87-77-15567

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GEOLOGICAL AND GEOPHYSICAL ASSESSMENT REPORT

OF THE

IVA-FERN PROPERTY,

Crown Grants		Reverted Crown Grants			Located Claims	
Black Cap	L12654	Gem	L12652	R1915(8)	Fern	R4175(6)
Fern	L12656	Jewel	L12653	R1916(8)	Fern 2	R4176(6)
Excelsior	L12657	Iva	L12655	R1917(8)	Fern 3	R4201(6)
Standard	L12658					

Nelson Mining Division

N.T.S. 82 F/7W

49° 18.5' N., 116° 55.2' W.

for

Operator: Agincourt Explorations Inc.

515-470 Granville Street

Vancouver, B.C.

V6C 1V5

Owner(s): E. Denny, J. Denny

by

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Consulting Geologist

and

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Consulting Mining Engineer

December 30, 1986

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GEOLOGICAL AND GEOPHYSICAL ASSESSMENT REPORT OF THE IVA-FERN PROPERTY

1.0 INTRODUCTION

1.1 Terms of Reference

The writers were retained by Agincourt Explorations Inc. of Vancouver, British Columbia to conduct a program comprising: transit survey, line cutting soil survey, geological sampling and mapping, electromagnetic and magnetic surveys on the Iva-Fern Property, located in the Nelson Mining Division of B.C. Work on the property was conducted from September 22 to October 18, 1986. Data compilation and processing continued until December 15, 1986.

1.2 Location and Access

The Iva-Fern group of claims is located on the eastern edge of the Selkirk Mountains in the Nelson Range about 40 km (24 mi) southeast of Nelson, B.C. and 12 km (7 mi) west of the east arm of Kootenay Lake. The claims are centred on 49° 18.5' north latitude and 116° 55.5' west longitude on N.T.S. map sheet 82 F/7 (Figures 1 and 2).

The main workings-area is located near the centre of the claims at an elevation of about 1828 m (6000 ft) above sea level on a wooded ridge between Cultus and Laib creeks (Figure 2). The workings are covered by seven crown-granted mineral claims, three of which have reverted. The crown grants are surrounded by the Fern, Fern 2 and Fern 3 mineral claims comprising 45 claim units, covering 1125 ha (2700 A).

The Iva-Fern Property is about 760 km (464 mi) from Vancouver, B.C. Travel time from Vancouver to the property is about 10 hours via B.C. Hwy.3 eastward to Nelson thence Hwy. 6 southward to Ymir.

Access to the property is by the Porcupine Creek road which connects the property-area with Hwy. 6 at Ymir. The property is about 30 km (19 mi) from the highway. The Porcupine Creek road is controlled by Darkwoods Forestry Ltd. who require trucks to be radio-equipped on that road. The main workings-area on the Iva-Fern Property can be reached from the logging road by a good 1300 m (4264 ft) long foot trail.

The nearest railroad siding to the property is at Tye on Kootenay Lake (Figure 2), 12 km (7 mi) from the property down the Cultus Creek road, which is also maintained by Darkwoods Forestry Ltd. At Tye, Canadian Pacific maintains two 30-car sidings and a spur with a large loading site formerly used as a saw mill site.

The loading terminal at Tye would be useful for shipping ore from the Iva-Fern Property.

1.3 Terrain and Vegetation

The Iva-Fern Property is located in the Nelson Range of the Selkirk Mountains, one of the four subdivisions of the Columbia Mountains of south-eastern British Columbia (Holland, 1976). Holland's description of the terrain around the Iva-Fern Property is as follows:

> South of Nelson the several ranges comprising the southern Selkirk Mountains do " not show the rugged alpine topography of the Slocan, Lardeau, and more northerly ranges of the system. The mountains of the southern Selkirks [*see* Plate XXIXB] are more subdued and rounded than those of the north with fewer rugged peaks and serrated ridges and without the youthful glacial forms due to higher uplift and more recent sculpture by mountain glaciers. In this portion of the Selkirks there are practically no glaciers and the ranges form a transition belt of mountains connecting the high and rugged Canadian Selkirks with the low, subdued mountain ranges of the same system which border the Columbia lava plain in Washington state. . . . Glacial forms, including cirques, arêtes, trough-shaped valleys, truncated spurs, hanging valleys, roches moutonnées, and valley terraces, are prominent topographic features in the landscape."†

The Iva-Fern Property straddles a wooded ridge that separates Laib and Cultus creeks (Figure 3). These creeks flow eastward into Kootenay Lake at Tye, about 12 km (7 mi) from the property.

The northern boundary of the property is at Laib Creek at an elevation of about 1131 m (4300 ft) a.s.l. (Figure 3). The part of the slope on the Fern 3 Claim between Laib Creek and the ridge crest is covered by mature spruce forest. This slope is being logged by Darkwoods Forestry Ltd. Most of the Fern 3 Claim is now logged off.

The elevation of the ridge crest between Laib and Cultus creeks is about 1920 m (6300 ft) a.s.l. The forest at the ridge crest comprises widly spaced spruce and pine creating an open park. Just south of the ridge crest at an elevation of about 1828 m (6000 ft) a.s.l. on the Fern Claim is the main workings-area.

A bend in the ridge axis is responsible for the convex shape of the slope on the Fern Claim from the main workings-area down to Cultus Creek. The upper part of this slope is covered with widly spaced spruce and pine. Its lower part is covered with dense stands of larch that have been thinned to encourage more efficient growth.

The valley bottom at Cultus Creek in the claim-area is at an elevation of about 1120 m (4000 ft). Hemlock, cedar and spruce are the dominant tree species near the creek.

The Fern 2 Claim extends for 2500 m (8200 ft) upslope, southward from Cultus Creek. The south end of the Fern 2 Claim is logged off. During 1985, the hemlock-cedar-spruce forest on the lower half of the slope was burned by a forest fire.

Outcrop is scarce on the Iva-Fern Property. The claim-area is covered by well-developed soils that range in thickness from about 1 m at the ridge crest to several metres near Laib and Cultus creeks. Well-rounded cobbles of many lithologies are present is these soils indicating that they evolved from a thin mantle of glacial till. Fluvial outwash occurs only near the beds of Laib and Cultus creeks.

Average annual precipitation is moderate, occuring mostly as winter snow. Ridge crests in the property-area are snow-covered from November until April.

1.4 Property

The Iva-Fern Property comprises the following crown-granted mineral claims, reverted crown-granted mineral claims and located claims in the Nelson Mining Division of British Columbia:

A. Crown-granted Mineral Claims

Claim Name	Lot No.
Black Cap	L12654
Fern	L12656
Excelsior	L12657
Standard	L12658

B. Reverted Crown-granted Mineral Claims and Located Claims

Claim Name	Lot No.	Record No.	No. of Units	Record Date
Iva	L12655	1917 (8)	1	Aug. 25, 1980
Jewel	L12653	1916 (8)	1	Aug. 25, 1980
Gem	L12652	1915 (8)	1	Aug. 25, 1980
Fern		4175 (6)	15	June 12, 1985
Fern 2		4176 (6)	15	June 18, 1985
Fern 3		4201 (6)	15	June 26, 1985

The Fern crown grant is owned jointly by Eric Denny of Nelson, B.C. and Jack Denny of Ymir, B.C. The reverted crown grants and the Standard crown grant are owned by Eric Denny, and the located claims are owned by Jack Denny. The Black Cap and Excelsior crown grants are owned by Esther Weaver of Nelson, B.C.

On July 16, 1985, Agincourt Explorations Inc. wrote an option agreement with the Dennys whereby Agincourt could earn 100% interest in their claims except the Standard Claim for a total of $151,000 in payments due between 1985 and 1991. At that time, the Standard crown grant was owned by another party.

On September 20, 1985, Agincourt wrote an option agreement with Esther Weaver whereby the company could earn 100% interest in her claims for a total of $30,000 due from 1985 to 1987.

On April 5, 1986, Agincourt wrote an option agreement with Eric Denny whereby the company could earn 100% interest in the Standard crown grant for $15,000 in payments due from 1986 to 1991. Mr. Denny had acquired the Standard Claim from an estate early in 1986.

The writers have personally inspected some of the posts and lines of the located claims and found them to be staked in accordance with the laws and regulations of the Province of British Columbia.

Part of the 1985 exploration program on the Iva-Fern Property was a transit survey of all legal corner posts and a determination of their exact locations in relation to the previously surveyed crown grants (Solkoski, 1985). Both writers participated in that transit survey.

Also, the writers have personally inspected the option agreements between Agincourt Explorations Inc., Eric and Jack Denny, and Esther Weaver and in their opinion; the company has secured its right to earn 100% interest in their claims.

1.5 Previous Work

The Iva-Fern Property was staked by Jack Mulholland in 1915 and 1916. Subsequent surface stripping revealed mineralization of significant extent. During 1917, a development bond was taken on the property by the Consolidated Mining and Smelting Company (Cominco). The company continued surface work and began a crosscut tunnel in the main workings-area.

Early work on the property is summarized in the 1917 B.C. Minister of Mines, Annual Report as follows:

> **Iva Fern Group.** This group, consisting of seven claims, is situated on the north side of Cultus creek, at a distance of about seven miles from Kootenay lake. The property is owned by J. Mullholland, of Sirdar, B.C. In the vicinity of the workings the hillside has a fairly uniform slope which is covered with overburden, and on which there is ample timber for all requirements. The workings are situated near the top of the hill at an elevation of 5,735 feet, or 1,870 feet above Cultus creek, where there is abundant water-power available.
>
> The formation is of sedimentary origin, composed of shales and schists, and is cut by intrusive dykes which are said to run parallel to the formation, but the short time that the writer had on the property did not allow a surface reconnaissance to be made in order to trace the geology or to identify the various surface showings of ore with the vein system.
>
> The work done consisted of a number of open-cuts, which in every case showed a width of ore from 1 to 6 feet, but on account of the heavy covering of overburden it was difficult to definitely determine the nature of the walls and the dip and strike of the strata, which latter, as far as could be ascertained, was approximately north and south. However, with only the cursory examination that was made, it was quite evident that the surface showings and general conditions were encouraging and fully warranted the further exploitation of the property.
>
> At the lowest exposure the ore consisted of a mixture of galena, a little chalcopyrite, and iron pyrites occurring in oxidized ledge-matter; at the upper workings the ore was principally galena. A sample taken at the lowest showing, across a width of 6 feet, gave the following returns: Gold, trace; silver, 3.50 oz.; lead, 5 per cent. Farther up the hill a sample across a width of 2.5 feet gave: Gold, 0.02 oz.; silver, 3.40 oz.; lead, 22 per cent.; while at a short distance from this, on the summit of the hill, a sample across a width of 2 feet gave: Gold, trace; silver, 1.80 oz.; lead, 10 per cent.
>
> During the summer development-work was carried on, and according to recent reports the property has now been bonded by the Consolidated Mining and Smelting Company.
>
> In connection with the occurrence of sedimentary rocks in this section, it may be of interest to note that this belt of schists and slates, bounded by the granite formation on the east and west, extends southward across Cultus creek and apparently forms the saddle of the Low Pass divide; and, further, it has been reported that the same character of ore has been found in the vicinity of the Low pass on a group of claims owned by C. O. Woodward, R. J. Elliot, and others, of Nelson.

During 1919, seven of the fifteen claims that then comprised the property were surveyed and crown-granted (Figures 3 and 5). Cominco dropped its bond on the property late that year. Work was continued on the crosscut tunnel by the Standard Silver Lead Mining Company of Silverton, B.C. during 1922 and 1923. Their bond lapsed and a minority interest in the property was acquired by A.B.C. Dando in 1925.

A summary of work done on the claims appears in the 1925 B.C. Minister of Mines, Annual Report as follows:

> **Iva Fern.*** As numerous references have been made to this property in previous Annual Reports, it is only intended to give a short summary here of the work done since the property was last described in the Annual Report for 1919. The *Iva Fern*, owned by Jack Mulholland, who staked it originally, and A. B. C. Dando, who has recently acquired an interest, is situated on Cultus creek, about 7 miles from Kootenay lake. The ore contains values in silver, lead, zinc, and copper. The property was bonded by the Consolidated Mining and Smelting Company in November, 1917, and developed by them in 1918 and 1919. Work done by this company included a considerable amount of surface-trenching and the driving of some 250 feet of tunnel to crosscut at depth the veins, of which there are three. Work was discontinued before the objective was reached, however, and the property was shut down during the following two years. In 1922 the Standard Silver Lead Mining Company continued the crosscut tunnel for a further 250 feet to its intersection with the principal vein, which was then drifted on northerly for 120 feet. A short tunnel was also driven lower down the hill on the *Iva* claim. In 1923 work was discontinued by this company and nothing of importance has been done since.
>
> All the development-work done on the *Iva Fern* property is localized towards the summit of the ridge. The claims cover a large area, and although the mineralized zone has been traced for a long distance little work has been done at lower altitudes and much ground remains to be prospected. The drift on the main vein off the crosscut tunnel was stopped before reaching a point vertically below the strong surface showing exposed in the shaft and the trench just south of it.

During 1926, the property was bonded to A.E. Place of Los Angeles. Nothing was done under that bond and in 1928, Mulholland and associates formed Iva Fern Mines Ltd. to develop the property themselves.

The most complete geological and historical account of work on the Iva-Fern claims appears in the 1928 B.C. Minister of Mines, Annual Report as follows:

> **Iva-Fern.*** This group consists of the following seven Crown-granted claims: *Excelsior*, Lot 12657; *Fern*, Lot 12656; *Standard*, Lot 12658; *Iva*, Lot 12655; *Black Cap*, Lot 12654; *Jewel*, Lot 12653; and *Gem*, Lot 12652. The property is situated on the northern side of Cultus creek, about 7 or 8 miles by trail from Kootenay lake, on which transportation is afforded by steamers of the Canadian Pacific Railway Company. Cultus creek flows into the western side of the lake at a point 9 miles north-westerly from Kootenay Landing. There is a good wide trail on an easy grade from the lake-shore to the foot of the hill, a distance of about 5½ miles, from the end of which a switchback trail leads to the mine. The claims are staked in a northerly direction along the strike of the veins from the valley of Cultus creek to the summit of the rounded ridge separating the North fork from the main creek. The mine buildings include a bunk-house to accommodate about ten men, a combined dining-room and

kitchen to accommodate about twenty men, blacksmith-shop, etc. At the lake-shore there is a convenient cabin to accommodate men and supplies in transit.

There is little information available on the geology of the area, which has not yet been mapped with any accuracy. On the provisional West Kootenay sheet of the Geological Survey the area in which the property is situated is shown as entirely consisting of granite. This is not correct, however, and the formation in which the deposits are found consists of steeply tilted metamorphosed rocks, chiefly of sedimentary origin. Some distance east of this formation, however, there is a belt of granite several miles wide. These sedimentaries, which consist of banded argillites, schists, silicified dolomites, and quartzites, resemble the rocks of the Summit series, shown along the eastern margin of the Geological Survey map of the Ymir camp (Map 175A) and tentatively referred to the Cambrian or Pre-Cambrian period.

On the South fork of Porcupine creek the *Howard*, where new discoveries of importance have been made recently, is probably situated in a roof-pendant of the Summit series and farther south these rocks contain the deposits of the Sheep Creek gold camp. The mineral-belt in which the *Iva-Fern* is situated has been traced at intervals for several miles in a southerly direction, and during recent years a number of claims have been staked southerly from Cultus creek. The mineralization in the southern extension of the *Iva-Fern* mineral-belt consists of copper sulphides containing low values in gold and silver.

On the *Iva-Fern* two different types of mineralization were noted, one consisting of a fairly coarse galena, with which is associated chalcopyrite and zinc-blende, the other consisting of disseminated sulphides of lead and zinc without any copper. The gangue contains lime and silica and in places a considerable development of siderite was noted. In general the mineralization is of a character requiring concentration.

There are two veins exposed in the surface workings examined, which consist of numerous long shallow trenches dug across the strike of the formation and two shafts, 10 and 30 feet down respectively. These veins apparently coincide with the trend of the enclosing argillaceous rocks (slates), the strike of which is about N. 10° E. The dip of the veins is steeply to the west, apparently cutting the dip of the country-rocks, which is about 40° to the west. Basic lamprophyre dykes accompany the veins in places, but their possible connection with the ore-deposits has not yet been determined.

Most of the work has been done on the No. 2 vein, which is the most westerly or farthest up the hill. This vein is traced at short intervals on the surface by long shallow trenches and a shaft for a total length of about 600 feet of outcrop. The No. 2 tunnel, hereinafter described, develops the same vein a considerable distance farther south, so that altogether the No. 2 vein outcrop is traced over 2,000 feet in length. The elevation of the northern end of these workings at the summit is about 6,340 feet. At this point a trench shows iron-stained siliceous ledge-matter impregnated with galena over a width of several feet.

Farther south, at an elevation of 6,300 feet, there is a shaft, caved and inaccessible, at the southerly end of a trench about 36 feet long. On the dump of this shaft there are several tons of partially oxidized ore, heavily impregnated with galena and some chalcopyrite. Going south from the shaft for about 40 feet there is a trench at the easterly end, of which there is exposed a width of 10 feet of ore which is well mineralized with disseminated galena throughout. Some 70 feet farther south a trench 15 feet long exposes some ledge-matter containing disseminated galena. In this trench the full width of the mineralization is not exposed. The next trench to the south is off to one side of the strike of the vein. Continuing in the same direction, two more trenches expose oxidized ledge-matter only. The next two trenches, which are about 120 feet apart, were not accessible for debris, but the dumps show siliceous material well mineralized with galena. Therefore the strongest mineralization seen on the surface was in the trenches at the southern end of the outcrop workings and, farther north, at the shaft and trench just south of it.

The No. 1 vein lies a few hundred feet to the east of the main No. 2 vein, which it parallels at a slightly lower elevation. Surface workings seen on this vein consist of some eight or nine trenches and a shaft. Going south from the crest of the ridge, five trenches, distributed over a total length of around 180 feet, expose oxidized ledge-matter with some disseminated galena in places. Some 30 feet south of the last of these trenches there is a shaft, which was inaccessible for caving, on the dump of which are a few tons of good lead ore. A grab sample of this ore assayed: Silver, 15 oz. to the ton; lead, 65 per cent. Some trenches south of the shaft show oxidized ledge-matter, no galena being noted.

The elevation of the upper tunnel and camp is about 5,950 feet. (All elevations herein are relative only, being based on aneroid readings.) This tunnel, which gains a depth of about 200 feet on the outcrop of the No. 2 vein, is driven westerly as a crosscut for about 500 feet. A drift to the north then extends along the No. 2 vein for about 120 feet. A basic lamprophyre dyke follows the hanging-wall side of the vein, but crosses to the foot-wall side of the vein at its intersection in the crosscut.

In the main crosscut, 22 feet east of the No. 2 vein, a 6-foot vein was cut, a sample across 4 feet of which assayed: Silver, 4.1 oz. to the ton; lead, 12.1 per cent.; zinc, 11.9 per cent. Continuing along the crosscut and a short distance beyond the main vein, there is, according to reliable report, a short drift developing a copper-silver showing which the writer missed seeing.

A cursory inspection of the 120-foot drift showed milling-ore in places through the first 100 feet of the tunnel, with continuous mineralization throughout the last 20 feet. A sample across 4 feet, 20 feet back from the face, assayed: Silver, 2.9 oz. to the ton; lead, 11.5 per cent.; zinc, 8.2 per cent.; and a sample across 4 feet in the face of the drift assayed: Silver, 2.5 oz. to the ton; lead, 5.9 per cent.; zinc, 15 per cent. A short distance back from the face a narrow stringer of massive galena and chalcopyrite is visible in the west wall of the drift.

According to the plans seen by the writer, the face of the drift is about 80 feet short of reaching a point vertically below the shaft and about 40 feet short of a point vertically below the trench just south of it, in which surface workings strong showings are developed. The drift, therefore, would only have to be extended a short distance to prove the downward continuation of the ore-body indicated on the surface. The No. 1 vein is cut in the main crosscut where it shows well-defined lines of fracturing but no appreciable mineralization.

