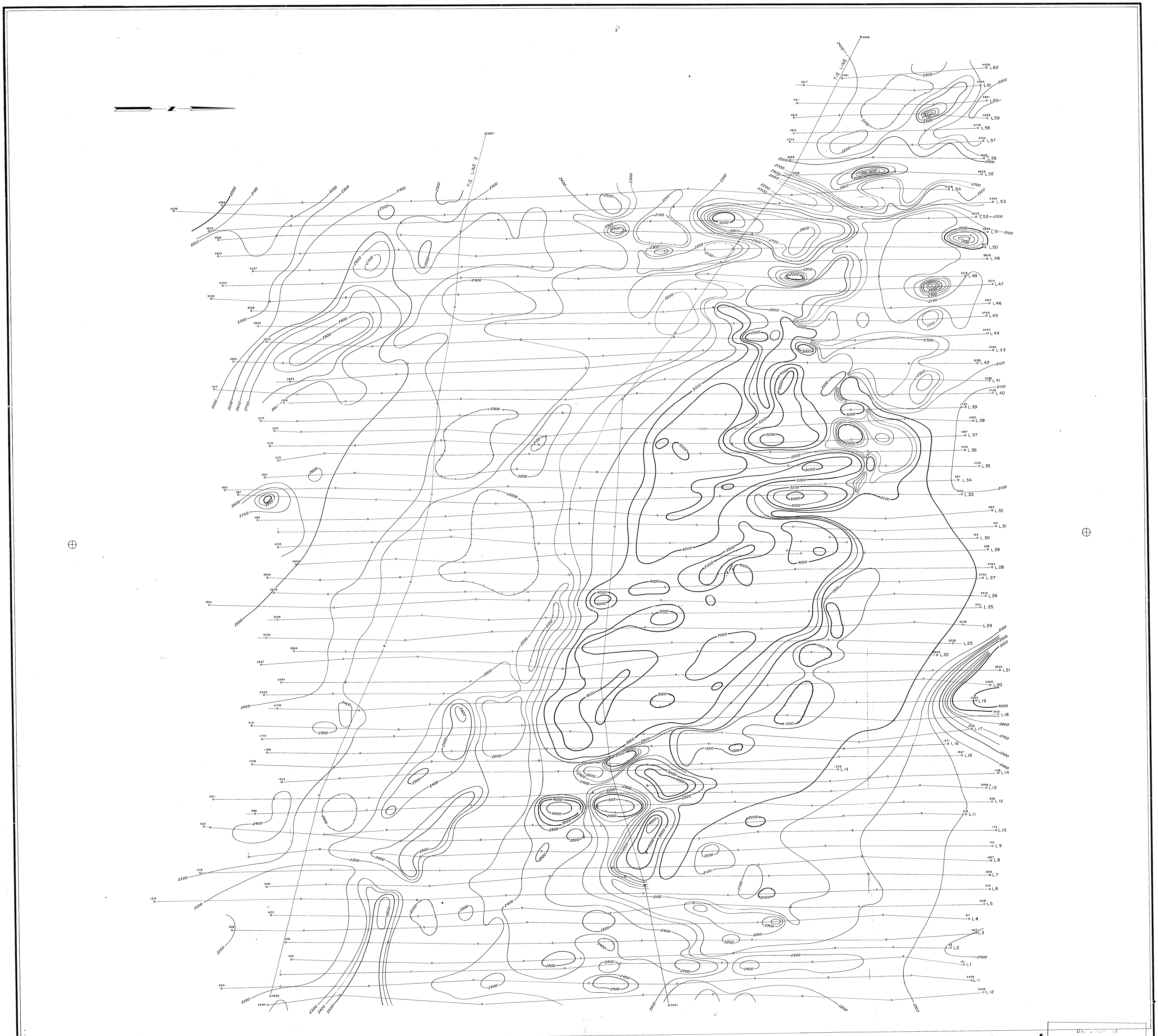
____

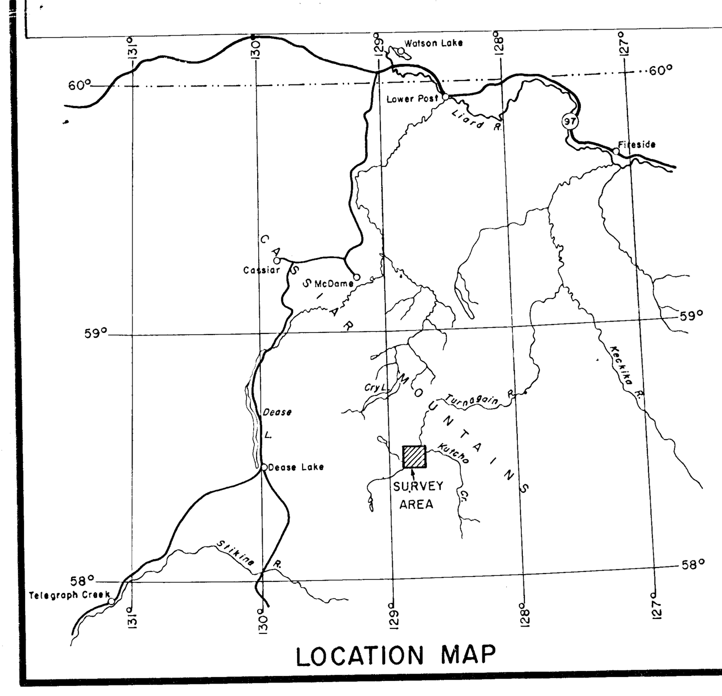
____

____

Statutory Declaration

(CANADA EVIDENCE ACT)