The No. 2 tunnel, developing the No. 2 vein at an elevation of about 5,650 feet, has only been driven a short distance. Just inside the portal mineralization was encountered consisting of a width of 6 feet of disseminated galena, zinc-blende, and chalcopyrite, in a gangue of siderite and altered silicified country-rock. The dip of the vein in this working is apparently about 60° to the west. The hanging-wall of the vein is well defined, but the foot-wall is somewhat indefinite.

A short length of this ore is exposed near the portal of the tunnel, which continues for a short distance in a semicircular direction towards the west, but does not show any further appreciable mineralization. The ore at the portal has the appearance of being the apex of an ore-shoot to explore which it will be necessary to gain further depth. On the dump of this tunnel there are a few tons of ore which is heavily impregnated with galena and chalcopyrite. The above workings comprise the area examined by the writer, but there are, it is understood, other showings, and also areas where considerable amounts of float-ore have been found.

Some preliminary work was done on the *Iva-Fern* by the Consolidated Mining and Smelting Company in 1918 and 1919. Work done by this company included most of the surface-trenching and the driving of the first 237 feet, approximately, of the crosscut tunnel. In 1922 the Standard Silver Lead Mining Company bonded the property and continued the crosscut to the intersection with the main vein, which was drifted on 120 feet to the north. In 1923 work was discontinued by this company and no work has been done since.

The position is that, for various reasons not detrimental to the property, work done on the *Iva-Fern* has not been brought to full conclusions. By extending the drift a few hundred feet the downward continuation of the shaft ore-body will be tested and information gained which will be of value in developing the numerous other showings on the property.

The mineral-belt in which the *Iva-Fern* is situated presents very interesting exploratory possibilities, chiefly on account of the numerous indications of copper-deposits. The veins can be developed to very considerable depth by tunnelling, while conditions for timber-supply, water-power development, and aerial-tram location are favourable. All the development-work done on this property is localized towards the summit and much ground remains to be prospected. The interesting possibilities of exploration along the vein extensions at lower altitudes is indicated by the recent discoveries of gold-silver-copper ore in the continuation of the same belt south of Cultus creek.

Since the above report was written the Iva Fern Mines, Limited, was formed, but up to the end of the year no work resulted owing, it is reported, to disagreement among the principals. News has just come to hand to the effect that the property has been taken under a development bond by the Consolidated Mining and Smelting Company.

Unfortunately, Mulholland and his associates could agree on very little and they did no significant work on the property. Cominco regained the property under development bond in 1929 and proceeded with underground development until early in 1930 .

Summaries of Cominco's work at the time are in the 1929 and 1930 B.C. Minister of Mines, Annual Reports as follow:

> **Iva Fern.** This group, owned by the Iva Fern Mines, Limited, is situated on the northern side of Cultus creek, about 7 or 8 miles by road and trail from Kootenay lake. The property was taken under a development bond by the Consolidated Mining and Smelting Company early in 1929, since when exploratory work has been carried on continuously. The *Iva Fern* deposits are described in detail in the Annual Report for 1928. Since the new operations were initiated a large amount of trenching and 834 feet of underground work have been done. The surface work indicated an ore-body to the south of the main tunnel, but subsequent drifting and crosscutting in this direction failed to prove the continuity of the ore to that depth. The northerly drift was also advanced without any appreciable results. Sinking has recently been started on the north side of the main crosscut. As the vein apparently dips steeper than the argillite country-rock, with which it coincides in strike, it is possible that at further depth conditions will be found more favourable for deposition in the underlying strata, which include a band of dolomitic limestone.

> **Iva Fern.** This group, owned by the Iva Fern Mines, Limited, is situated on the northern side of Cultus creek, about 7 miles by road and trail from the western shore of Kootenay lake. Exploration, started by the Consolidated Mining and Smelting Company of Canada in 1929, was continued until May, 1930, when work was suspended. Since this company's operations were initiated a large amount of trenching and 1,416 feet of underground work have been done. Of this, 457 feet of tunnel was driven and a winze 125 feet deep was sunk during 1930. The Consolidated Mining and Smelting Company of Canada has acquired control of the holdings by purchase of most of the issued stock of the Iva Fern Mines, Limited. Descriptions of the deposits are contained in past Annual Reports.

In 1985, Agincourt Explorations Inc. of Vancouver, B.C. secured options on the Iva-Fern Property.

That year, the company conducted a program of geological, geochemical and transit survey, a report of which was filed and accepted for assessment credit (Solkoski, 1985).

Five zones of sulphide mineralization were identified, mapped and sampled in old surface workings, most of which were not recorded in published literature of the property. Mineralized zones were found to be surrounded by soil geochemical anomalies of copper, lead, zinc and silver. Extreme distortions in the distribution of gold in soils due to "the nugget effect" were deleterious to the usefulness of gold in soil analyses on the property.

Positive results from Agincourt's program on the property during 1985 encouraged the company to conduct the program reported herein.

1.6 Summary of Present Work

Field work was conducted from September 22, until October 18, 1986. Data compilation and processing continued until December 15, 1986. The work was undertaken by:

Lawrence R. Solkoski, B.Sc. Vancouver, B.C.	Consulting Geologist
C. Geoffery Spearing, B.Sc.(Eng.) West Vancouver, B.C.	Consulting Mining Engineer
Mervin L. Carson Vancouver, B.C.	Geological Technician
Glenn R. Caulfield Vancouver, B.C.	Geological Technician
Andrew Biber Vancouver, B.C.	Geological Technician
David P. Nunuk Victoria, B.C.	Geological Technician

A. Transit Survey:

-2883.14 m of 1 m wide line, cut with axes and chain saws

-2883.14 m of 1 m wide line, surveyed with a Pacific 3C transit and tape (Figure 5) on the Fern R4175(6), Fern 3 R4201(6) and Iva L12655 R1917(8) claims

B. Soil Survey:

-4480 m of line laid out using compass and hip chain comprising 8 lines 100 m apart with soil samples taken at 50 m intervals along each line north of the main workings-area (Figures 6A-D)

-127 soil samples analized for copper, lead, zinc and silver (Appendices A and B)

C. Geological Sampling and Mapping:

Parts of the Fern claim R 4175(6), Fern 2 claim R4176(6) and Fern 3 claim R4201(6) each comprising 375 ha were mapped at a scale of 1:5,000 (Figures 7A,B). The area just north of the main workings-area on the Excelsior crown grant within Fern R4175(6) was mapped at a scale of 1:500. Mapping included a detailed survey of newly found workings (Figure 8). Several of the workings on the Excelsior crown grant were cleaned off and sampled.

D. Geophysical Surveys:

Two geophysical surveys were undertaken on the Fern claim R4175(6). A proton magnetometer survey using a Scintrex MP2 magnetometer and an electromagnetic survey using a Geonics EM16 instrument were conducted along lines laid out with compass and hip chain. East-west grid lines extended from a base line established by transit survey at 609.66 m W. Lines were spaced at 50 m intervals along the base line. Readings were taken at 20 m intervals along each grid line. A total of 27,148.84 m of line were surveyed. Total magnetic field data are plotted on Figures 9A-D. EM16 raw data are plotted on Figures 10A-D and fraser-filtered EM16 data are plotted on Figures 11A-D.

1.7 Claims Worked On

Work was conducted on the following claims:

Claim Name	Lot No.	Record No.	No. Units	Expiry Date
Iva	L12655	R1917(8)	1	Aug. 25, 1992
Fern		R4175(6)	15	June 12, 1992
Fern 2		R4176(6)	15	June 18, 1992
Fern 3		R4201(6)	15	June 26, 1992

1.8 Time Division of Work

The autumn, 1986 work program on the Iva-Fern Property comprised several different surveys conducted from the same camp. The following is an analysis of how time was spent during the program.

Work Function	Time in man days
A. Field Work	
soil survey	12
geological mapping and sampling	24
MP2 magnetometer survey	16
EM16 electromagnetic survey	16
transit survey and the establishment of grids for the geochemical and geophysical surveys	44 - transit 20 - compass grids
camp mobilization and demobilization	24
camp supply and expediting	6
B. Office Work	
interpretation of geochemical data	5
interpretation of magnetic data including calculations	10
interpretation of electromagnetic data including general and Fraser-filter calculations	14
Report writing and data assembly	20
Total	211 man days

2.0 TRANSIT SURVEY

2.1 1919 Survey

The Iva-Fern claims were surveyed by A.H. Greene, B.C.L.S. in January, 1919. The survey was done to fulfill requirements for an application to crown-grant the claims (Figure 3). Astronomic bearings were taken from solar observations. Distances were measured in feet and tenths of feet with a chain between hubs centred with copper tacks. Locations of the claims were established using Cultus Creek and the west shore of Kootenay Lake as reference points. Claim posts and line posts were made of local wood.

Since 1919, forest fires have destroyed most original posts on the crown grants. A charred and rotten post marking the common corner of the Excelsior, Standard and Fern crown grants was replaced recently by Jack Denny. The writers inspected the remains of the original post and verified its location with regard to portals of the underground workings (Solkoski, 1985). In their opinion, the replacement post is in its correct position.

2.2 1985 Survey

The 1985 transit survey was undertaken by Stephen M. Caulfield assisted by C.G. Spearing and D.R. Jones (Solkoski, 1985).

The eastern boundary of Fern 4175(6) was surveyed northward from the Fern-Fern 2 legal corner post(Figures 3 and 5). This line served as a base line for the 1985 soil survey (Figures 6A-D). A short survey westward from the eastern boundary of the Fern claim tied in the Fern 3 legal corner post (Figure 5). From these surveys, it was concluded that there were no unstaked fractions within the boundaries of the Iva-Fern Property.

The location of the Fern-Fern 3 located claims relative to the crown grants and reverted crown grants was deduced by a survey connecting the common post of the Fern, Excelsior and Standard crown grants with the boundary survey from the Fern-Fern 2 legal corner post (Figure 5)(Solkoski, 1985). A line was cut and surveyed southward from the Fern-Excelsior-Standard common post to a point on the old Iva-Fern horse trail near the portal of the lower adit. From there, a line was cut and surveyed eastward to the eastern boundary survey.

Underground working portals were tied into the survey by two short traverses.

2.3 1986 Survey

The 1986 transit survey was conducted by C. Geoffery Spearing, B.Sc. (Eng.) assisted by A. Biber and D.P. Nunuk. A Pacific 3C transit, rod and 50 m tape was used to survey lines that were cut out 1 m wide. Survey stations were marked with tacks in wooden pegs.

The eastern boundary of the Fern 3 R4201(6) claim was surveyed northward from the Fern 3 legal corner post to 3312.76 m N (Figure 5). This line served as a base line for the 1986 soil survey on the Fern and Fern 3 claims (Figures 6A-D).

Line 609.66 m W which was cut and surveyed in 1985 (Solkoski, 1985) between the main workings-area at 1640.05 m N and the lower adit-area at 992.40 m N was extended both northward and southward (Figure 5). This line was extended southward from 992.40 m N to 792.29 m N, and northward from 1640.05 m N to 2559.70 m N. The 1986 discoveries of old surface workings on the Excelsior crown grant north of the main workings-area were tied into the survey by short compass traverses from line 609.66 m W (Figure 8). Short lines were cut and surveyed eastward from line 609.66 m W to tie in the Fern 3 legal corner post to the 1986 transit survey.

The 1986 transit survey was important in providing accurate ground control to lay out the grids for the 1986 geochemical and geophysical surveys.

3.0 GEOLOGY, GEOCHEMISTRY AND MINERALIZATION

3.1 Regional Geology

The part of southeastern British Columbia west of Kootenay Lake is underlain by rocks that range in age from Helikian to Mesozoic. These rocks resulted from the infilling of the Cordilleran Geosyncline with sediments and intercalated volcanics. They have been invaded by Proterozoic, Mesozoic and early Eocene-age igneous intrusions (Douglas ed., 1970). Deposition of Helikian-age clastic rocks in the Cordilleran Geosyncline ceased during the East Kootenay Orogeny about 750 million years ago. During that orogeny, regional metamorphism resulted in the pervasive growth of greenschist minerals in the Helikian rocks.

Hadrynian-age sediments were clastics from the Purcell Geanticline, a broad warp that formed east of the geosyncline near the end of the East Kootenay Orogeny. They are represented in the Selkirk Mountains west of Kootenay Lake by the Windermere Supergroup (Figures 4 and 4A).

Windermere sedimentation in the Selkirks records a progression from rapid marginal infilling of a possibly subsiding basin, to distal pelagic sedimentation. This is succeeded by clastic infilling of the basin.

The oldest rocks in the Selkirks near the Iva-Fern Property are polymict conglomerates of the Toby Formation. These are succeeded by andesitic flows and tuffs of the Irene Volcanic Formation. More distal sedimentation is recorded in the Monk Formation quartzites, limestones and graptolitic phyllites which conformably overly the Irene volcanics. Hadrynian basin infilling progressed with deposition of the clastics of the Monk Formation and continued into the Cambrian Period with the deposition of the Hamill Group.

This stratigraphy was subsequently deformed, regionally metamorphosed to greenschist facies and intruded by Middle to Late Mesozoic and Cenozoic igneous bodies.

3.2 1985 Soil Survey

The 1985 soil survey was conducted on the Fern R4175(6) claim (Solkoski, 1985). Soil lines were run east-west, generally at 100 m intervals, from the surveyed eastern boundary of the claim.

At most sample stations, soils were sufficiently developed to collect a sample from an illuviated 'B' horizon. Sampling depths varied from 0.2 m to 0.5 m.

Most soils on the Iva-Fern Property are podzols, typical of those found on the flanks of the mountains of southeastern British Columbia. A typical podzolic soil from the property includes an 'A' horizon, composed of dark brown loam, a 'B' horizon, composed of red-brown silty loam commonly containing pebbles and a 'C' horizon of light yellowish brown pebbly or sandy regolith. The many faceted cobbles and pebbles of exotic rock lithologies present in the 'C' horizon indicate that this soil has evolved from glacial till in part.

The population of soil sample data from the Fern R4175(6) claim formed a geometric distribution skewed toward background concentrations. Anomalously high concentrations of copper, lead, zinc and silver were present from a few well-defined areas on the claim (Figures 6A-D).

Soil distribution contours were developed using the methods of Lepeltier (1969) through which graphic representations of cumulative frequency curves resulted in the exclusion of data below the 84th and 97.5th centiles.

Accepting the assumption that the logs of the soil data form a normal distribution, these contours represent the upper first and second standard deviations of the distribution of the logs of the data.

Geochemical contour intervals were derived from the graphic analysis (Solkoski, 1985) as follows:

	Concentrations in ppm			
	copper	lead	zinc	silver
84th centile (subanomalous)	115	56	210	0.62
97.5th centile (anomalous)	213	196	339	1.04

Variation in the distribution of gold concentrations in soils was insignificant and not worthy of statistical analysis.

The distribution of anomalous soil data indicated that soil metal concentrations was closely related to metal concentrations in underlying rocks on the Fren 4175(6) claim (Figures 6A-D).

The distribution of copper in soils (Figure 6A)(Solkoski, 1985) seemed to reflect the underlying stratigraphy with higher concentrations overlying the upper strata of the Irene Volcanic Formation. The distribution of gold in soils seemed to be basically similar to that of copper.

Lead, zinc and silver distributions in soils (Figures 6B-D) (Solkoski, 1985) seemed to reflect the concentrations of these metals in underlying rocks. The highest concentrations of these metals are over known areas of massive sulphide mineralization and their extensions (Figures 6B-D).

3.3 1986 Soil Survey

The 1986 soil survey was conducted on the Fern 3 R4201(6) claim to test the northward extensions of zones of subanomalous metal content at the northern boundary of the Fern R4175(6) claim as revealed by the 1985 soil survey (Solkoski, 1985).

Soil lines were laid out by compass and hip chain at 100 m intervals from 2600 m N to 3300 m N. The lines extended westward from line 478.81 m W; a transit-surveyed base line, to 1200 m W. Soil samples were taken at 50 m intervals along the lines (Figures 6A-D).

At most stations, soils were sufficiently developed to collect a sample from the illuviated 'B' horizon. Sampling depths varried from 0.2 m to 0.5 m. Soils in the grid-area were podzols like those tested in the adjacent 1985 survey.

Soil samples were shipped in undyed kraft paper envelopes to Chemex Labs Limited of North Vancouver, B.C. for analysis. All 127 samples were analized for copper, lead, zinc and silver.

The methods of analysis at the lab is summarized in Appendix A. Geochemical analyses comprise Appendix B.

The 1985 soil survey revealed high concentrations of copper, lead, zinc and silver occuring in a few well-defined areas on the Fern R4175(6) claim. Most soil anomalies were located around areas of known massive sulphide showings. The 1986 soil survey extended northward from the 1985 survey-area onto the Fern 3 R4201(6) claim to test the extensions of zones of subanomalous concentrations of copper, lead, zinc and silver in soils (Figures 6A-D).

Soil samples from the 1985 and 1986 surveys are from the same statistical population, the distribution of which is skewed heavily toward background metal concentrations. Most of the 1986 data are near the mean (background) for the population. Thus threshold values for anomalous and subanomalous soil metal concentrations in the 1985 survey are not significantly different from the 1985 and 1986 surveys together. The threshold values calculated for the 1985 survey using the methods of Lepeltier (1969) (Solkoski, 1985) are retained in the 1986 survey. Consequently, contour lines remain the same (Figures 6A-D).

Data from the 1986 survey reveals that there is a zone of abnormally high copper, lead, zinc and silver soil concentrations overlying the upper part of the Irene Volcanic Formation in the southern part of the Fern 3 R4201(6) claim. Soil metal enrichment in this area is weak compared with that over the main workings-area on Fern R4175(6) (Figures 6A-D).

3.4 Property Structure

The stratigraphy underlying the Iva-Fern claim group has been deformed into a steeply westward-dipping north-south striking homocline. Bedding-cleavage and intercleavage relationships indicate that this may be the eastern limb of a large tight syncline. Locally, strikes and dips are variable (Figures 7A and B).

Remnant bedding structures observed near the western boundary of the claim indicate that the stratigraphy is upright with tops to the west. Metamorphic mineral development and rotation of bedding plane structures toward the plane of the first cleavage makes bedding difficult to identify in many outcrops.

The first cleavage is defined by pervasive greenschist metamorphic mineral growth. It strikes from 160° to 180° and dips steeply westward. The second cleavage, also defined by greenschist facies metamorphic mineral growth is sub-parallel and commonly somewhat steeper than the first cleavage. The third cleavage is a fracture cleavage that strikes about 210° and dips steeply northwest.

Foliation in the syenite intrusion exposed in the western part of the Fern Claim strikes approximately 152° and dips northeastward. Pervasive jointing in the syenite strikes about 214° and has near-vertical dips.

The long axes of syenite bodies exposed on the Fern Claim are sub-parallel with the first cleavage axial plane (Figure 7A and B). Field evidence indicates that these syenite bodies may have been emplaced along planes of weakness developed through late shearing in the direction of the first cleavage.

3.5 Property Geology

Rock outcrop exposures comprise less than 10% of the surface area of the Iva-Fern Property (Figures 7A and B). Local stratigraphy is best exposed on the southern part of Fern R4175(6) claim and along a logging road that transects the Fern 2 R4176(6) claim at the 5000 ft level.

The stratigraphy mapped on the claims comprises four principal formations deposited during the Hadrynian Era which subsequently have been intruded by an igneous body of Eocene age.

The oldest rocks on the property are the Toby conglomerates. They are polymict conglomerates with elongate quartz clasts ranging in size from a few millimetres to cobbles 45 cm long and 20 cm wide. They are disseminated throughout a fine-grained green groundmass that is composed to an unknown degree by totally resorbed mafic clasts. Partially resorbed mafic clasts are observed to be far more ductile than adjacent felsic clasts. They display extreme elongation and commonly wrap around adjacent felsic clasts. Approximately 95% of the quartz clasts are elongate.

In the conglomerate, clast size sorting indicates the orientation of bedding. Also it is apparent that clast size generally increases westward in the conglomerate. This represents a coarsening upward sequence in that unit.

The andesitic volcanics of the Irene Volcanic Formation overlie the Toby Conglomerates. The Irene volcanics are fine-grained, massive to schistose, intermediate to mafic volcanics. On the Iva-Fern Property, the Irene Volcanic Formation reaches a maximum thickness of about 1000 m near the main workings area on the central part of the Fern R4175(6) claim.

(Figure 7A). This formation is less than 800 m thick along the logging road section at the 5000 ft (1524 m) level in the central part of the Fern 2 R4176(6) claim (Figure 7B).

Contained within the upper part of this formation on the Fern R4175(6) claim are carbonate and chloritized beds associated with zones of massive sulphides. The major sulphide minerals within these zones are: galena, sphalerite, chalcopyrite, pyrite, bornite and pyrrhotite. Azurite, malachite and anglesite are common on weathered surfaces (Solkoski, 1985).

Near the Fern-Fern 3 boundary, there are minor sulphide occurences associated with brecciated and hornfelsed areas within the upper part of the Irene Volcanic Formation (Figure 8). In these occurences, sulphide mineralization may have been affected by the emplacement of the nearby syenite body. Sulphide minerals in these occurences include pyrite, chalcopyrite, galena and minor pyrrhotite and bornite.

At least ten zones of disseminated suplhide were mapped within the Irene volcanics along the logging road section on Fern 2 R4176(6) (Figure 7B). These zones run parallel to bedding and first cleavage and are associated with areas of carbonate and chlorite rich rock in the volcanics.

At the northern end of the Fern R4175(6) claim, textures indicate that massive andesitic flows underlie fine-grained andesitic tuffs which in turn, are overlain by fine-grained pyritic metasediments. Westerly stratigraphic tops in the volcanics are indicated by relict sedimentary structures in water laid cherty tuffs near the western boundary of the claim.

Where the andesites are close to syenite intrusions, they are hornfelsed and commonly brecciated over wide areas.

The contact between the Toby Conglomerates and the Irene Volcanic Formation is poorly exposed both on the southeastern part of the Fern R4175(6) claim and on the logging road section at the 5000 ft (1524 m) level on the Fern 2 R4176(6) claim. The contact between the Irene Volcanic Formation and the overlying Monk Formation phyllites is not exposed.

The grey phyllites of the lower part of the Monk Formation are about 150 m thick on the southwestern part of the Fern R4175(6) claim where they are well-exposed. They thicken northward to about 500 m near the Fern-Fern 3 boundary.

In some areas near the contact with the Irene Volcanics, the grey phyllites are extensively altered as revealed by the pervasive development of sericite. These rocks may be a felsic tuff overlying the Irene volcanics.

The middle member of the Monk Formation is a thinly laminated limestone that conformably overlies the grey phyllites (Figures 7A and B). A 10 to 30 m thick pyritic, silicified tuff marks the contact between the laminated limestone and the grey phyllite. At this contact, the limestone is variably brecciated. Near the western boundary of the Fern R4175(6) claim, limestone breccias contain whitish grey, angular to sub-angular clasts of limestone suspended in a dark grey matrix. Associated grey phyllites are hornfelsed.

During Eocene time, a syenitic intrusion was emplaced in the west-central part of the Fern R4175(6) claim.

The syenite is not circular as it is mapped in Geological Survey of Canada, Open File 929 (Figure 4). It is a large elongate north-south trending body with numerous offshoots running parallel to the main mass (Figures 7A and B). Numerous small outcrops and subcrops of syenite occur near the centre of the Fern R4175(6) claim cutting through the Irene volcanics, perhaps along major zones of weakness.

The syenite is fine- to medium-grained and grey in colour. In some places, it appears leached and is whitish-grey. This leaching is well-developed in the central part of the Fern R4175(6) claim. In general, the syenite contains abundant, randomly oriented amphibole phenocrysts and small apple-green glassy crystals tentatively identified as olivine.

Fine-grained lamprophyre dykes in the main workings-area may be a boundary phase of the syenite. Dump samples of lamprophyre dyke rock at the main adit are fine-grained almost bedded rocks. These appear to be from chill zones in contact with the volcanics. Some lamprophyre dump samples are porphyritic with large plagioclase phenocrysts in a mafic matrix.

Syenitic and albititic dykes intrude the stratigraphy along the logging road section on Fern 2 R4176(6) (Figure 7B). These dykes are probably related to the emplacement of the syenite body on the fern claim to the north.

3.6 Interpretation of Property Geology

The Toby Formation polymict conglomerates are proximal sediments laid down rapidly. They may record fanglomerate deposition or a coarse clastic apron deposited at the shoreline of a rapidly subsiding basin (Douglas ed., 1970).

Conformably overlying the Toby Conglomerates are the Irene volcanics; fine-grained andesites, probably deposited in relatively deep water. The source of the volcanics is not known. However, a local volcanic vent may have been located close to the central part of the Fern R4175(6) claim.

The Irene Volcanic Formation is much thicker on this part of the property than anywhere else in the claim-area. Thickening of the volcanic stratigraphy occurs also in the lower member of the Monk Formation interpreted to be a felsic tuff overlying the Irene volcanics.

The most significant sulphide mineral deposition on the property occurs within the Irene Volcanic Formation in the central part of the Fern R4175(6) claim (Figures 7A and B)(Solkoski, 1985). Sulphide mineral deposition is best exposed in the main workings-area where the volcanic stratigraphy is thickest.

There, mineralized zones seem to be concordant bodies associated with cherty tuffs and minor carbonate near the top of the Irene volcanics.

The Irene volcanics are overlain by the three members of the Monk Formation which represent a sequence of the deposition of fine-grained felsic tuffs, minor limestone deposition and finally, mudstone deposition in possibly shallowing seas.

3.7 Property Mineralization

During the 1985 exploration program (Solkoski, 1985), economic mineralization on the central part of the property was mapped in detail. Sulphide mineralization was found to be concentrated in two areas; the main workings-area and the lower adit-area (Figure 5, 6A-D, 7A and B). These two showings areas contained over 60 old surface workings and extensive underground workings. These areas are connected by an area of anomalously high soil metal concentrations.

Concordant massive sulphide mineralization is best-exposed in the main workings-area, located just south of the crest of the ridge between

Cultus and Laib creeks. It is an area about 700 m long and 300 m wide extending from the southern part of the Excelsior crown grant to the northern part of the Iva R1917(8) reverted crown grant (Figure 5). In the main workings-area are the trenches, pits and underground workings described in section 1.5 of this report.

During the 1985 program, L.R. Solkoski took 23 composite grab samples of mineralized rock from several of the trenches, mostly from the main workings-area. Don W. Tully, P.Eng. took 9 additional samples of similar mineralization during a visit to the property that year.

The results of this sampling were summarized as follow (Solkoski, 1985):

	Low	High	Average
Copper %	<0.01	5.62	1.06
lead %	0.49	38.06	11.44
zinc %	0.01	4.11	0.77
silver oz/ton	0.20	9.89	3.50
gold oz/ton	0.002	0.080	0.02

Solkoski (1985) identified five concordant zones of massive sulphide mineralization in the main workings-area:

The Main Zone is exposed in pits and trenches for a strike length of 400 m in a north-south direction and dips steeply westward. In the B.C. Minister of Mines, Annual Reports for 1917 to 1928, this zone is called the No.2 Vein.

Former workers believed that this zone extended southward to the lower adit on the Iva R1917(8) reverted crown grant (Figure 5).

Solkoski believed that this may be incorrect. The strike direction of the zone at the lower adit entrance and of surrounding rocks indicated that mineralization at the lower adit was part of another zone; possibly the No.5 Zone.

The Main Zone has widths of up to 2.0 m.

Ore textures throughout the Main Zone appear to be of two types; firstly, disseminated strataform galena and irregular masses of chalcopyrite in silicified strata, and secondly, galena and chalcopyrite in less silicified rock occuring with high concentrations of siderite and minor manganese minerals in a breccia of calcareous and altered volcanic fragments. Most of the Main Zone contains high concentrations of chalcopyrite, galena, malachite and azurite.

Alteration minerals in the Main Zone are: quartz, sericite, siderite, and manganese minerals. Alteration in the enclosing rocks includes pyritization and sericitization with limonite alteration.

The No.2 and No.3 zones are 75 m to 100 m east of the Main Zone and parallel to it (Figure 5). Spatial relationships indicate that the No.2 and No.3 zones may be the same zone. However, mineralization in these zones differs in type, texture and content (Solkoski, 1985). In the No.2 Zone is coarse-grained galena and abundant chalcopyrite. Mineralization in the No.3 Zone is rich in fine-grained galena and has very little chalcopyrite.

The No.4 Zone is exposed approximately 25 m west of the Main Zone. It has a known length of about 70 m. The No.4 Zone dips steeply westward and strikes parallel with the Main Zone (Figure 5).

In the No.4 Zone, massive sulphide occurs in a breccia matrix enclosing altered volcanic clasts. The breccia matrix is composed of galena and minor chalcopyrite.

The No.5 Zone is exposed 75 m west of the No.4 Zone. It is exposed for less than 20 m in two trenches at its northern end and for 50 m in length at its southern end at the lower adit (Solkoski, 1985). The width of the No.5 Zone is not known at its northern end. At the lower adit, mineralization is 2 m thick.

Mineralization in the footwall at the lower adit is finely disseminated galena in a calcareous groundmass. Fine-grained galena also occurs at the northern end of the No.5 Zone within finely bedded water laid cherts. Massive chalcopyrite in brecciated host rocks occur both on the dump at the lower adit and in trenches at the northern end of the No.5 Zone (Solkoski, 1985). Alteration minerals at the lower adit are siderite and manganese minerals.

During the current exploration program, the northern and southern parts of the Iva-Fern claim group were prospected for other areas of economic mineralization. Additional sulphide mineralization was located in two areas on the claims; near the Fern-Fern 3 boundary north of the main workings-area and within the Irene volcanics on the logging road section in the central part of the Fern 2 R4176(6) claim.

Minor sulphide mineralization was found in quartz segregations and veins in the upper part of the Irene volcanics near the Fern-Fern 3 boundary (Solkoski, 1985). The writers returned to the area during the current program to map and sample this mineralization. During surveying of the northern extension of line 609.66 m W from the main workings-area to 2559.70 m N several old exploration workings were discovered enhancing our interest in this area. The workings and mineral showings were mapped and sampled (Figure 8).

Mineralization consists of disseminated galena, chalcopyrite and pyrite. Alteration to surrounding volcanic rocks is moderate, comprising assemblages of siderite, quartz, limonite, sericite and minor manganese minerals. Alteration commonly occurs in breccias containing volcanic fragments in a calcareous matrix.

Mineralization in this area is sparse and does not seem to represent an important northward extension of mineralization of the main workings-area.

Mineralization was located on the logging road at the 5000 ft (1524 m) level in the central part of the Fern 2 R4176(6) claim and in outcrops on skidder trails above the road (Figure 7B). At least ten zones of disseminated sulphide mineralization are exposed in Irene volcanics along the logging road section.

Sulphide minerals in these zones include chalcopyrite, galena, pyrite and minor sphalerite. These minerals are disseminated throughout medium- to fine-grained silicified volcanics commonly with high concentrations of siderite and minor manganese minerals. A brecciated phase is common. It contains volcanic fragments in a calcareous matrix.

The mineralized zones on the logging road commonly strike from 148° to 160° and have dips from 45° to 70° west. They are 0.5 to 4.0 m wide.

Although sulphide minerals in these zones have predominantly disseminated stratiform textures, the spacial association of the zones with syenitic dykes and pervasive late hornfels development in the volcanics indicates that their present form may be related more to metamorphic processes than to original sedimentation. However these zones are located along a metal-rich trend located within the Irene volcanics throughout the length of the Iva-Fern claims.

Hornfels development in the volcanics is accompanied by late pyritic, sericitic and limonitic alteration.

3.8 Interpretation of Property Mineralization

Workers on the Iva-Fern Property prior to 1930 outlined two zones of mineralization in the main workings-area and referred to them as the No.1 and No.2 veins. The No.1 Vein mineralization was reportedly rich in fine-grained galena and carried almost no copper. The No.2 Vein contained coarse-grained galena and had significant copper. Gangue in both veins was reportedly lime and silica.

At that time, mineralization at the lower adit was thought to be related to the No.2 Vein. Mineralization at the lower adit reportedly consisted of galena, zincblende and chalcopyrite in a gangue of siderite and silicified country rock.

It was observed that basic lamprophyre dykes accompanied the veins but their connection with sulphide mineralization was not determined.

During the 1985 program, Solkoski (1985) identified three additional zones of mineralization in the main workings-area on the Fern R4175(6) claim. (Figure 5). It appeared that there were a total of five north-south trending zones of mineralization, parallel with each other, over a total width of from 100 to 200 m.

These five concordant zones of mineralization are near the top of the Irene Volcanic Formation. All five zones contain varying amounts of galena and chalcopyrite. Sulphide textures of massive sulphide mineralization in the trenches of the main workings-area and from the main adit dump indicate several phases of mineralization (Solkoski, 1985), including: syngenetic deposition of sulphides resulting in fine-grained banded sulphides accompanied by siliceous beds of either chert or felsic volcanic; and extensive pyritization in volcanics above the mineralized zone. This phase was followed by brecciation and the introduction of siderite and manganese minerals accompanied by remobilization of pre-existing sulphides, with the addition of silver-bearing galena.

Solkoski (1985) divided trench sample assays into two groups; sulphides containing about 5% combined base metals and 1 to 4 oz/ton silver, and enriched samples that carried up to 38% lead and about 10 oz/ton silver.

The probable age of deposition of the sulphides was determined to be Hadrynian. Enrichment of the sulphides could be as recent as Eocene. Enrichment was probably related in part to the intrusion of syenite near the western part of the Fern R4175(6) claim (Figure 7A).

Soil survey results indicated that a copper and gold-enriched zone occured within the upper part of the Irene Volcanic Formation. This zone was also anomalously high in lead, zinc and silver around the main workings and lower adit areas (Figures 6A-D). Solkoski concluded that these areas could host a significant massive sulphide body. He noted that there was further evidence of extensive mineralization in the form of a large sericitic and chloritic alteration zone in the andesites above the main workings-area possibly the result of the operation of a hydrothermal convection cell.

Solkoski (1985) conjectured that mineralization in the main workings-area and the lower adit-area could be either of the concordant or transgressive types (Douglas ed., 1970) or either of the two overprinted on a volcanogenic massive sulphide.

During the 1986 program, sulphide mineralization was found in the Irene Volcanic Formation both north and south of the main workings- and lower adit areas.

Minor chalcopyrite-galena-pyrite mineralization was found to be associated with quartz segregations and veins near the Fern-Fern 3 boundary (Figures 7A and 8).

There, the locations of old exploration trenches due north of the main workings-area imply that mineralization may be a low-grade extension of concordant massive sulphide mineralization from the main workings-area. Correlation of this mineralization with that of the main workings-area is made difficult by the lack of surface exposure and the disruption of the stratigraphy by late quartz bodies.

Sulphide mineralization also occurs within the Irene volcanics on the Fern 2 R4176(6) claim about 2000 m south of the main workings-area. Mineralized zones are exposed throughout the Irene volcanics along the logging road at the 5000 ft (1524 m) level. They are sub-parallel with the bedding-first cleavage plane and have fine-grained disseminated chalcopyrite-galena-pyrite mineralization indicating that they may be related to original metal content within the Irene volcanics. However, their close association with local syenite dykes and anatexic hornfels development suggests that these mineralized zones attained their present form after the volcanics were deformed and metamorphosed.

The location of mineralization near the Fern-Fern 3 boundary, in the main workings and lower adit areas, and on the logging road on Fern 2 suggests that there is a trend of metal-enriched rocks. Some mineralized zones within the trend are related to the top of a mafic-felsic sequence within the volcanics. They may have been deposited during an exhalative phase of volcanism out onto the sea floor. Thickening of the volcanic stratigraphy near the main workings-area indicates that it may be close to the volcanic vent-area. Thickening and enrichment of massive sulphide zones in the main workings-area suggest that it may be close to exhalative vents. Alteration in Irene Formation andesites above the main workings-area rocks indicates that a thermal convection cell may have been depositing metals in this area for a significant length of time.

The main workings-area remains the area of greatest potential for finding an economic body of massive sulphide on the property. The other mineral showings on the property probably are lean distal equivalents to mineralization in the main workings-area.

4.0 MAGNETIC AND ELECTROMAGNETIC SURVEYS

4.1 Geophysical Survey Grid

The 1986 geophysical survey grid was laid out over the north-central part of the Fern R4175(6) claim from the lower adit-area northward to the Fern-Fern3 boundary (Figures 5 and 7A). Within the grid-area were the main workings and lower adit areas containing all known major economic mineral showings on the property, and the areas of anomalously high soil metal content surrounding the showings (Figures 6A-D).

The 1986 geophysical survey grid comprised 19.9 line kilometers. By convention, the grid was laid out in a direction approximately orthogonal to the strike of known mineralized structures and was divided into two adjoining sections.

The southern section was bounded by stations 300 m W and 900 m W on lines 800 m N to 1850 m N. Hip chain and compass lines were extended east and west from a transit-surveyed base line at 609.66 m W (Figures 9C-D, 10C-D, 11C-D).

The northern section of the grid was bounded by stations 600 m W and 1100 m W on lines 1850 m N to 2500 m N. Hip chain and compass lines extended westward from the baseline at 609.66 m W (Figures 9A-B, 10A-B, 11A-B).

Spacing between consecutive east-west lines was 50 m. Survey stations were flagged and marked at 20 metre intervals on each line.

4.2 Scintrex MP2 Magnetometer Survey

The 1986 magnetic survey was conducted by C. Geoffery Spearing, B.Sc. (Eng.) assisted by Glenn R. Caulfield over the entire geophysical survey grid (Figures 9A-D).

The instrument selected for the survey was a Scintrex MP2 proton magnetometer. The magnetometer measured the total vertical component of the earth's magnetic field to 1 nT; where 1 nT (nanoTesla)= 10^{-9} Tesla=1 gamma) and provided a digital readout.

The survey grid was traversed in a series of closed loops. Several readings were taken at each station within each loop. The average of the readings at each station was recorded by the operator.

To compensate for fluctuations in the earth's magnetic field, opening and closing readings were recorded at designated baseline stations for each loop. Any descrepencies between the readings were divided among all of the stations within the loop. Also, to compensate for diurnal magnetic variation, several base station readings were recorded throughout the survey period. Loop corrections were calculated and divided among all of the stations within each loop. Raw magnetic data and calculation results are contained in Appendix D.

The results of the MP2 ground magnetometer survey (Figures 9A-D) are consistant with the results of an aeromagnetic survey of the area conducted by the Geological Survey of Canada (Figure 12).

The most significant aeromagnetic features over the Iva-Fern Property are a pair of magnetic highs separated by a saddle located over the north-central part of the Fern R4175(6) claim (Figure 12).

Of the two magnetic highs, the western one is most intense. It is a pear-shaped feature that coincides with the northeastern contact of a syenitic intrusion near the western boundary of the claim (Figures 4, 7A and 12).

The eastern magnetic high is a liver-shaped feature that extends north-south in the eastern part of the Fern R4175(6) claim. This feature coincides with the lower part of the Irene Volcanic Formation in its thickest part (Figures 4, 7A and 12).

Between these two magnetic highs is a saddle in the magnetic contours coinciding with the Iva Fern crown grants and the mineralization of the main workings and lower adit areas (Figures 4, 7A and 12).

The 1986 geophysical grid-area covered the magnetic saddle containing the mineralization and parts of the magnetic highs east and west of the saddle (Figures 9A-D). Local-scale magnetic features within the saddle were explored in order to better-define and correlate mineralized zones and soil anomalies in the area.

Part of the pear-shaped western magnetic high is covered by the southwestern part of the survey grid. On ground survey scale, this high is a more complex feature, comprising a series of steep highs and troughs. Magnetic field intensities comprising the highs are from 58400 gammas to 58901 gammas. Intensities in the troughs are as low as 57292 gammas (Figures 9C and D). This feature extends along the western margin of the grid at 800 m W from 1050 m N to 1750 m N. It curves away westward off the grid-area at its northern and southern ends.