LOCATION MAP

LEGEND

L9 —o427— FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED FIDUCIAL POINT

1000 GAMMA ISOMAGNETIC CONTOUR INTERVAL

500 GAMMA ISOMAGNETIC CONTOUR INTERVAL

100 GAMMA ISOMAGNETIC CONTOUR INTERVAL

MAGNETIC LOW

BASE VALUE ARBITRARY

2056

PLATE I

FALCONBRIDGE NICKEL MINES LTD.

DEASE LAKE AREA, B.C.

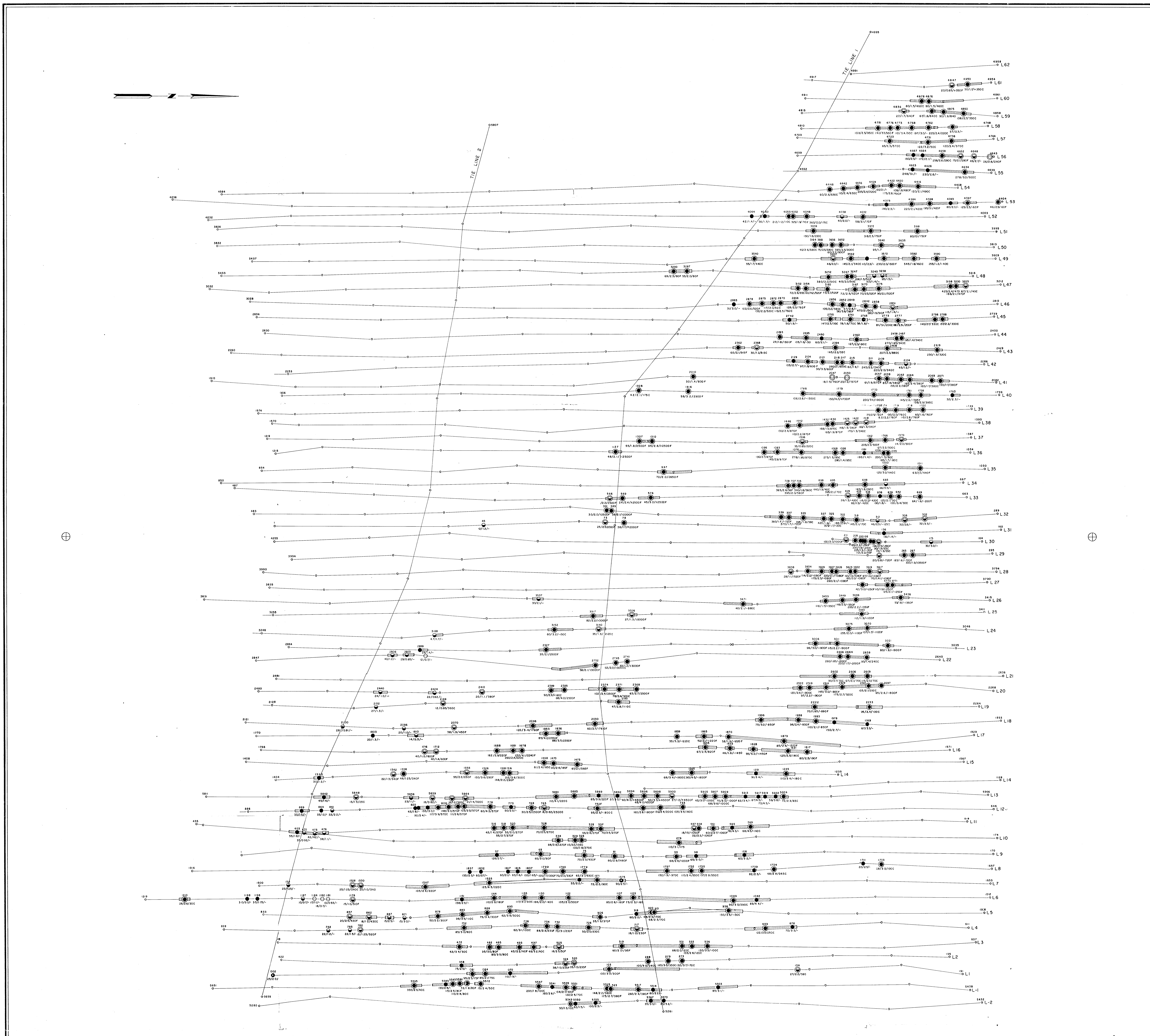
AIRBORNE GEOPHYSICAL SURVEY

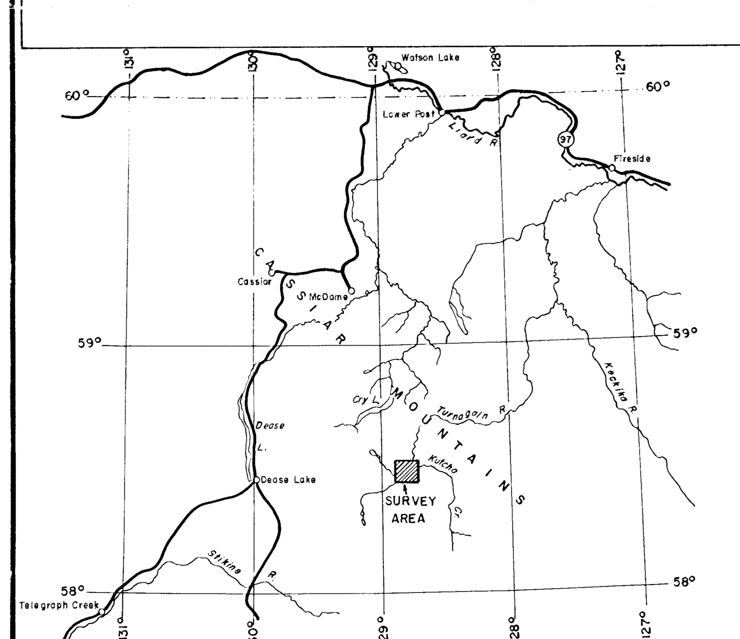
MAGNETOMETER CONTOUR PLAN

NPM - I

SCALE : 1" = 1320'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED AUGUST, 1969
AIRCRAFT TERRAIN CLEARANCE 500'
FLIGHT LINE SPACING 600'



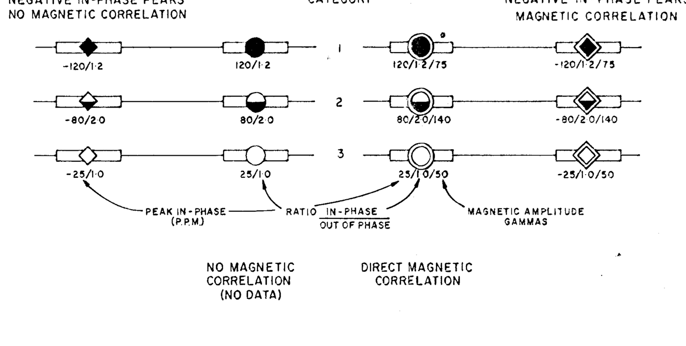


LOCATION MAP

LEGEND

L7 — 1077 — FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED FIDUCIAL POINT