A magnetic ridge extending eastward from this feature along line 1150 m N (Figure 9D) was probably due to short term solar flux and was disregarded.

An undulating plane of magnetic contours extends across the central part of the survey-area. In the southern part of the survey-area, this plane is about 350 m wide and is bounded by well-defined magnetic highs (Figures 9C and D). Field intensities vary from about 57400 gammas to the west to 57600 gammas to the east. This feature is the saddle defined by the aeromagnetic survey (Figure 12).

The mineralized zones of the main workings-area are in the east-central part of the magnetic saddle (Figure 9C). The mineralized zones generally strike 190° and dip 80° westward. Magnetic contours over the mineralized zones form a saw tooth pattern defined by the 57550 gamma contour which extends from about 1750 m N to 950 m N.

In the main workings-area, where mineralization is comparatively well-exposed on surface, the saw teeth trend about 205°; diverging about 15° from the trend of the mineralized zones. Westward and southward away from mineralized outcrops, the saw teeth turn due west (Figures 9C and D).

The eastern part of the magnetic plateau in the southern part of the grid is defined by a ridge of magnetic highs (Figures 9C and D). This ridge trends 020° from 850 m N, 580 m W to 1300 m N, 400 m W. It probably extends well off the grid-area both to the north and south, being part of the liver-shaped magnetic high defined by the aeromagnetic survey (Figure 12). Field intensities on this ridge are as great as 58109 gammas and are commonly over 57800 gammas.

In the northern part of the grid-area (Figures 9A and B), the saddle is not well-defined by magnetic highs. It is assumed that the magnetic plateau is bounded in this area by the liver-shaped aeromagnetic high somewhere east of the grid-area.

The magnetic plateau is transected in the northern part of the grid-area by a narrow north-south trending magnetic ridge. The ridge extends from 1850 m N, 940 m W to 2500 m N 940 m W (Figures 9A and B). It is accompanied to the west by a poorly defined trough and a series of magnetic highs that may be a second ridge. This series of features is best-developed at 2250 m N where it is 120 m wide. Magnetic intensities in these features vary from 57292 gammas to 58471 gammas but are generally much less extreme.

The pear-shaded magnetic high located over the northwestern part of the Fern R4175(6) claim generally coincides with an Eocene-age syenite intrusion (Figures 4 and 12). Mapping on the property reveals that the intrusive contact is poorly exposed (Figure 7A). It is difficult to determine if this aeromagnetic high is related to the syenite itself or magnetic mineral development within the adjacent Irene volcanics.

The part of this aeromagnetic feature measured on the ground in the southwestern part of the grid-area is a complex series of peaks and troughs (Figures 9C and D). It seems most likely that this local complexity is due to uneven remobilization of magnetic minerals in the metamorphic aureole developed in the volcanics around the syenite. The syenite itself is a coarse-grained undifferentiated body that would probably have a more constant magnetic expression than is found in the southwestern part of the survey-area.

The saw tooth pattern in magnetic contours over the main workings-area is compratively subtle. It is defined by a range of only 75 gammas. However, it is rather clear and easily interpreted.

The mineralized zones in the main workings-area are nearly vertical plate-like bodies. They have known lengths of over 300 m, extend to recorded depths of at least 100 m and are known to be up to 1.5 m thick on surface. These metaliferous plates strike 190° and dip 80° westward.

Theoretically; if there are no other magnetic influences, these mineralized zones should result in a distinct magnetic expression: a linear magnetic high with very closely spaced contours to the east and more widely spaced contours to the west. The magnetic contours west of the mineralized zones would be more widely spaced than those to the east because in westward dipping structures like these, the magnetically responsive mass declines away from surface slower to the west than to the east.

To this ideal case must be added surrounding magnetic influences.

It is logical to assume that the mineralized zones exert the strongest influence on the magnetic survey at outcrop where a mineralized zone's mass is closest to the magnetometer. As the instrument readings are taken farther away from mineralized outcrops, larger scale regional magnetic features become more dominant and blur local magnetic features.

This seems to happen over the mineralized zones of the main workings-area. The saw teeth of the magnetic feature over this area face southwestward, trending at about 205° which diverges only 15° from the trend of the mineralized zones (Figure 9C). The trend of the saw teeth confirms a westward dipping structure. The sharp elongate shapes of the teeth themselves are probably in response to separate mineralized zones or variations of magnetic mineral content within the zones.

Contours from readings taken west and south of the mineralized outcrop in the main workings-area form shapes that progressively degenerate from elongate, well-defined saw teeth trending close to the trends of mineralized zones, to broad lobes and cusps that trend westward. This progression is interpreted to be related to the declining influence of the mineralized zones and the increasing influence of more regional magnetic features away from the main workings-area (Figures 9C and D).

The saw-tooth pattern ceases abruptly at the north end of the main workings-area, at about 1750 m N. This indicates that this may be the northern limit of significant mineralization. Lack of sulphide mineralization in old exploration trenches north of the main workings-area (Figure 8) confirms this.

The saw-tooth pattern fades gradually between the main workings-area and the lower adit-area indicating that unexposed sulphide mineralization may exist between these areas (Figures 9C and D). The existance of subsurface mineralization between these areas is also indicated by soil metal anomalies (Figures 6A-D).

Magnetic contours do not define a steep decline from a ridge as they would in the hypothetical case of near vertical metaliferous plates as previously described. Instead, they define only a slight decline and then a rapid rise toward the eastern part of the grid-area (Figures 9C- and D). This departure from the theoretical case is due to the pervasive influence of the liver-shaped aeromagnetic high located over the northwestern part of the Fern R4175(6) claim (Figure 12).

The liver-shaped high is is most intense over the basal mafic part of the thickest section of the Irene volcanics. This high is probably due to the progression of the deposition of iron-rich volcanics to comparatively iron-poor volcanics during the deposition of the Irene Volcanic Formation.

The mineralized zones of the main workings-area have a rather small mass compared with the whole volcanic pile. This can easily account for the large influence that the liver-shaped magnetic high, related to the whole volcanic pile, has on the magnetic expression compared with the influence of the mineralized zones.

Mapping in the northern part of the geophysical grid-area revealed that the magnetic ridge extending northward from 1850 m N to 2500 m N coincided with a series of quartz veins or segregations.

It is speculated that these quartz bodies represent remobilization along a trend of structural weakness extending northward from the contact of the syenitic intrusive.

The magnetic ridge in the northern part of the grid-area may be related to contact metamorphism on the eastern margin of the quartz-filled trend. Poorly developed magnetic highs west of the ridge may reflect contact metamorphism on the western margin of the trend.

4.3 Geonics EM16 Electromagnetic Survey

The EM16 electromagnetic survey was conducted by C. Geoffery Spearing, B.Sc.(Eng.) on the 1986 geophysical survey grid (Figures 10A-D).

Survey lines were approximately 45° to the signal vectors of the transmitter stations used and orthogonal to the primary strike of known mineralized zones on the property.

The initial transmitter station selected for the survey was NLK located at Seattle, Washington. Station NLK transmitted at a frequency of 24.8 kHz. It was selected because it produced the most audible signal and yielded the most easily distinguishable differences between signal maxima and minima. The Seattle signal was received for the first 12.0 line km of the survey; after which, it ceased transmitting. The writers have subsequently learned that this downtime was due to routine maintenance of the NLK transmitter.

The remaining 7.7 line km, lines 1800 m N to 2500 m N were surveyed using station NPM located at Lualualei, Hawaii, which transmitted at 23.4 kHz. The Lualualei signal was fainter than the signal received from Seattle but minimum and maximum signal intensities were clearly distinguishable.

It should be noted when refering to Figures 10A-D that conductors are more subtle between lines 1800 m N and 2500 m N than between lines 800 m N and 1750 m N partly because of the difference in signal intensities received from stations NLK and NPM. However, the use of Fraser-filtering (Figures 11A-D) reduces this distortion caused by the difference in dynamic range resulting from substituting stations during the survey.

The instrument selected for the 1986 electromagnetic survey was the Geonics EM16.

This instrument has two electromagnetic receiving coils; a signal coil and a reference coil. The signal coil has a normally vertical axis and the reference coil has a horizontal axis. Each coil is tuned to the same primary signal by plug-in crystal modules. However, each coil has a separate amplifier to maintain signal integrity. Readings result from a comparison of the magnetic fields of the two coils through various angles in relation to the direction of the primary signal.

The method of operation of the EM16 instrument during the 1986 survey was in accordance with those recommended by N.R. Paterson and V. Ronka (1979)

The EM16 instrument came equipped with several crystal modules, each for a very low frequency (VLF) transmitting station. Station NLK at Seattle, Washington was selected because it had the best signal strength and transmitted a primary signal at the best angle to the survey lines and mineralized zones.

The direction and strength of the primary magnetic field; at 90° to the primary signal direction, was tested in the field before the survey commenced. The primary field direction was determined by holding the instrument with the signal coil horizontal, then rotating it it until a minimum audible signal was heard, reflecting a minimum coupling.

Field directions created by signal transmissions from NLK at Seattle, Washington and NPM at Lualualei, Hawaii were at about 45° to the survey lines and mineralized zones. Although these were the best stations available, it was realized that readings from the EM16 instrument for this survey would not result in maximum resolution data because of the low angle between the primary magnetic field and the survey.

During the survey, two readings were obtained at each survey station. They were in-phase and quadrature readings.

The in-phase reading was taken first. The field method was as follows. The instrument was held vertically with its reference coil in a direction approximately 45° to the transmitter location, parallel with the lines of the survey grid. In that position, the instrument was receiving a major portion of the primary field. It was then rotated in a vertical plane until a minimum signal was registered. In that position, the signal coil was oriented along the minor axis of the ellipse of polarization, and the dip angle of the instrument was the angle inclination of the ellipse of polarization (Paterson and Ronka, 1979; p.31, Figure 20h).

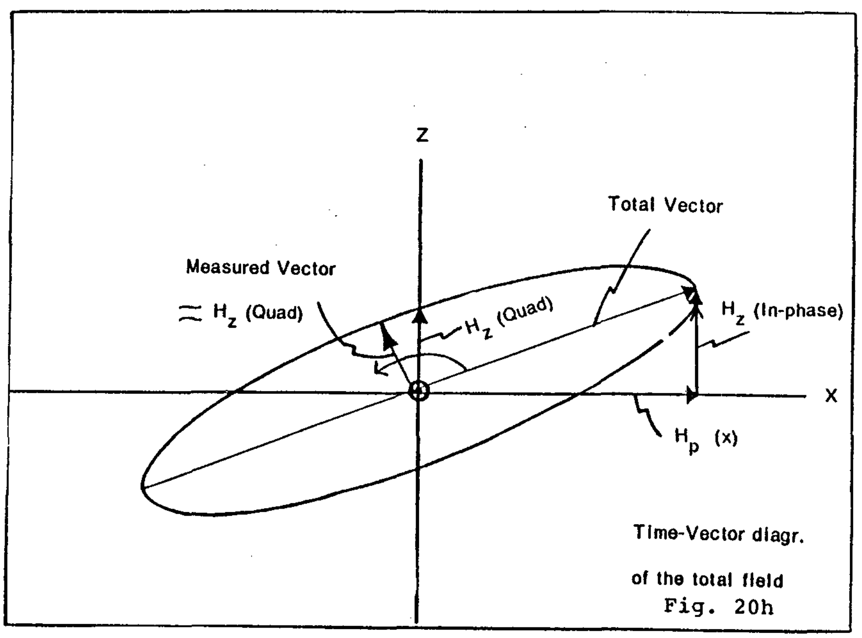

Fig. 20h

The tangent of the ellipse angle is an approximation of the ratio of the real component of the secondary vertical field to the horizontal primary field. The EM16 registers the tangent of the dip angle, as a percent, normally referred to as in-phase percent (Figures 10a-D). To convert to a dip angle expressed in degrees, the following formula is applied:

$$\text{Dip Angle } (^\circ) = \text{Arc Tan } \left(\frac{\text{Dip Angle } (\%)}{100} \right)$$

The quadrature reading was determined in the field by rotating the quadrature knob on the instrument while holding the instrument steady in the minimum signal direction. Through this adjustment, a proportion of the voltage in the reference coil; after first shifting its phase 90°, was used to compensate the voltage in the signal coil. The quadrature reading was recorded when the best signal minimum was obtained.

The calibration of the knob registered the percentage of the reference signal used in the compensation, thereby providing a direct measurement of the ratio of the signal strengths in the two receiving coils. This was an approximation to the ratio of the quadrature component of the vertical secondary field to the horizontal primary field expressed as a percent.

Because the dials of the inclinometer were calibrated in positive and negative percentages, the EM16 readings were sign-dependant on the direction of travel. Therefore, to avoiding mixing polarities, all station readings were taken facing west. With this convention, positive readings dipped to the east and negative readings dipped to the west. A total of 1030 station readings were recorded.

EM16 data were processed and recorded in two formats, as raw data profiles (Figures 10A-D) and as Fraser-filtered results of the in-phase data (Figures 11A-D).

Conducters indicated by the electromagnetic profile data are subtle. An analysis of the peaks, troughs and cross-overs generated by the in-phase and quadrature data (Figures 10A-D) indicate two conductive features.

The first is a concentration of conducters over the known mineralized area and ore dumps of the main workings-area. The second feature is represented by two conductive halos parallel with the syenite-volcanic contact located in the west-central part of the Fern R4175(6) claim (Figure 7A). The individual conducters have been labelled from A to I for easy reference (Figures 10A-D).

Conducters A and B (Figure 10B) strike approximately due north for a length of 100 to 150 m. Although they represent possible conductive zones, the trace is too small to interpret with any accuracy. Therefore, it will suffice to state that these conducters are marked primarily in the interest of completeness pending later confirmation of their existance.

Conducters C and D are crescentic and appear to shadow the contact of the syenite intrusive with the Irene volcanics in the western part of the Fern R4175(6) claim. As is normal in an electromagnetic survey in which the lines are run from west to east, conducters are shifted eastward away from the actual conductive areas on the ground. The intrusive contact is reflected over the volcanics to the east over a length of 450 m from line 1550 m N to line 2000 m N beyond which the trace is not detectable.

Conducters C and D may result from a zone of mobilized iron-bearing minerals flushed out into the volcanics by heat from the emplacement of the syenitic intrusive.

Conducters E to I parallel the mineralized zones of the main workings-area (Figures 10C and D). These conducters outline the mineralization for a length of 550 m extending from line 1050 m N to line 1600 m N. In the vicinity of the ore dumps at the main adit portal, some electromagnetic interference is apparent. This is probably due to the influence of surface conducters such as iron warteline, iron haulage rails and iron tools discarded around an old blacksmith shop.

As with conducters C and D, conducters E to I are transposed southeastward. Therefore, to properly correlate the EM profile data with the known location of mineralized zones, it is necessary to shift the conducters north-westward. By doing so, conducters E and F represent the Main Zone (Figure 10C) and conducters G and H represent the NO.3 and No.2 zones. Of interest is conducter I which lies south of known mineralized zones in an area with little surface outcrop.

Little other information is apparent from the in-phase and quadrature profile data. There is one spurious reading at line 800 m N, 380 m W. Because this is the only reading of such magnitude on line 800 m N, it is presumed that an error was recorded in the field and that the 800 m N profile is relatively flat (Figure 10D).

The northwestern part of the survey is represented by a series of low amplitude peaks and cross-overs. There, the data is too subtle to determine conductive features.

Electromagnetic data can be difficult to interpret because of the interaction of geological settings, conductive mineral deposits and geological background noise. This interaction can lead to distortion in profiles and must be recognized when interpreting data. There are several possible sources of data distortion in the data of the survey of the Iva-Fern Property.

Electromagnetic responses generated by conductivity changes in the overburden or at contacts between overburden and bedrock locally may overshadow conducters within the bedrock. This source of data distortion is probably not significant in this survey because the survey grid-area is covered by very thin, well-drained soil. Data distortions would be more likely to be the result of conductive changes at the stratigraphic contacts within the volcanics masking the electromagnetic responses of the mineralized zones.

Electromagnetic conducters in mountainous terrains are normally shifted down slope. In the survey-area, topography slopes down to the southeast. Conducters E to I are, as should be expected, shifted down-slope from the mineralized zones (Figures 10C and D).

In some areas, low amplitude peaks may be of significance as well as those of much greater amplitude. This introduces a dynamic range problem which is complicated in this survey north of line 1800 m N because this data results from the use of a very distant transmitter. It is difficult to determine if any of the peaks north of 1800 m N are of any significance.

In every geological setting there exists a certain amount of background noise in the frequency range received by the electromagnetic instrument. To minimize errors caused by geologic noise and variable dynamic range, the raw data can be quantitatively filtered and contoured. Figures 11A-D show how the in-phase profiles appear after the filtered data is contoured. To enhance the interpretation of EM16 profiles, raw data can be processed using a technique devised by Fraser (1969) now normally called Fraser-filtering.

The purpose of Fraser's technique is to transform noisy non-contourable data into less noisy contourable data thereby eliminating a dynamic range problem and reducing noise interference.

To overcome these problems, Fraser's filtering technique includes a difference operator to filter data by transforming zero crossings into peaks and a smoothing operator to reduce the influence of background noise.

The filtering equation is derived to meet several criteria.

Dip angles are shifted 90° so that cross-overs and inflections are transformed into peaks that yield contourable data. Direct current bias within the instrument is removed and long spatial wavelengths are attenuated to increase the resolution of local anomalies.

These two criteria are met using the simple difference operator (M_2-M_1) where M_1 and M_2 are any two consecutive data points.

Also, station to station random noise must be minimized and the equation must be simplified. This is met by applying a smoothing or low-pass operator to the differences and eliminating the constant as follow:

$$f_{2,3} = \tfrac{1}{4}(M_2-M_1) + \tfrac{1}{2}(M_3-M_2) + \tfrac{1}{4}(M_4-M_3)$$

$$f_{2,3} = \tfrac{1}{4}(M_3+M_4-M_1-M_2)$$

$$f_{2,3} = (M_3+M_4) - (M_1+M_2)$$

The point $f_{2,3}$ is plotted between M_2 and M_3 (Figures 11A-D).

The quantitative filtering of the electromagnetic data simplifies its interpretation.

Five distinctive areas of conductivity are defined by Fraser-filter contours (Figures 11A-D), they are:

i the syenite-volcanic contact in the west-central part of the Fern R4175(6) claim (Figures 11C and D)

ii an S-shaped zone over the volcanics northwest of the main workings-area (Figure 11C)

iii a conductive area that mirrors the mineralized zones of the main workings-area on its southeastern margin (Figure 11C)

iv a conductive area that trends southwestward between the main workings-area and the lower adit-area (Figure 11D)

v a local steeply contoured feature adjacent to the dumps and camp at the main adit portal (Figure 11C)

The contact between the Irene volcanics and the syenite intrusive underlies the western part of the Fern claim. It coincides with a ridge of Fraser-filtered EM16 contours (Figures 11C and D). The remobilization of iron-bearing minerals near the intrusion may be responsible for a conductive halo around the intrusive contact. This halo is also illustrated by conductors C and D in the raw EM16 data (Figures 10B and C).

Northeast of the intrusive is an S-shaped area of high conductivity. This may be related to local conductivity differences between a quartz blow-out and surrounding volcanics exposed along lines 1700 to 1850 m N at about 1100 m W.

An area of rapidly changing electromagnetic conductivity is located between lines 1150 m N and 1650 m N. This area lies adjacent to and southeast of the main workings-area. It contains two parallel Fraser-filter contour ridges between 440 m W and 680 m W (Figure 11C). These ridges represent the Main Zone and the No.2 and No.3 zones of mineralization. As is normal with electromagnetic survey data from lines run from west to east, contour expressions (Figures 11C and D) are transposed eastward and south-eastward down slope to their present locations on the maps. The Fraser-filter contour ridges southeast of the main workings-area coincide with conducters E to I in the raw data (Figures 10C and D).

Extending southwestward between the conductive ridges of the main workings-area and the lower adit-area is a broad ridge (Figure 11D). This feature coincides with soil metal anomalies that connect these two showings-areas (Figures 6A-D). It has been postulated by previous workers on the property that these two showings-areas are connected by unexposed mineralization.

The old mine camp is located around the dumps at the main adit portal at 1425 m N, 580 m W (Figure 11C). In this area is iron pipe along a waterline, iron rails over the dumps and miscellaneous iron fittings and steel oil drums. All of this hardware shows up as a V-shaped conductor along the waterline area and bordering the southwestern margin of the main adit dumps. The fact that the EM16 instrument accurately defined this area provides positive results from a check on the instrument, giving the writers greater confidence in the accuracy of the electromagnetic data.

The electromagnetic survey correlates well with local geology and magnetic data resulting in a consistant picture of the geological setting of the mineralization on the Fern R4175(6) claim.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The 1986 geological survey on the Iva-Fern Property was an extension of the work done by Solkoski in 1985. Solkoski's mapping in 1985 was concentrated around the main workings and lower adit areas contained within the crown grants in the middle of the Fern R4175(6) claim (Figures 5, 7A and B).

Five concordant mineralized zones were mapped in the main workings-area in 1985. These zones contained sulphide mineralization that varied from massive chalcopyrite, galena and pyrite to massive galena. Sulphide mineralization was commonly accompanied by siderite and silica flooding and brecciation. Mineralization in the lower adit-area resembled that of the main workings-area in texture. Lack of outcrop made correlation between the two showings areas tentative.

During the 1986 geological survey of the property, exploration was concentrated on the Irene Volcanic Formation throughout the claims in search of other mineral potential. Showings were found in two areas. Old exploration trenches north of the main workings-area (Figure 8) contained minor disseminated chalcopyrite, galena and pyrite in zones that may have been lean lateral equivalents of the massive sulphide zones in the main workings-area. Several concordant bands of finely disseminated chalcopyrite, galena and pyrite mineralization were mapped in Irene volcanics in the central part of the Fern 2 R4176(6) claim (Figure 7B). All of the mineral showings in the Irene volcanics may have been the result of a period of metal exhalation during volcanism.

During the 1986 transit survey, line 609.66 m W was extended both southward and northward to provide a baseline from 800 m N to 2500 m N for the geophysical surveys. Line 478.81 m W; the eastern boundary of the Fern 3 R4201(6) claim, was cut and surveyed to provide a baseline from 2500 m N to 3300 m N for the 1986 soil survey. Both lines extended beyond their baseline requirements.

Results of the 1985 soil survey on the Fern R4175(6) claim established (Solkoski, 1985) that there was a zone of high concentrations of copper; and to a lesser extent, gold, which reflected an area of metal concentration in the upper part of the Irene Volcanic Formation. Soil results also revealed that high concentrations of lead, zinc and silver were associated with sulphide mineralization in the main workings-area and its northern extension near the Fern-Fern 3 claim boundary.

The 1986 soil survey tested the possible northward extension of abnormally high copper, lead zinc and silver concentrations at the northern margin of the 1985 grid (Figures 6A-D). It was found that the high soil metal contrations at the northern margin of the 1985 grid faded into background concentrations in the 1986 grid-area.

The Scintrex MP2 magnetic and Geonics EM16 electromagnetic surveys over the north-central part of the Fern R4175(6) claim have results that concur with those of the soil and geological surveys of the area. Also, the MP2 ground magnetic data is consistant with that from the aeromagnetic survey done over the area by the Geological Survey of Canada (Figures 9A-D and 12).

The MP2 and EM16 surveys are complimentary in outlining four distinct features: contact metamorphism at the margin of the syenitic intrusive at the western margin of the Fern R4175(6) claim, a series of quartz segregations along a linear trend extending northward from the syenite, the mineralized zones of the main workings-area and the mafic basal part of the Irene Volcanic Formation at the eastern boundary of the Fern claim.

The magnetic and electromagnetic surveys confirm the geological interpretation of the setting of mineralization in the main workings-area. The mineralized zones of this area are deposited at the top of a mafic to felsic depositional sequence in the Irene volcanics. All known massive sulphide deposition occurs within a well-defined area in the north-central part of the Fern R4175(6) claim. Both the magnetic and electromagnetic surveys indicate that the mineralized area is bounded by lines 850 m N and 1750 m N. Mineralization extends to an unknown depth.

5.2 Recommendations

The Iva-Fern Property has now been prospected, mapped, soil sampled and tested by magnetic and electromagnetic surveys. The only significant mineral exploration target on the property is the massive sulphide mineralization in the main workings and lower adit areas in the central part of the Fern R4175(6) claim. This mineralization has been located on surface. It remains to be tested to depth.

We recommend that the mineralization in these areas be drilled by a series of holes commencing in the main workings-area and continuing to depth and southward toward the lower adit-area.

Vancouver, British Columbia
December 30, 1986

Lawrence R. Solkoski
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C. Geoffery Spearing, B.Sc.(Eng.)
Consulting Mining Engineer

6.0 REFERENCES

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7.0 ITEMIZED COST STATEMENT FOR 1986 PROGRAM

Wages:			
L.R. Solkoski, B.Sc.			
Consulting Geologist	40.25 days @ $200/day	$ 8050.00	
C.G. Spearing, B.Sc.(Eng.)			
Consulting Mining Engineer			
63.5 days @ $175/day		$11112.50	
Glenn R. Caulfield	28 days @ $150/day	4200.00	
Mervin L. Carson	28 days @ $150/day	4200.00	
David P. Nunuk	29 days @ $150/day	4350.00	
Andrew Biber	33.5 days @ $150/day	5025.00	
		$36937.50	$36,937.50
Transport:			
Bus fare G. Caulfield Vancouver-property		$ 48.75	
Truck rental; 2 3/4 ton trucks			
1.333 months @ $1800/mo. x 2		$ 4800.00	
1 ½ ton truck Vancouver-property return		189.20	
1 double track snow machine 1 mo. @ $1500		1500.00	
Gasoline + oil		1683.85	
Tire Repair		29.98	
		$ 8251.78	$ 8,251.78
Camp:			
1 8-man base camp inc. power and refrig.			
1.333 months @ $1000/month		$ 1333.34	
chain saws + line cutting equipment			
1.333 months @ $900/month		$ 1200.00	
1 Pacific 3C Transit and survey equipment			
1.333 months @ $450/month		$ 600.00	
Camp and Survey supplies inc. naphtha and propane		$ 941.37	
Camp food		2071.59	
Geonics EM16 instrument rental		497.30	
Scintrex MP2 magnetometer rental		1120.55	
		$ 7764.15	$ 7,764.15
Crew Expenses in Transit:			
Hotel		$ 507.18	
Meals in transit		806.28	
		$ 1313.46	$ 1,313.46
Assay:			
Rock assay and soil analysis		$ 1530.05	
Shipping		111.25	
		$ 1641.30	$ 1,641.30
	Balance carried forward		$55,908.19

Balance carried forward		$55,908.19
Communication:		
1 SBX 11A radio; 1.333 mo. @ $300/mo.	$ 400.00	
2 C.B. truck radios	295.40	
SSB frequency charge	312.03	
L.D. telephone	34.60	
	$ 1042.03	$ 1,042.03
Report:		
Typing; 55 hr @ $10/hr	$ 550.00	
Drafting; 259.25 hr @ $25/hr	6481.25	
report assembly: map copy, photocopy and reduction, binding	701.39	
	$ 7732.64	$ 7,732.64
Cost of 1986 program for assessment		$64,682.86

Vancouver, British Columbia
February 18, 1987

John Ostler

John Ostler, M.Sc., P.Geol.
President, Agincourt Explorations Inc.

APPENDIX A

PREPARATION METHODS

Silts, soils, lake bottom sediments (Code 201) :

- Samples are sorted and dried at 50 dege. C for 12-16 hours.
- Dried material is then screened to obtain the -80 mesh component of each sample.
- Coarse material is discarded unless other instructions are received.
- Other mesh sizes are available if required.

PREPARATION METHODS

Rock or Core Assay Preparation (Code 207) :
(Precious Metals)

- Entire sample is crushed in jaw crusher to approx. 3/4".
- Sample is crushed in gyratory cone crusher to approx. 1/8".
- Sample is split in Jones Riffler to 250-350gms.
- Split is ground in rotary pulverizer and screened to -100 mesh and +100 materials is visually checked for metallics.
- If no metallics are present, the +100 is hand ground to -100 and entire sample is rolled.
- If metallics are present, they are assayed separately from the sample.

APPENDIX A

Copper, Lead, Zinc, Silver ppm:

1.0 gm sample is digested with perchloric-nitric acid ($HClO_4$-HNO_3) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper, lead, zinc and silver are determined by atomic absorption techniques. Silver and lead are corrected for background absorption.

Detection limit: Copper, Zinc - 1 ppm
Silver - 0.2 ppm
Lead - 2 ppm

Gold F.A.-A.A. Combo Method ppb:

For low grade samples and geochemical materials, 10 gram samples are fused in litharge, carbonate and siliceous flux with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO_3 and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer.

Detection limit: 5 ppb

APPENDIX A

ASSAY METHODS

Pb % :

A 2 gram sub-sample is digested in hot perchloric-nitric acid mixture for two hours, cooled, then transferred into a 250 ml volumetric flask. Nitric acid is added to the final sample and standard solutions. The solutions are then analyzed on an atomic absorption instrument.

APPENDIX A

ASSAY METHODS

Cu % :

A 2 gram sub-sample is digested in a hot perchloric-nitric acid mixture for two hours, cooled, then transfered into a 250 ml. volumetric flask. Aluminum Chloride is added as an ionization suppressant for Mo. The solutions are then analyzed on an atomic absorption instrument.

APPENDIX A

ASSAY METHODS

Ag, Au (oz/ton) :

Silver and gold analyses are done by standard fire assay techniques. In the sample preparation stage the screens are checked for metallics which, if present, are assayed separately and calculated into the results obtained from the pulp assay.

0.5 assay ton sub samples are fused in litharge, carbonate and silicious fluxes. The lead button containing the precious metals is cupelled in a muffle furnace. The combined Ag & Au is weighed on a microbalance, parted, annealed and again weighed as Au. The difference in the two weighing is Ag.

APPENDIX A

ASSAY METHODS

Zn % :

A 2 gram sub-sample is digested in hot perchloric-nitric acid mixture for two hours, cooled, then transferred into a 250 ml volumetric flask. Nitric acid is added to the final sample and standard solutions. The solutions are then analyzed on an atomic absorption instrument.

APPENDIX B

Chemex Labs Ltd.

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1
Phone: (604) 984-0221
Telex: 043-52597

Analytical Chemists • Geochemists • Registered Assayers

CERTIFICATE OF ANALYSIS

TO : CASSIAR EAST YUKON EXPEDITING

515 - 470 GRANVILLE ST.
VANCOUVER, B.C.
V6C 1V5

ATTN: L.R. SOLKOSKI

** CERT. # : A8619447-001-A
INVOICE # : I8619447
DATE : 6-JAN-87
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R		
2600N-0460W	201	48	11	71	0.5	--	--
2600N-0500W	201	29	8	55	0.4	--	--
2600N-0550W	201	42	9	68	0.2	--	--
2600N-0600W	201	65	8	53	0.6	--	--
2600N-0650W	201	80	13	72	0.7	--	--
2600N-0700W	201	126	13	84	0.5	--	--
2600N-0750W	201	67	7	109	0.6	--	--
2600N-0800W	201	23	10	48	0.4	--	--
2600N-0850W	201	39	22	85	0.4	--	--
2600N-0900W	201	31	128	200	0.4	--	--
2600N-0950W	201	30	19	61	0.5	--	--
2600N-1000W	201	22	13	54	0.5	--	--
2600N-1050W	201	37	8	57	0.2	--	--
2600N-1100W	201	29	6	53	0.2	--	--
2600N-1150W	201	29	9	60	0.2	--	--
2600N-1200W	201	35	8	64	0.2	--	--
2700N-0500W	201	49	6	65	0.6	--	--
2700N-0550W	201	100	5	93	0.3	--	--
2700N-0600W	201	91	3	91	0.1	--	--
2700N-0650W	201	90	6	71	0.4	--	--
2700N-0700W	201	161	34	104	0.5	--	--
2700N-0750W	201	43	26	76	0.5	--	--
2700N-0800W	201	48	11	92	0.5	--	--
2700N-0850W	201	106	10	74	0.3	--	--
2700N-0900W	201	66	10	83	0.2	--	--
2700N-0950W	201	21	10	41	0.8	--	--
2700N-1000W	201	49	9	79	0.2	--	--
2700N-1050W	201	54	4	80	0.4	--	--
2700N-1100W	201	20	7	32	0.1	--	--
2700N-1150W	201	15	14	45	0.1	--	--
2700N-1200W	201	12	11	55	0.1	--	--
2800N-0460W	201	32	8	64	0.1	--	--
2800N-0500W	201	54	5	71	0.1	--	--
2800N-0550W	201	62	5	72	0.1	--	--
2800N-0600W	201	66	6	75	0.1	--	--
2800N-0650W	201	25	7	53	0.2	--	--
2800N-0700W	201	100	34	89	0.6	--	--
2800N-0750W	201	88	44	161	1.0	--	--
2800N-0800W	201	85	12	78	0.6	--	--
2800N-0850W	201	53	11	77	0.1	--	--

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APPENDIX B

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Canada V7J 2C1
Phone: (604) 984-0221
Telex: 043-52597

CERTIFICATE OF ANALYSIS

TO : CASSIAR EAST YUKON EXPEDITING
515 - 470 GRANVILLE ST.
VANCOUVER, B.C.
V6C 1V5

ATTN: L.R. SOLKOSKI

** CERT. # : A8619447-002-A
INVOICE # : I8619447
DATE : 6-JAN-87
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R		
2800N-0900W	201	44	11	79	0.2	--	--
2800N-0950W	201	34	9	76	0.1	--	--
2800N-1000W	201	21	9	52	0.1	--	--
2800N-1050W	201	19	7	44	0.2	--	--
2800N-1100W	201	49	5	70	0.1	--	--
2800N-1150W	201	39	9	51	0.4	--	--
2800N-1200W	201	30	7	64	0.3	--	--
2900N-0460W	201	25	10	60	0.1	--	--
2900N-0500W	201	44	8	55	0.4	--	--
2900N-0550W	201	50	6	60	0.1	--	--
2900N-0600W	201	48	6	69	0.1	--	--
2900N-0650W	201	53	5	60	0.1	--	--
2900N-0700W	201	28	11	70	0.2	--	--
2900N-0750W	201	142	19	111	0.4	--	--
2900N-0800W	201	49	3	59	0.1	--	--
2900N-0850W	201	18	6	43	0.2	--	--
2900N-0900W	201	43	8	67	0.1	--	--
2900N-0950W	201	16	9	47	0.3	--	--
2900N-1000W	201	55	8	71	0.1	--	--
2900N-1050W	201	34	15	98	0.2	--	--
2900N-1100W	201	46	44	156	0.6	--	--
2900N-1150W	201	49	33	103	0.5	--	--
2900N-1200W	201	83	13	66	0.3	--	--
3000N-0460W	201	42	8	55	0.1	--	--
3000N-0500W	201	52	5	63	0.1	--	--
3000N-0550W	201	30	5	19	0.1	--	--
3000N-0600W	201	57	7	50	0.1	--	--
3000N-0650W	201	36	7	47	0.4	--	--
3000N-0700W	201	56	6	64	0.1	--	--
3000N-0750W	201	50	5	59	0.6	--	--
3000N-0800W	201	33	6	60	0.4	--	--
3000N-0850W	201	97	7	91	0.1	--	--
3000N-0900W	201	46	4	73	0.3	--	--
3000N-0950W	201	58	9	81	0.3	--	--
3000N-1000W	201	48	15	57	0.4	--	--
3000N-1050W	201	42	8	77	1.1	--	--
3000N-1100W	201	54	7	77	0.3	--	--
3000N-1150W	201	44	11	71	0.1	--	--
3000N-1200W	201	25	9	79	0.5	--	--
3100N-0460W	201	88	7	81	0.1	--	--

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LR Solkoski [illegible]

APPENDIX B

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CERTIFICATE OF ANALYSIS

TO : CASSIAR EAST YUKON EXPEDITING

515 - 470 GRANVILLE ST.
VANCOUVER, B.C.
V6C 1V5

ATTN: L.R. SOLKOSKI

** CERT. # : A8619447-003-A
INVOICE # : I8619447
DATE : 6-JAN-87
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R		
3100N-0500W	201	20	10	40	0.1	--	--
3100N-0550W	201	55	6	60	0.1	--	--
3100N-0600W	201	63	11	73	0.1	--	--
3100N-0650W	201	54	15	69	0.1	--	--
3100N-0700W	201	83	6	74	0.1	--	--
3100N-0750W	201	70	3	83	0.3	--	--
3100N-0800W	201	44	3	68	0.2	--	--
3100N-0850W	201	43	5	59	0.1	--	--
3100N-0900W	201	32	4	70	0.7	--	--
3100N-0950W	201	59	4	83	0.2	--	--
3100N-1000W	201	60	4	71	0.1	--	--
3100N-1050W	201	58	4	58	0.1	--	--
3100N-1100W	201	35	5	43	0.1	--	--
3100N-1150W	201	35	11	85	0.2	--	--
3100N-1200W	201	16	9	49	0.1	--	--
3200N-0460W	201	36	7	49	0.1	--	--
3200N-0500W	201	71	7	75	0.1	--	--
3200N-0550W	201	71	23	114	0.3	--	--
3200N-0600W	201	56	16	98	0.1	--	--
3200N-0650W	201	60	16	95	0.1	--	--
3200N-0700W	201	59	7	73	0.1	--	--
3200N-0750W	201	17	11	40	0.7	--	--
3200N-0800W	201	27	9	53	0.4	--	--
3200N-0850W	201	36	5	56	0.2	--	--
3200N-0900W	201	52	4	51	0.2	--	--
3200N-0950W	201	48	6	67	0.1	--	--
3200N-1000W	201	24	6	64	0.1	--	--
3200N-1050W	201	26	6	44	1.1	--	--
3200N-1100W	201	14	1	23	0.1	--	--
3200N-1150W	201	27	13	87	0.1	--	--
3200N-1200W	201	25	14	97	0.1	--	--
3300N-0460W	201	18	9	29	0.1	--	--
3300N-0500W	201	33	14	76	0.2	--	--
3300N-0550W	201	38	8	77	0.1	--	--
3300N-0600W	201	32	8	96	0.3	--	--
3300N-0650W	201	49	5	73	0.1	--	--
3300N-0700W	201	31	5	84	0.1	--	--
3300N-0750W	201	61	6	72	0.5	--	--
3300N-0800W	201	34	8	53	0.2	--	--
3300N-0850W	201	81	4	74	0.3	--	--

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APPENDIX B

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CERTIFICATE OF ANALYSIS

TO : CASSIAR EAST YUKON EXPEDITING

515 - 470 GRANVILLE ST.
VANCOUVER, B.C.
V6C 1V5

ATTN: L.R. SOLKOSKI

** CERT. # : A8619447-004-A
INVOICE # : I8619447
DATE : 6-JAN-87
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R		
3300N-0900W	201	103	8	94	0.1	--	--
3300N-0950W	201	66	13	79	0.2	--	--
3300N-1000W	201	30	9	53	0.3	--	--
3300N-1050W	201	44	11	59	0.2	--	--
3300N-1100W	201	22	7	57	0.1	--	--
3300N-1150W	201	11	11	53	0.2	--	--
3300N-1200W	201	30	17	86	0.2	--	--

V01 REV. 5/86

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LRSolkoski Manning

APPENDIX C

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212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1

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CERTIFICATE OF ASSAY

TO : AGINCOURT EXPLORATIONS INC.

515 - 470 GRANVILLE ST.
VANCOUVER, B.C.
V6C 1V5

ATTN: L. SOLKOSKI

CERT. # : A8619859-001-A
INVOICE # : I8619859
DATE : 6-JAN-87
P.O. # : NONE
IVA-FERN PROJ.