A.E.M. CONDUCTOR REPRESENTATION



2056

PLATE 2

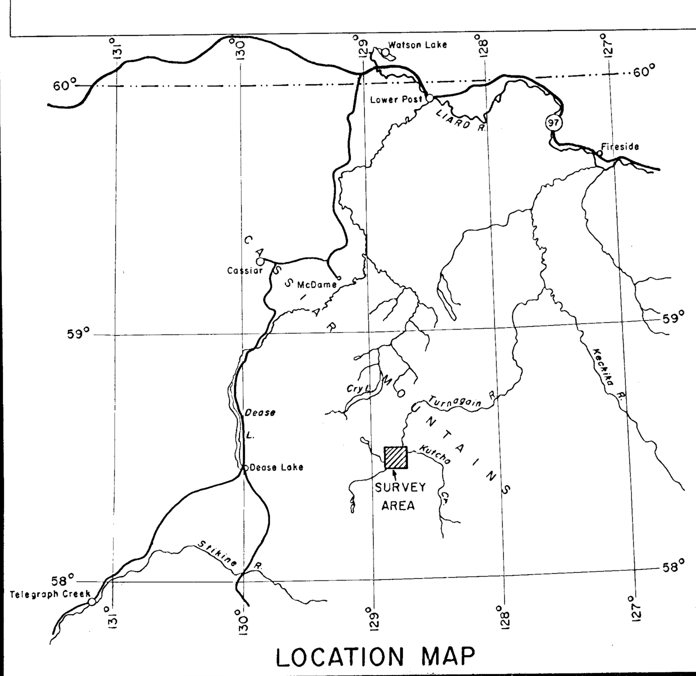
FALCONBRIDGE NICKEL MINES LTD.

DEASE LAKE AREA, B.C.

AIRBORNE GEOPHYSICAL SURVEY

E. M. CONDUCTORS
HEM-701
SCALE: 1" = 1320'

SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN AND COMPILED AUGUST, 1969
AIRCRAFT TERRAIN CLEARANCE 500'
FLIGHT LINE SPACING 600'



LOCATION MAP

2056

PLATE 3

FALCONBRIDGE NICKEL MINES LTD.

DEASE LAKE AREA, B.C.

AIRBORNE GEOPHYSICAL SURVEY

CLAIMS PLAN

SCALE: 1" = 1320'

INTERPRETATION BY SEIGEL ASSOCIATES LIMITED

SURVEY BY SEIGEL ASSOCIATES LIMITED

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. 2056 MAP #3

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA R. O. CROSBY