Sample description	Prep code	Cu %	Pb %	Zn %	Ag FA oz/T	Au FA oz/T	
LS-F-1-86	207	<0.01	<0.01	0.01	<0.01	<0.002	--
LS-F-2-86	207	0.05	0.41	<0.01	0.15	<0.002	--
LS-F-3-86	207	<0.01	<0.01	0.01	<0.01	<0.002	--
LS-F-4-86	207	<0.01	<0.01	<0.01	<0.01	<0.002	--
LS-F-5-86	207	0.07	0.16	<0.01	0.26	<0.002	--
LS-F-6-86	207	0.07	0.16	<0.01	0.09	<0.002	--
LS-F2-1-86	207	<0.01	<0.01	<0.01	<0.01	<0.002	--
LS-F3-1-86	207	<0.01	<0.01	<0.01	<0.01	<0.002	--
LS-F3-C1-86	207	<0.01	<0.01	0.01	<0.01	<0.002	--
LS-F3-SCH-1-86	207	<0.01	<0.01	<0.01	<0.01	<0.002	--
LS-F3-SHC-1-86	207	<0.01	<0.01	0.01	0.01	<0.002	--
ZONE 1	207	<0.01	<0.01	0.01	<0.01	<0.002	--
ZONE 1A	207	0.36	<0.01	<0.01	0.22	<0.002	--
ZONE 1ATOM	207	0.19	<0.01	<0.01	0.11	<0.002	--
ZONE 2	207	0.05	0.02	<0.01	0.04	<0.002	--
ZONE 2A	207	<0.01	<0.01	0.01	0.01	<0.002	--
ZONE 3	207	<0.01	<0.01	0.01	0.03	<0.002	--
ZONE 4	207	0.11	<0.01	<0.01	0.09	<0.002	--
ZONE 5	207	0.20	<0.01	<0.01	0.09	<0.002	--
ZONE 6	207	0.11	<0.01	<0.01	0.20	<0.002	--
ZONE 7	207	0.65	<0.01	<0.01	0.38	<0.002	--
ZONE 8	207	0.11	<0.01	0.01	0.07	<0.002	--
ZONE 9	207	1.08	<0.01	0.01	0.73	<0.002	--
ZONE 10	207	0.08	<0.01	<0.01	0.04	<0.002	--

V01 REV 5/86

Registered Assayer, Province of British Columbia

APPENDIX Ci

GRID LOCATIONS OF ASSAYS

Sample No. *	Latitude	Longitude
LSF-1-86	1840.77 m N	592.16 m W
LSF-2-86	1875.52 m N	666.66 m W
LSF-3-86	1979.42 m N	663.41 m W
LSF-4-86	1951.42 m N	639.16 m W
LSF-5-86	1875.52 m N	666.66 m W
LSF-6-86	1957.42 m N	609.66 m W
LSF2-1-86	90.00 m S	910.00 m W
LSF3-1-86	2740.00 m N	760.00 m W
LSF3-C1-86	3684.00 m N	350.00 m E
LSF3-SCH-1-86	3705.00 m N	410.00 m E
Zone 1	875.00 m S	325.00 m W
Zone 1A	870.00 m S	305.00 m W
Zone 2	885.00 m S	353.00 m W
Zone 2A	897.50 m S	395.00 m W
Zone 3	909.00 m S	492.00 m W
Zone 4	912.50 m S	441.00 m W
Zone 5	920.00 m S	460.00 m W
Zone 6	942.00 m S	488.00 m W
Zone 7	947.50 m S	500.00 m W
Zone 8	952.50 m S	520.00 m W
Zone 9	960.00 m S	546.00 m W
Zone 10	965.00 m S	557.00 m W

* for assays of these samples, see Appendix C

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 800 m North				
900	57507	-0.17		57506.83
880	57439	-0.17		57438.83
860	57506	-0.17		57545.83
840	57476	-0.17		57475.83
820	57490	-0.17		57489.83
800	57501	-0.17		57500.83
780	57476	-0.17		57475.83
760	57496	-0.17		57495.83
740	57538	-0.17		57537.83
720	57532	-0.17		57531.83
700	57526	-0.17		57525.83
680	57538	-0.17		57537.83
660	57500	-0.17		57499.83
640	57536	-0.17		57535.83
620	57580	-0.17		57579.83
600	57546	+0.19		57546.19
580	57628	+0.19		57628.19
560	57513	+0.19		57573.19
540	57486	+0.19		57486.19
520	57417	+0.19		57417.19
500	57534	+0.19		57534.19
480	57530	+0.19		57530.19
460	57559	+0.19		57559.19
440	57595	+0.19		57595.19
420	57619	+0.19		57619.19
400	57619	+0.19		57619.19
380	57582	+0.19		57582.19
360	57604	+0.19		57604.19
340	57712	+0.19		57712.19
320	57617	+0.19		57617.19
300	57640	+0.19		57640.19
Line 850 m North				
900	57415	-0.17		57414.83
880	57463	-0.17		57462.83
860	57483	-0.17		57482.83
840	57503	-0.17		57502.83
820	57491	-0.17		57490.83
800	57455	-0.17		57454.83
780	57485	-0.17		57484.83
760	57479	-0.17		57478.83
740	57549	-0.17		57548.83
720	57540	-0.17		57539.83
700	57546	-0.17		57545.83

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 850 m North continued				
680	57556	-0.17		57555.83
660	57533	-0.17		57532.83
640	57545	-0.17		57544.83
620	57556	-0.17		57555.83
600	57567	+0.19		57567.19
580	57464	+0.19		57464.19
560	57679	+0.19		57679.19
540	57554	+0.19		57554.19
520	57508	+0.19		57508.19
500	57563	+0.19		57563.19
480	57504	+0.19		57504.19
460	57515	+0.19		57515.19
440	57600	+0.19		57600.19
420	57582	+0.19		57582.19
400	57623	+0.19		57623.19
380	57664	+0.19		57664.19
360	57600	+0.19		57600.19
340	57911	+0.19		57911.19
320	57815	+0.19		57815.19
300	57564	+0.19		57564.19
Line 900 m North				
900	57548	-0.67		57547.33
880	57445	-0.67		57444.33
860	57471	-0.67		57570.33
840	57450	-0.67		57449.33
820	57497	-0.67		57496.33
800	57493	-0.67		57492.33
780	57482	-0.67		57481.33
760	57490	-0.67		57489.33
740	57490	-0.67		57489.33
720	57519	-0.67		57518.33
700	57505	-0.67		57504.33
680	57529	-0.67		57528.33
660	57516	-0.67		57515.33
640	57515	-0.67		57514.33
620	57526	-0.67		57525.33
600	57553	-0.13		57552.87
580	57569	-0.13		57568.87

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 900 m North continued				
560	57610	-0.13		57609.87
540	57680	-0.13		57679.87
520	57533	-0.13		57532.87
500	57516	-0.13		57515.87
480	57543	-0.13		57542.87
460	57550	-0.13		57549.87
440	57542	-0.13		57541.87
420	57559	-0.13		57558.87
400	57604	-0.13		57603.87
380	57600	-0.13		57599.87
360	57611	-0.13		57610.87
340	57560	-0.13		57559.87
320	57686	-0.13		57685.87
300	57610	-0.13		57609.87
Line 950 m North				
900	57404	-0.67		57403.33
880	57460	-0.67		57459.33
860	57474	-0.67		57473.33
840	57461	-0.67		57460.33
820	57498	-0.67		57497.33
800	57480	-0.67		57479.33
780	57485	-0.67		57484.33
760	57511	-0.67		57510.33
740	57514	-0.67		57513.33
720	57492	-0.67		57491.33
700	57496	-0.67		57495.33
680	57678	-0.67		57677.33
660	57557	-0.67		57556.33
640	57574	-0.67		57573.33
620	57600	-0.67		57599.33
600	57530	-0.13		57529.87
580	57581	-0.13		57580.87
560	57622	-0.13		57621.87
540	57615	-0.13		57614.87
520	57597	-0.13		57596.87
500	57739	-0.13		57738.87
480	57488	-0.13		57487.87
460	57502	-0.13		57501.87
440	57523	-0.13		57522.87
420	57530	-0.13		57529.87

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitute m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 950 m North continued				
400	57571	-0.13		57570.87
380	57565	-0.13		57564.87
360	57596	-0.13		57595.87
340	57582	-0.13		57581.87
320	57589	-0.13		57588.87
300	57602	-0.13		57601.87
Line 1000 m North				
900	57470	-0.40		57469.60
880	57510	-0.40		57509.60
860	57497	-0.40		57496.60
840	57502	-0.40		57501.60
820	57478	-0.40		57477.60
800	57485	-0.40		57484.60
780	57503	-0.40		57502.60
760	57480	-0.40		57479.60
740	57468	-0.40		57467.60
720	57496	-0.40		57495.60
700	57482	-0.40		57481.60
680	57540	-0.40		57539.60
660	57451	-0.40		57450.60
640	57509	-0.40		57508.60
620	57535	-0.40		57534.60
600	57569	+1.03		57570.03
580	57551	+1.03		57552.03
560	57603	+1.03		57604.03
540	57658	+1.03		57659.03
520	57638	+1.03		57639.03
500	57741	+1.03		57742.03
480	57827	+1.03		57828.03
460	57512	+1.03		57513.03
440	57537	+1.03		57538.03
420	57568	+1.03		57569.03
400	57567	+1.03		57568.03
380	57586	+1.03		57587.03
360	57614	+1.03		57615.03
340	57645	+1.03		57646.03
320	57678	+1.03		57679.03
300	57720	+1.03		57721.03

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1100 m North continued				
760	57466	-0.23	-0.60	57465.17
740	57488	-0.23	-0.60	57487.17
720	57469	-0.23	-0.60	57468.17
700	57505	-0.23	-0.60	57504 17
680	57485	-0.23	-0.60	57484.17
660	57490	-0.23	-0.60	57489.17
640	57507	-0.23	-0.60	57506.17
620	57517	-0.23	-0.60	57516.17
600	57562	+0.03	-0.38	57561.65
580	57593	+0.03	-0.38	57592.65
560	57612	+0.03	-0.38	57611.65
540	57630	+0.03	-0.38	57629.65
520	57638	+0.03	-0.38	57637.65
500	57641	+0.03	-0.38	57640.65
480	57636	+0.03	-0.38	57635.65
460	57570	+0.03	-0.38	57569.65
440	57584	+0.03	-0.38	57583.65
420	57544	+0.03	-0.38	57543.65
400	57605	+0.03	-0.38	57604.65
380	57602	+0.03	-0.38	57601.65
360	57638	+0.03	-0.38	57637.65
340	57664	+0.03	-0.38	57663.65
320	57697	+0.03	-0.38	57696.65
300	57714	+0.03	-0.38	57713.65
Line 1150 m North				
900	57765	-0.23	-0.60	57764.17
880	57777	-0.23	-0.60	57776.17
860	57946	-0.23	-0.60	57945.17
840	57944	-0.23	-0.60	57943.17
820	57924	-0.23	-0.60	57923.17
800	57653	-0.23	-0.60	57652.17
780	57745	-0.23	-0.60	57744.17
760	57567	-0.23	-0.60	57566.17
740	57608	-0.23	-0.60	57607.17
720	57575	-0.23	-0.60	57574.17
700	57626	-0.23	-0.60	57625.17
680	57616	-0.23	-0.60	57615.17
660	57494	-0.23	-0.60	57493.17

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1050 m North				
900	57539	-0.40		57538.60
880	57514	-0.40		57513.60
860	57545	-0.40		57544.60
840	57501	-0.40		57500.60
820	57527	-0.40		57526.60
800	57522	-0.40		57521.60
780	57532	-0.40		57531.60
760	57563	-0.40		57562.60
740	57504	-0.40		57503.60
720	57510	-0.40		57509.60
700	57513	-0.40		57512.60
680	57519	-0.40		57518.60
660	57514	-0.40		57513.60
640	57557	-0.40		57556.60
620	57550	-0.40		57549.60
600	57544	+1.03		57545.03
580	57563	+1.03		57564.03
560	57563	+1.03		57564.03
540	57617	+1.03		57618.03
520	57608	+1.03		57609.03
500	57666	+1.03		57667.03
480	57755	+1.03		57756.03
460	57923	+1.03		57924.03
440	57503	+1.03		57504.03
420	57496	+1.03		57497.03
400	57525	+1.03		57526.03
380	57585	+1.03		57586.03
360	57606	+1.03		57607.03
340	57634	+1.03		5763503
320	57616	+1.03		57617.03
300	57668	+1.03		57669.03
Line 1100 m North				
900	58800	-0.23	-0.60	58799.17
880	57795	-0.23	-0.60	57794.17
860	57629	-0.23	-0.60	57628.17
840	57628	-0.23	-0.60	57627.17
820	57562	-0.23	-0.60	57561.17
800	57535	-0.23	-0.60	57534.17
780	57466	-0.23	-0.60	57465.17

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1150 m North continued				
640	57542	-0.23	-0.60	57541.17
620	57540	-0.23	-0.60	57539.17
600	57545	+0.03	-0.38	57544.65
580	57553	+0.03	-0.38	57552.65
560	57560	+0.03	-0.38	57559.65
540	57585	+0.03	-0.38	57584.65
520	57589	+0.03	-0.38	57588.65
500	57612	+0.03	-0.38	57611.65
480	57665	+0.03	-0.38	57664.65
460	57572	+0.03	-0.38	57571.65
440	58110	+0.03	-0.38	58109.65
420	57484	+0.03	-0.38	57483.65
400	57562	+0.03	-0.38	57561.65
380	57610	+0.03	-0.38	57609.65
360	57613	+0.03	-0.38	57612.65
340	57680	+0.03	-0.38	57679.65
320	57734	+0.03	-0.38	57733.65
300	57968	+0.03	-0.38	57967.65
Line 1200 m North				
900	57870	-1.03	-0.40	57868.57
880	58444	-1.03	-0.40	58442.57
860	57779	-1.03	-0.40	57777.57
840	57518	-1.03	-0.40	57516.57
820	57506	-1.03	-0.40	57504.57
800	57544	-1.03	-0.40	57542.57
780	57681	-1.03	-0.40	57679.57
760	57521	-1.03	-0.40	57519.57
740	57515	-1.03	-0.40	57513.57
720	57493	-1.03	-0.40	57491.57
700	57475	-1.03	-0.40	57473.57
680	57468	-1.03	-0.40	57466.57
660	57488	-1.03	-0.40	57486.57
640	57498	-1.03	-0.40	57496.57
620	57511	-1.03	-0.40	57509.57
600	57554		-0.53	57553.47
580	57580		-0.53	57579.47
560	57587		-0.53	57586.47

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1200 m North continued				
540	57626		-0.53	57625.47
520	57670		-0.53	57669.47
500	57590		-0.53	57589.47
480	57656		-0.53	57655.47
460	57655		-0.53	57654.47
440	57567		-0.53	57566.47
420	57560		-0.53	57559.47
400	57582		-0.53	57581.47
380	57635		-0.53	57634.47
360	57676		-0.53	57675.47
340	57684		-0.53	57683.47
320	57795		-0.53	57794.47
300	57783		-0.53	57782.47
Line 1250 m North				
900	58086	-1.03	-0.40	58084.57
880	57397	-1.03	-0.40	57395.57
860	57386	-1.03	-0.40	57384.57
840	57446	-1.03	-0.40	57444.57
820	57434	-1.03	-0.40	57432.57
800	57490	-1.03	-0.40	57488.57
780	57534	-1.03	-0.40	57532.57
760	57489	-1.03	-0.40	57487.57
740	57489	-1.03	-0.40	57487.57
720	57513	-1.03	-0.40	57511.57
700	57458	-1.03	-0.40	57456.57
680	57540	-1.03	-0.40	57538.57
660	57526	-1.03	-0.40	57524.57
640	57533	-1.03	-0.40	57531.57
620	57557	-1.03	-0.40	57555.57
600	57506		-0.53	57505.47
580	57538		-0.53	57537.47
560	57559		-0.53	57558.47
540	57569		-0.53	57568.47
520	57600		-0.53	57599.47
500	57576		-0.53	57575.47
480	57674		-0.53	57673.47
460	57576		-0.53	57575.47
440	57565		-0.53	57564.47
420	57666		-0.53	57665.47

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1250 m North continued				
400	57599		-0.53	57598.47
380	57522		-0.53	57521.47
360	57588		-0.53	57587.47
340	57648		-0.53	57647.47
320	57663		-0.53	57662.47
300	57672		-0.53	57671.47
Line 1300 m North				
900	57366	+0.13	-0.27	57365.86
880	57390	+0.13	-0.27	57389.86
860	57435	+0.13	-0.27	57434.86
840	57404	+0.13	-0.27	57403.86
820	57400	+0.13	-0.27	57399.86
800	57430	+0.13	-0.27	57429.86
780	57433	+0.13	-0.27	57432.86
760	57437	+0.13	-0.27	57436.86
740	57471	+0.13	-0.27	57470.86
720	57468	+0.13	-0.27	57467.86
700	57474	+0.13	-0.27	57473.86
680	57479	+0.13	-0.27	57478.86
660	57487	+0.13	-0.27	57486.86
640	57541	+0.13	-0.27	57540.86
620	57510	+0.13	-0.27	57509.86
600	57564	-0.47	-0.81	57562.72
580	57570	-0.47	-0.81	57568.72
560	57597	-0.47	-0.81	57595.72
540	57617	-0.47	-0.81	57615.72
520	57646	-0.47	-0.81	57644.72
500	57629	-0.47	-0.81	57627.72
480	57634	-0.47	-0.81	57632.72
460	57637	-0.47	-0.81	57635.72
440	57630	-0.47	-0.81	57628.72
420	57628	-0.47	-0.81	57626.72
400	57594	-0.47	-0.81	57592.72
380	57570	-0.47	-0.81	57568.72
360	57591	-0.47	-0.81	57589.72
340	57600	-0.47	-0.81	57598.72

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1300 m North continued				
320	57630	-0.47	-0.81	57628.72
300	57757	-0.47	-0.81	57755.72
Line 1350 m North				
900	57556	+0.13	-0.27	57555.86
880	57528	+0.13	-0.27	57527.86
860	57472	+0.13	-0.27	57471.86
840	57525	+0.13	-0.27	57524.86
820	57546	+0.13	-0.27	57545.86
800	57472	+0.13	-0.27	57471.86
780	57454	+0.13	-0.27	57453.86
760	57501	+0.13	-0.27	57500.86
740	57496	+0.13	-0.27	57495.86
720	57504	+0.13	-0.27	57503.86
700	57512	+0.13	-0.27	57511.86
680	57525	+0.13	-0.27	57524.86
660	57542	+0.13	-0.27	57541.86
640	57552	+0.13	-0.27	57551.86
620	57519	+0.13	-0.27	57518.86
600	57466	-0.47	-0.81	57464.72
580	57536	-0.47	-0.81	57534.72
560	57545	-0.47	-0.81	57543.72
540	57576	-0.47	-0.81	57574.72
520	57598	-0.47	-0.81	57596.72
500	57650	-0.47	-0.81	57648.72
480	57631	-0.47	-0.81	57629.72
460	57586	-0.47	-0.81	57584.72
440	57604	-0.47	-0.81	57602.72
420	57700	-0.47	-0.81	57698.72
400	57577	-0.47	-0.81	57575.72
380	57542	-0.47	-0.81	57540.72
360	57668	-0.47	-0.81	57666.72
340	57575	-0.47	-0.81	57573.72
320	57573	-0.47	-0.81	57571.72
300	57688	-0.47	-0.81	57686.72

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Scintrex MP2 Magnetometer Survey

Data and Calculations Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1400 m North				
900	58466	-0.30		58465.70
880	57995	-0.30		57994.70
860	57762	-0.30		57761.70
840	57515	-0.30		57514.70
820	57446	-0.30		57445.70
800	57422	-0.30		57421.70
780	57412	-0.30		57411.70
760	57443	-0.30		57442.70
740	57576	-0.30		57475.70
720	57483	-0.30		57482.70
700	57499	-0.30		57498.70
680	57494	-0.30		57493.70
660	57515	-0.30		57514.70
640	57529	-0.30		57528.70
620	57553	-0.30		57552.70
600	57521	-0.44		57520.56
580	57574	-0.44		57573.56
560	57523	-0.44		57522.56
540	57545	-0.44		57544.56
520	57589	-0.44		57588.56
500	57434	-0.44		57433.56
480	57592	-0.44		57591.56
460	57634	-0.44		57633.56
440	57688	-0.44		57687.56
420	57657	-0.44		57656.56
400	57565	-0.44		57654.56
380	57358	-0.44		57357.56
360	57607	-0.44		57606.56
340	57531	-0.44		57530.56
320	57588	-0.44		57587.56
300	57630	-0.44		57629.56
Line 1450 m North				
900	58531	-0.30		58530.70
880	58380	-0.30		58379.70
860	58902	-0.30		58901.70
840	57682	-0.30		57681.70
820	57490	-0.30		57489.70
800	57418	-0.30		57417.70
780	57392	-0.30		57391.70

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Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1450 m North continued				
760	57436	-0.30		57435.70
740	57401	-0.30		57400.70
720	57436	-0.30		57435.70
700	57456	-0.30		57455.70
680	57491	-0.30		57490.70
660	57485	-0.30		57484.70
640	57496	-0.30		57495.70
620	57492	-0.30		57491.70
600	57550	-0.44		57549.56
580	57566	-0.44		57565.56
560	57555	-0.44		57554.56
540	57584	-0.44		57583.56
520	57588	-0.44		57587.56
500	57632	-0.44		57631.56
480	57627	-0.44		57626.56
460	57707	-0.44		57706.56
440	57721	-0.44		57720.56
420	57700	-0.44		57699.56
400	57716	-0.44		57715.56
380	57518	-0.44		57517.56
360	57580	-0.44		57579.56
340	57737	-0.44		57736.56
320	57589	-0.44		57588.56
300	57599	-0.44		57598.56
Line 1500 m North				
900	58616	-0.17		58615.83
880	58350	-0.17		57349.83
860	58364	-0.17		58363.83
840	58674	-0.17		58673.83
820	57421	-0.17		57420.83
800	57390	-0.17		57389.83
780	57403	-0.17		57402.83
760	57417	-0.17		57416.83
740	57439	-0.17		57438.83
720	57460	-0.17		57459.83
700	57493	-0.17		57492.83
680	57505	-0.17		57504.83
660	57510	-0.17		57509.83
640	57529	-0.17		57528.83
620	57529	-0.17		57528.83

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Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1500 m North continued				
600	57511	+0.06		57511.06
580	57541	+0.06		57541.06
560	57530	+0.06		57530.06
540	57565	+0.06		57565.06
520	57570	+0.06		57570.06
500	57608	+0.06		57608.06
480	57580	+0.06		57580.06
460	57621	+0.06		57621.06
440	57555	+0.06		57555.06
420	57686	+0.06		57686.06
400	57737	+0.06		57737.06
380	57616	+0.06		57616.06
360	57545	+0.06		57545.06
340	57582	+0.06		57582.06
320	57565	+0.06		57565.06
300	57570	+0.06		57570.06
Line 1550 m North				
900	57445	-0.17		57444.83
880	57444	-0.17		57443.83
860	57610	-0.17		57609.83
840	57293	-0.17		57292.83
820	57395	-0.17		57394.83
800	57510	-0.17		57509.83
780	57428	-0.17		57427.83
760	57399	-0.17		57398.83
740	57418	-0.17		57417.83
720	57436	-0.17		57435.83
700	57453	-0.17		57452.83
680	57474	-0.17		57473.83
660	57481	-0.17		57480.83
640	57487	-0.17		57486.83
620	57501	-0.17		57500.83
600	57532	+0.06		57532.06
580	57532	+0.06		57532.06
560	57554	+0.06		57554.06
540	57587	+0.06		57587.06
520	57600	+0.06		57600.06
500	57624	+0.06		57624.06

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1550 m North continued				
480	57620	+0.06		57620.06
460	57654	+0.06		57654.06
440	57692	+0.06		57692.06
420	57737	+0.06		57737.06
400	57732	+0.06		57732.06
380	57707	+0.06		57707.06
360	57504	+0.06		57504.06
340	57541	+0.06		57541.06
320	57579	+0.06		57579.06
300	57604	+0.06		57604.06
Line 1600 m North				
900	57614	-0.07	+0.07	57614.00
880	57728	-0.07	+0.07	57728.00
860	57627	-0.07	+0.07	57627.00
840	57738	-0.07	+0.07	57738.00
820	57581	-0.07	+0.07	57581.00
800	57524	-0.07	+0.07	57524.00
780	57461	-0.07	+0.07	57461.00
760	57458	-0.07	+0.07	57458.00
740	57466	-0.07	+0.07	57466.00
720	57495	-0.07	+0.07	57495.00
700	57508	-0.07	+0.07	57508.00
680	57517	-0.07	+0.07	57517.00
660	57526	-0.07	+0.07	57526.00
640	57521	-0.07	+0.07	57521.00
620	57551	-0.07	+0.07	57551.00
600	57505	+0.53		57505.53
580	57524	+0.53		57524.53
560	57518	+0.53		57518.53
540	57578	+0.53		57578.53
520	57590	+0.53		57590.53
500	57604	+0.53		57604.53
480	57566	+0.53		57566.53
460	57620	+0.53		57620.53
440	57674	+0.53		57674.53
420	57658	+0.53		57658.53
400	57694	+0.53		57694.53
380	57568	+0.53		57568.53

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1600 m North continued				
360	57472	+0.53		57472.53
340	57530	+0.53		57530.53
320	57542	+0.53		57542.53
300	57608	+0.53		57608.53
Line 1650 m North				
900	57719	-0.07	+0.07	57719.00
880	58536	-0.07	+0.07	58536.00
860	58844	-0.07	+0.07	58844.00
840	58575	-0.07	+0.07	58575.00
820	57861	-0.07	+0.07	57861.00
800	57429	-0.07	+0.07	57429.00
780	57383	-0.07	+0.07	57383.00
760	57404	-0.07	+0.07	57404.00
740	57429	-0.07	+0.07	57429.00
720	57446	-0.07	+0.07	57446.00
700	57463	-0.07	+0.07	57463.00
680	57489	-0.07	+0.07	57489.00
660	57496	-0.07	+0.07	57496.00
640	57501	-0.07	+0.07	57501.00
620	57512	-0.07	+0.07	57512.00
600	57551	+0.53		57551.53
580	57560	+0.53		57560.53
560	57571	+0.53		57571.53
540	57534	+0.53		57534.53
520	57553	+0.53		57553.53
500	57616	+0.53		57616.53
480	57619	+0.53		57619.53
460	57644	+0.53		57644.53
440	57682	+0.53		57682.53
420	57700	+0.53		57700.53
400	57712	+0.53		57712.53
380	57502	+0.53		57502.53
360	57555	+0.53		57555.53
340	57582	+0.53		57582.53
320	57615	+0.53		57615.53
300	57604	+0.53		57604.53

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1700 m North				
900	57359	+0.20		57359.20
880	57468	+0.20		57468.20
860	57945	+0.20		57945.20
840	57464	+0.20		57464.20
820	57319	+0.20		57319.20
800	57365	+0.20		57365.20
780	57409	+0.20		57409.20
760	57440	+0.20		57440.20
740	57470	+0.20		57470.20
720	57482	+0.20		57482.20
700	57509	+0.20		57509.20
680	57503	+0.20		57503.20
660	57506	+0.20		57506.20
640	57516	+0.20		57516.20
620	57541	+0.20		57541.20
600	57550	+0.13		57550.13
580	57571	+0.13		57571.13
560	57580	+0.13		57580.13
540	57584	+0.13		57584.13
520	57643	+0.13		57643.13
500	57624	+0.13		57624.13
480	57629	+0.13		57629.13
460	57667	+0.13		57667.13
440	57682	+0.13		57682.13
420	57700	+0.13		57700.13
400	58008	+0.13		58008.13
380	57540	+0.13		57540.13
360	57562	+0.13		57562.13
340	57568	+0.13		57568.13
320	57581	+0.13		57581.13
300	57621	+0.13		57621.13
Line 1750 m North				
900	57330	+0.20		57330.20
880	57342	+0.20		57342.20
860	57377	+0.20		57377.20
840	57380	+0.20		57380.20
820	57413	+0.20		57413.20
800	57433	+0.20		57433.20

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1750 m North continued				
780	57464	+0.20		57464.20
760	57471	+0.20		57471.20
740	57459	+0.20		57459.20
720	57463	+0.20		57463.20
700	57503	+0.20		57503.20
680	57509	+0.20		57509.20
660	57508	+0.20		57508.20
640	57527	+0.20		57527.20
620	57518	+0.20		57518.20
600	57531	+0.13		57531.13
580	57566	+0.13		57566.13
560	57583	+0.13		57583.13
540	57630	+0.13		57630.13
520	57612	+0.13		57612.13
500	57622	+0.13		57622.13
480	57616	+0.13		57616.13
460	57621	+0.13		57621.13
440	57654	+0.13		57654.13
420	57720	+0.13		57720.13
400	57761	+0.13		57761.13
380	57966	+0.13		57966.13
360	57521	+0.13		57521.13
340	57591	+0.13		57591.13
320	57606	+0.13		57606.13
300	57617	+0.13		57617.13
Line 1800 m North				
900	57432	-0.23		57431.77
880	57443	-0.23		57442.77
860	57450	-0.23		57449.77
840	57440	-0.23		57439.77
820	57445	-0.23		57444.77
800	57440	-0.23		57439.77
780	57460	-0.23		57459.77
760	57479	-0.23		57478.77
740	57466	-0.23		57465.77
720	57479	-0.23		57478.77
700	57485	-0.23		57484.77
680	57507	-0.23		57506.77

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Scintrex MP2 Magnetometer Survey

Data and Calculations Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1800 m North continued				
660	57492	-0.23		57491.77
640	57521	-0.23		57520.77
620	57526	-0.23		57525.77
600	57530	+0.03		57530.03
580	57551	+0.03		57551.03
560	57575	+0.03		57575.03
540	57576	+0.03		57576.03
520	57590	+0.03		57590.03
500	57555	+0.03		57555.03
480	57628	+0.03		57628.03
460	57640	+0.03		57640.03
440	57572	+0.03		57572.03
420	57694	+0.03		57694.03
400	57505	+0.03		57505.03
380	57528	+0.03		57528.03
360	57630	+0.03		57630.03
340	57586	+0.03		57586.03
320	57572	+0.03		57572.03
300	57622	+0.03		57622.03
Line 1850 m North				
1100	57436	-0.13		57435.87
1080	57388	-0.13		57387.87
1060	57385	-0.13		57384.87
1040	57508	-0.13		57507.87
1020	57484	-0.13		57483.87
1000	57480	-0.13		57479.87
980	57503	-0.13		57502.87
960	57498	-0.13		57497.87
940	57554	-0.13		57553.87
920	57485	-0.13		57484.87
900	57487	-0.13		57486.87
880	57480	-0.13		57479.87
860	57488	-0.13		57487.87
840	57460	-0.13		57459.87
820	57479	-0.13		57478.87
800	57460	-0.13		57459.87
780	57486	-0.13		57485.87
760	57502	-0.13		57501.87

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1850 m North continued				
740	57504	-0.13		57503.87
720	57511	-0.13		57510.87
700	57517	-0.13		57516.87
680	57500	-0.13		57499.87
660	57522	-0.13		57521.87
640	57531	-0.13		57530.87
620	57528	-0.13		57527.87
600	57514	+0.03		57514.03
580	57508	+0.03		57508.03
560	57536	+0.03		57536.03
540	57535	+0.03		57535.03
520	57554	+0.03		57554.03
500	57570	+0.03		57570.03
480	57597	+0.03		57597.03
460	57612	+0.03		57612.03
440	57633	+0.03		57633.03
420	57680	+0.03		57680.03
400	57466	+0.03		57466.03
380	57614	+0.03		57614.03
360	57536	+0.03		57536.03
340	57556	+0.03		57556.03
320	57566	+0.03		57566.03
300	57629	+0.03		57629.03
Line 1900 m North				
1100	57459	-0.13		57458.87
1080	57451	-0.13		57450.87
1060	57498	-0.13		57497.87
1040	57591	-0.13		57590.87
1020	57527	-0.13		57526.87
1000	57527	-0.13		57526.87
980	57599	-0.13		57598.87
960	57546	-0.13		57545.87
940	57561	-0.13		57560.87
920	57572	-0.13		57571.87
900	57503	-0.13		57502.87
880	57478	-0.13		57477.87
860	57485	-0.13		57484.87
840	57484	-0.13		57483.87

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 1900 m North continued				
820	57478	-0.13		57477.87
800	57490	-0.13		57489.87
780	57503	-0.13		57502.87
760	57500	-0.13		57499.87
740	57502	-0.13		57501.87
720	57519	-0.13		57518.87
700	57520	-0.13		57519.87
680	57528	-0.13		57527.87
660	57516	-0.13		57515.87
640	57549	-0.13		57548.87
620	57552	-0.13		57551.87
600	57531	-0.13		57530.87
Line 1950 m North				
1100	57492	-0.02	+0.42	57492.40
1080	57473	-0.02	+0.42	57473.40
1060	57492	-0.02	+0.42	57492.40
1040	57527	-0.02	+0.42	57527.40
1020	57547	-0.02	+0.42	57547.40
1000	57547	-0.02	+0.42	57547.40
980	57572	-0.02	+0.42	57572.40
960	57594	-0.02	+0.42	57594.40
940	57630	-0.02	+0.42	57630.40
920	57522	-0.02	+0.42	57522.40
900	57462	-0.02	+0.42	57462.40
880	57486	-0.02	+0.42	57486.40
860	57478	-0.02	+0.42	57478.40
840	57492	-0.02	+0.42	57492.40
820	57504	-0.02	+0.42	57504.40
800	57508	-0.02	+0.42	57508.40
780	57524	-0.02	+0.42	57524.40
760	57517	-0.02	+0.42	57517.40
740	57541	-0.02	+0.42	57541.40
720	57544	-0.02	+0.42	57544.40
700	57533	-0.02	+0.42	57533.40
680	57546	-0.02	+0.42	57546.40
660	57551	-0.02	+0.42	57551.40
640	57569	-0.02	+0.42	57569.40
620	57608	-0.02	+0.42	57608.40
600	57562	-0.02	+0.42	57562.40

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2000 m North				
1100	57467	-0.02	+0.42	57467.40
1080	57508	-0.02	+0.42	57508.40
1060	57533	-0.02	+0.42	57533.40
1040	57546	-0.02	+0.42	57546.40
1020	57528	-0.02	+0.42	57528.40
1000	57523	-0.02	+0.42	57523.40
980	57516	-0.02	+0.42	57516.40
960	57386	-0.02	+0.42	57386.40
940	57470	-0.02	+0.42	57470.40
920	57425	-0.02	+0.42	57425.40
900	57437	-0.02	+0.42	57437.40
880	57464	-0.02	+0.42	57464.40
860	57472	-0.02	+0.42	57472.40
840	57460	-0.02	+0.42	57460.40
820	57484	-0.02	+0.42	57484.40
800	57487	-0.02	+0.42	57487.40
780	57492	-0.02	+0.42	57492.40
760	57485	-0.02	+0.42	57485.40
740	57510	-0.02	+0.42	57510.40
720	57524	-0.02	+0.42	57524.40
700	57514	-0.02	+0.42	57514.40
680	57487	-0.02	+0.42	57487.40
660	57534	-0.02	+0.42	57534.40
640	57562	-0.02	+0.42	57562.40
620	57555	-0.02	+0.42	57555.40
600	57581	-0.02	+0.42	57581.40
Line 2050 m North				
1100	57484	+0.04	+0.25	57484.29
1080	57466	+0.04	+0.25	57466.29
1060	57449	+0.04	+0.25	57449.29
1040	57432	+0.04	+0.25	57432.29
1020	57454	+0.04	+0.25	57454.29
1000	57465	+0.04	+0.25	57465.29
980	57516	+0.04	+0.25	57516.29
960	57432	+0.04	+0.25	57432.29
940	57607	+0.04	+0.25	57607.29
920	57411	+0.04	+0.25	57411.29
900	57438	+0.04	+0.25	57438.29

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Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2050 m North continued				
880	57444	+0.04	+0.25	57444.29
860	57464	+0.04	+0.25	57464.29
840	57477	+0.04	+0.25	57477.29
820	57472	+0.04	+0.25	57472.29
800	57493	+0.04	+0.25	57493.29
780	57503	+0.04	+0.25	57503.29
760	57493	+0.04	+0.25	57493.29
740	57500	+0.04	+0.25	57500.29
720	57520	+0.04	+0.25	57520.29
700	57507	+0.04	+0.25	57507.29
680	57518	+0.04	+0.25	57518.29
660	57534	+0.04	+0.25	57534.29
640	57522	+0.04	+0.25	57522.29
620	57533	+0.04	+0.25	57533.29
600	57520	+0.04	+0.25	57520.29
Line 2100 m North				
1100	57458	+0.04	+0.25	57458.29
1080	57466	+0.04	+0.25	57466.29
1060	57472	+0.04	+0.25	57472.29
1040	57447	+0.04	+0.25	57447.29
1020	57419	+0.04	+0.25	57419.29
1000	57444	+0.04	+0.25	57444.29
980	57492	+0.04	+0.25	57492.29
960	57523	+0.04	+0.25	57523.29
940	57594	+0.04	+0.25	57594.29
920	57485	+0.04	+0.25	57485.29
900	57408	+0.04	+0.25	57408.29
880	57438	+0.04	+0.25	57438.29
860	57438	+0.04	+0.25	57438.29
840	57443	+0.04	+0.25	57443.29
820	57452	+0.04	+0.25	57452.29
800	57470	+0.04	+0.25	57470.29
780	57464	+0.04	+0.25	57464.29
760	57453	+0.04	+0.25	57453.29
740	57458	+0.04	+0.25	57458.29
720	57479	+0.04	+0.25	57479.29
700	57492	+0.04	+0.25	57492.29
680	57465	+0.04	+0.25	57465.29

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Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2100 m North continued				
660	57541	+0.04	+0.25	57541.29
640	57515	+0.04	+0.25	57515.29
620	57536	+0.04	+0.25	57536.29
600	57513	+0.04	+0.25	57513.29
Line 2150 m North				
1100	57481	-0.46	+0.02	57480.56
1080	57482	-0.46	+0.02	57481.56
1060	57501	-0.46	+0.02	57500.56
1040	57484	-0.46	+0.02	57483.56
1020	57511	-0.46	+0.02	57510.56
1000	57525	-0.46	+0.02	57524.56
980	57547	-0.46	+0.02	57546.56
960	57600	-0.46	+0.02	57599.56
940	57616	-0.46	+0.02	57615.56
920	57409	-0.46	+0.02	57408.56
900	57433	-0.46	+0.02	57432.56
880	57463	-0.46	+0.02	57462.56
860	57500	-0.46	+0.02	57499.56
840	57507	-0.46	+0.02	57506.56
820	57528	-0.46	+0.02	57527.56
800	57544	-0.46	+0.02	57543.56
780	57526	-0.46	+0.02	57525.56
760	57542	-0.46	+0.02	57541.56
740	57570	-0.46	+0.02	57569.56
720	57551	-0.46	+0.02	57550.56
700	57549	-0.46	+0.02	57548.56
680	57594	-0.46	+0.02	57593.56
660	57593	-0.46	+0.02	57592.56
640	57574	-0.46	+0.02	57573.56
620	57622	-0.46	+0.02	57621.56
600	57545	-0.46	+0.02	57544.56
Line 2200 m North				
1100	57548	-0.46	+0.02	57547.56
1080	57516	-0.46	+0.02	57515.56
1060	57526	-0.46	+0.02	57525.56
1040	57531	-0.46	+0.02	57530.56

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2200 m North continued				
1020	57598	-0.46	+0.02	57597.56
1000	57646	-0.46	+0.02	57645.56
980	57606	-0.46	+0.02	57605.56
960	57614	-0.46	+0.02	57613.56
940	57697	-0.46	+0.02	57696.56
920	57638	-0.46	+0.02	57637.56
900	57439	-0.46	+0.02	57438.56
880	57475	-0.46	+0.02	57474.56
860	57518	-0.46	+0.02	57517.56
840	57525	-0.46	+0.02	57524.56
820	57535	-0.46	+0.02	57534.56
800	57540	-0.46	+0.02	57539.56
780	57544	-0.46	+0.02	57543.56
760	57550	-0.46	+0.02	57549.56
740	57554	-0.46	+0.02	57553.56
720	57570	-0.46	+0.02	57569.56
700	57565	-0.46	+0.02	57564.56
680	57589	-0.46	+0.02	57588.56
660	57600	-0.46	+0.02	57599.56
640	57594	-0.46	+0.02	57593.56
620	57621	-0.46	+0.02	57620.56
600	57570	-0.46	+0.02	57569.56
Line 2250 m North				
1100	57600	-0.17	-0.17	57599.66
1080	57541	-0.17	-0.17	57540.66
1060	57505	-0.17	-0.17	57504.66
1040	57485	-0.17	-0.17	57484.66
1020	57463	-0.17	-0.17	57462.66
1000	57752	-0.17	-0.17	57751.66
980	57292	-0.17	-0.17	57291.66
960	57541	-0.17	-0.17	57540.66
940	57605	-0.17	-0.17	57604.66
920	57706	-0.17	-0.17	57705.66
900	57344	-0.17	-0.17	57343.66
880	57423	-0.17	-0.17	57422.66
860	57498	-0.17	-0.17	57497.66
840	57504	-0.17	-0.17	57503.66
820	57557	-0.17	-0.17	57556.66

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2250 m North continued				
800	57513	-0.17	-0.17	57512.66
780	57539	-0.17	-0.17	57538.66
760	57542	-0.17	-0/17	57541.66
740	57544	-0.17	-0.17	57543.66
720	57548	-0.17	-0.17	57547.66
700	57556	-0.17	-0.17	57555.66
680	57585	-0.17	-0.17	57584.66
660	57575	-0.17	-0.17	57574.66
640	57588	-0.17	-0.17	57587.66
620	57568	-/017	-0.17	57567.66
600	57567	-0.17	-0.17	57566.66
Line 2300 m North				
1100	57574	-0.17	-0.17	57573.66
1080	57600	-0.17	-0.17	57599.66
1060	57524	-0.17	-0.17	57523.66
1040	57534	-0.17	-0.17	57533.66
1020	57504	-0.17	-0.17	57503.66
1000	57499	-0.17	-0.17	57498.66
980	57629	-0.17	-0.17	57628.66
960	57601	-0.17	-0.17	57600.66
940	57639	-0.17	-0.17	57638.66
920	57648	-0.17	-0.17	57647.66
900	57447	-0.17	-0.17	57446.66
880	57490	-0.17	-0.17	57489.66
860	57548	-0.17	-0.17	57547.66
840	57523	-0.17	-0.17	57522.66
820	57547	-0.17	-0.17	57546.66
800	57550	-0.17	-0.17	57549.66
780	57549	-0.17	-0.17	57548.66
760	57551	-0.17	-0.17	57550.66
740	57555	-0.17	-0.17	57554.66
720	57563	-0.17	-0.17	57562.66
700	57568	-0.17	-0.17	57567.66
680	57577	-0.17	-0.17	57576.66
660	57591	-0.17	-0.17	57590.66
640	57590	-0.17	-0.17	57589.66
620	57529	-0.17	-0.17	57528.66
600	57582	-0.17	-0.17	57581.66

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2350 m North				
1100	57589	+0.02	-1.04	57587.98
1080	57588	+0.02	-1.04	57586.98
1060	57535	+0.02	-1.04	57533.98
1040	57550	+0.02	-1.04	57548.98
1020	57578	+0.02	-1.04	57576.98
1000	57569	+0.02	-1.04	57567.98
980	57566	+0.02	-1.04	57564.98
960	57580	+0.02	-1.04	57578.98
940	57611	+0.02	-1.04	57609.98
920	57527	-0.02	-1.04	57525.98
900	57494	+0.02	-1.04	57492.98
880	57500	+0.02	-1.04	57498.98
860	57522	+0.02	-1.04	57520.98
840	57518	+0.02	-1.04	57516.98
820	57515	+0.02	-1.04	57513.98
800	57526	+0.02	-1.04	57524.98
780	57532	+0.02	-1.04	57530.98
760	57532	+0.02	-1.04	57530.98
740	57547	+0.02	-1.04	57545.98
720	57552	+0.02	-1.04	57550.98
700	57560	+0.02	-1.04	57558.98
680	57563	+0.02	-1.04	57561.98
660	57598	+0.02	-1.04	57596.98
640	57587	+0.02	-1.04	57585.98
620	57577	+0.02	-1.04	57575.98
600	57571	+0.02	-1.04	57569.98
Line 2400 m North				
1100	57566	+0.02	-1.04	57564.98
1080	57573	+0.02	-1.04	57571.98
1060	57605	+0.02	-1.04	57603.98
1040	57546	+0.02	-1.04	57544.98
1020	57571	+0.02	-1.04	57569.98
1000	57576	+0.02	-1.04	57574.98
980	57552	+0.02	-1.04	57550.98
960	57697	+0.02	-1.04	57695.98
940	58472	+0.02	-1.04	58470.98
920	57534	+0.02	-1.04	57532.98
900	57518	+0.02	-1.04	57516.98

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2400 m North continued				
880	57466	+0.02	-1.04	57464.98
860	57499	+0.02	-1.04	57497.98
840	57498	+0.02	-1.04	57496.98
820	57510	+0.02	-1.04	57508.98
800	57527	+0.02	-1.04	57525.98
780	57527	+0.02	-1.04	57525.98
760	57535	+0.02	-1.04	57533.98
740	57537	+0.02	-1.04	57535.98
720	57546	+0.02	-1.04	57544.98
700	57559	+0.02	-1.04	57557.98
680	57574	+0.02	-1.04	57572.98
660	57570	+0.02	-1.04	57568.98
640	57577	+0.02	-1.04	57575.98
620	57576	+0.02	-1.04	57574.98
600	57581	+0.02	-1.04	57579.98
Line 2450 m North				
1100	57530	+0.23	-0.29	57529.94
1080	57594	+0.23	-0.29	57593.94
1060	57592	+0.23	-0.29	57591.94
1040	57549	+0.23	-0.29	57548.94
1020	57570	+0.23	-0.29	57569.94
1000	57607	+0.23	-0.29	57606.94
980	57634	+0.23	-0.29	57633.94
960	57737	+0.23	-0.29	57736.94
940	57818	+0.23	-0.29	57817.94
920	57745	+0.23	-0.29	57744.94
900	57439	+0.23	-0.29	57438.94
880	57484	+0.23	-0.29	57483.94
860	57506	+0.23	-0.29	57505.94
840	57607	+0.23	-0.29	57606.94
820	57520	+0.23	-0.29	57519.94
800	57540	+0.23	-0.29	57539.94
780	57534	+0.23	-0.29	57533.94
760	57541	+0.23	-0.29	57540.94
740	57549	+0.23	-0.29	57548.94
720	57546	+0.23	-0.29	57545.94
700	57550	+0.23	-0.29	57549.94
680	57551	+0.23	-0.29	57550.94

APPENDIX D

Scintrex MP2 Magnetometer Survey

Data and Calculation Results

Longitude m West	Reading nT=gammas	Loop Correction nT=gammas	Diurnal Correction nT=gammas	Corrected Reading nT=gammas
Line 2450 m North continued				
660	57563	+0.23	-0.29	57562.94
640	57544	+0.23	-0.29	57543.94
620	57565	+0.23	-0.29	57564.94
600	57591	+0.23	-0.29	57590.94
Line 2500 m North				
1100	57565	+0.23	-0.29	57564.94
1080	57604	+0.23	-0.29	57603.94
1060	57562	+0.23	-0.29	57561.94
1040	57554	+0.23	-0.29	57553.94
1020	57539	+0.23	-0.29	57538.94
1000	57552	+0.23	-0.29	57551.94
980	57574	+0.23	-0.29	57573.94
960	57666	+0.23	-0.29	57665.94
940	57673	+0.23	-0.29	57672.94
920	57642	+0.23	-0.29	57641.94
900	57480	+0.23	-0.29	57479.94
880	57511	+0.23	-0.29	57510.94
860	57541	+0.23	-0.29	57540.94
840	57569	+0.23	-0.29	57568.94
820	57521	+0.23	-0.29	57520.94
800	57519	+0.23	-0.29	57518.94
780	57536	+0.23	-0.29	57535.94
760	57531	+0.23	-0.29	57530.94
740	57534	+0.23	-0.29	57533.94
720	57533	+0.23	-0.29	57532.94
700	57553	+0.23	-0.29	57552.94
680	57552	+0.23	-0.29	57551.94
660	57573	+0.23	-0.29	57572.94
640	57577	+0.23	-0.29	57576.94
620	57615	+0.23	-0.29	57614.94
600	57579	+0.23	-0.29	57578.94

APPENDIX E

EM16 Data and Fraser-filter Results

Line 800 m North

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase%/100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
900	85	26	40.4	-40.4	-78.4	6.7
880	78	33	38.0	-38.0	-69.0	-4.7
860	60	14	31.0	-31.0	-71.7	4.5
840	86	24	40.7	-40.7	-73.7	-5.5
820	65	12	33.0	-33.0	-67.2	-22.2
800	68	12	34.2	-34.2	-79.2	-8.7
780	100	14	45.0	-45.0	-89.4	-3.8
760	98	1	44.4	-44.4	-87.9	-16.3
740	95	16	43.5	-43.5	-93.2	-3.3
720	118	10	49.7	-49.7	-104.2	13.2
700	140	28	54.5	-54.4	-96.5	4.9
680	90	25	42.0	-42.0	-91.0	0.7
660	115	36	49.0	-49.0	-91.6	-7.4
640	92	18	42.6	-42.6	-90.3	-11.7
620	110	27	47.7	-47.7	-99.0	-4.6
600	125	-30	51.3	-51.3	-102.0	-5.4
580	122	-24	50.7	-50.7	-103.6	-3.3
560	132	-38	52.9	-52.9	-107.4	3.7
540	140	5	54.5	-54.5	-106.9	5.4
520	130	-14	52.4	-52.4	-103.7	3.3
500	125	-12	51.3	-51.3	-101.5	4.9
480	120	-4	50.2	-50.2	-100.4	13.6
460	120	-3	50.2	-50.2	-96.6	4.9
440	105	-18	46.4	-46.4	-86.8	91.8
420	85	9	40.4	-40.4	-91.7	103.0
400	125	2	51.3	-51.3	5.0	-97.7
380	-150	-4	-56.3	56.3	11.3	-109.2
360	100	-1	45.0	-45.0	-92.7	-7.7
340	110	-7	47.7	-47.7	-97.9	
320	120	-12	50.2	-50.2	-100.4	
300	120	0	50.2	-50.2		

Line 850 m North

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase%/100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
900	105	22	46.4	-46.4	-97.5	11.5
880	124	23	51.1	-51.1	-98.8	29.5
860	110	26	47.7	-47.7	-86.0	22.8
840	79	17	38.3	-38.3	-69.3	2.5
820	60	6	31.0	-31.0	-63.2	-9.7
800	63	8	32.2	-32.2	-66.8	-11.2
780	69	15	34.6	-34.6	-72.9	-4.8
760	79	9	38.3	-38.3	-78.0	-3.5
740	83	15	39.7	-39.7	-77.7	-16.0

APPENDIX E

EM16 Data and Fraser-filter Results

Line 850 m North continued

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase%/100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
720	78	7	38.0	-38.0	-81.5	-13.7
700	95	11	43.5	-43.5	-93.7	8.0
680	120	18	50.2	-50.2	-95.2	14.5
660	100	23	45.0	-45.0	-85.7	2.2
640	86	14	40.7	-40.7	-80.7	-5.4
620	84	10	40.0	-40.0	-83.5	0.5
600	95	13	43.5	-43.5	-86.1	-3.3
580	92	24	42.6	-42.6	-83.0	1.0
560	85	20	40.4	-40.4	-89.4	12.9
540	115	24	49.0	-49.0	-82.0	-1.9
520	65	14	33.0	-33.0	-76.5	1.9
500	95	27	43.5	-43.5	-83.9	11.0
480	85	18	40.4	-40.4	-74.6	-1.0
460	68	9	34.2	-34.2	-72.9	-10.4
440	80	14	38.7	-38.7	-75.6	-21.0
420	75	12	36.9	-36.9	-83.3	-17.1
400	105	12	46.4	-46.4	-96.6	-6.0
380	120	6	50.2	-50.2	-100.4	-3.3
360	120	-4	50.2	-50.2	-102.6	1.1
340	130	-4	52.4	-52.4	-103.7	
320	125	22	51.3	-51.3	-101.5	
300	120	-37	50.2	-50.2		

Line 900 m North

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase%/100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
900	77	16	37.6	-37.6	-79.6	-15.8
880	90	-3	42.0	-42.0	-88.4	-4.4
860	105	12	46.4	-46.4	-95.4	17.8
840	115	18	49.0	-49.0	-92.8	13.7
820	96	16	43.8	-43.8	-77.6	-12.4
800	67	15	33.8	-33.8	-79.1	-7.3
780	101	21	45.3	-45.3	-90.0	2.2
760	99	20	44.7	-44.7	-86.4	-6.1
740	89	7	41.7	-41.7	-87.8	8.4
720	104	15	46.1	-46.1	-92.5	19.1
700	105	24	46.4	-46.4	-79.4	-13.4
680	65	14	33.0	-33.0	-73.4	-30.3
660	85	24	40.4	-40.4	-92.8	-7.5
640	130	11	52.4	-52.4	-103.7	11.5
620	125	23	51.3	-51.3	-100.3	15.8
600	115	23	49.0	-49.0	-92.2	12.6
580	94	24	43.2	-43.2	-84.5	1.2
560	88	28	41.3	-41.3	-79.6	-8.9

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1-M_2)$
Line 900 m North continued						
540	79	22	38.3	-38.3	-83.3	-2.5
520	100	23	45.0	-45.0	-88.5	4.9
500	95	30	43.5	-43.5	-85.8	2.5
480	91	38	42.3	-42.3	-83.6	1.2
460	88	22	41.3	-41.3	-83.3	2.9
440	90	18	42.0	-42.0	-82.4	-2.6
420	85	21	40.4	-40.4	-80.4	-13.6
400	84	21	40.0	-40.0	-85.0	-17.5
380	100	24	45.0	-45.0	-94.0	0.5
360	115	35	49.0	-49.0	-102.5	31.1
340	135	40	53.5	-53.5	-93.5	
320	84	25	40.0	-40.0	-71.4	
300	61	16	31.4	-31.4		
Line 950 m North						
900	85	11	40.4	-40.4	-85.4	3.1
880	100	15	45.0	-45.0	-92.7	23.1
860	110	17	47.7	-47.7	-82.3	10.1
840	69	16	34.6	-34.6	-69.6	-4.5
820	70	1	35.0	-35.0	-72.2	-9.7
800	76	10	37.2	-37.2	-74.1	-15.6
780	75	12	36.9	-36.9	-81.9	-3.2
760	100	13	45.0	-45.0	-89.7	-0.9
740	99	21	44.7	-44.7	-85.1	-11.6
720	85	8	40.4	-40.4	-90.6	5.2
700	120	17	50.2	-50.2	-96.7	16.3
680	106	32	46.7	-46.7	-85.4	0.8
660	80	17	38.7	-38.7	-80.4	3.3
640	89	34	41.7	-41.7	-84.6	16.6
620	93	25	42.9	-42.9	-77.1	12.3
600	68	19	34.2	-34.2	-68.0	-12.7
580	67	20	33.8	-33.8	-64.8	-31.9
560	60	22	31.0	-31.0	-78.7	-20.0
540	110	36	47.7	-47.7	-96.7	-3.5
520	115	19	49.0	-49.0	-98.7	26.8
500	118	38	49.7	-49.7	-93.2	31.0
480	95	26	43.5	-43.5	-71.9	-9.6
460	54	32	28.4	-28.4	-62.2	-34.5
440	67	23	33.8	-33.8	-81.5	-3.6
420	110	35	47.7	-47.7	-96.7	6.1
400	115	28	49.0	-49.0	-85.1	-13.9
380	73	17	36.1	-36.1	-90.6	19.2

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 950 m North continued						
360	140	38	54.5	-54.5	-99.0	32.8
340	95	23	43.5	-43.5	-71.4	
320	53	17	27.9	-27.9	-66.2	
300	79	28	38.3	-38.3		
Line 1000 m North						
900	-145	-16	-55.4	55.4	14.7	-75.3
880	86	-8	40.7	-40.7	-70.8	5.3
860	58	-6	30.1	-30.1	-60.6	-3.2
840	59	-1	30.5	-30.5	-65.5	-6.2
820	7	2	35.0	-35.0	-63.8	-25.2
800	55	-1	28.8	-28.8	-71.7	-25.7
780	93	-16	42.9	-42.9	-89.0	-3.3
760	104	-8	46.1	-46.1	-97.4	3.8
740	125	-25	51.3	-51.3	-92.3	-11.6
720	87	-4	41.0	-41.0	-93.6	-10.8
700	131	1	52.6	-52.6	-103.9	-0.5
680	125	12	51.3	-51.3	-104.4	2.9
660	133	15	53.1	-53.1	-104.4	18.1
640	125	22	51.3	-51.3	-101.5	32.4
620	120	16	50.2	-50.2	-86.3	30.5
600	73	28	36.1	-36.1	-69.1	19.3
580	65	18	33.0	-33.0	-55.8	6.5
560	42	15	22.8	-22.8	-49.8	0.0
540	51	17	27.0	-27.0	-49.3	-20.2
520	41	14	22.3	-22.3	-49.8	-28.7
500	52	16	27.5	-27.5	-69.5	-3.9
480	90	38	42.0	-42.0	-78.5	8.6
460	74	19	36.5	-36.5	-37.4	-0.6
440	75	24	36.9	-36.9	-69.9	-11.5
420	65	16	33.0	-33.0	-74.0	-9.6
400	87	33	41.0	-41.0	-81.4	-6.8
380	85	22	40.4	-40.4	-83.6	-7.8
360	94	23	43.2	-43.2	-88.2	1.4
340	100	26	45.0	-45.0	-91.4	
320	105	26	46.4	-46.4	-86.8	
300	85	17	40.4	-40.4		

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1050 m North						
900	121	2	50.4	-50.4	-100.6	7.8
880	120	-8	50.2	-50.2	-90.8	4.5
860	110	4	47.8	-47.8	-92.8	3.6
840	100	15	45.0	-45.0	-93.5	12.4
820	113	-4	48.5	-48.5	-89.2	9.1
800	86	3	40.7	-40.7	-81.1	-7.3
780	85	6	40.4	-40.4	-80.1	-17.6
760	83	0	39.7	-39.7	-88.4	-15.1
740	114	13	48.7	-48.7	-97.7	-7.9
720	115	-1	49.0	-49.0	-103.5	0.0
700	140	5	54.5	-54.5	-105.6	-1.3
680	124	22	51.1	-51.1	-103.5	-4.5
660	130	38	52.4	-52.4	-106.9	6.2
640	140	36	54.5	-54.5	-108.8	14.1
620	135	25	53.5	-53.5	-100.7	13.6
600	108	37	47.2	-47.2	-93.9	21.7
580	106	33	46.7	-46.7	-87.1	9.5
560	85	31	40.4	-40.4	-72.2	-10.5
540	62	20	31.8	-31.8	-77.6	-1.3
520	103	27	45.8	-45.8	-82.7	3.1
500	75	20	36.9	-36.9	-78.9	12.1
480	90	20	42.0	-42.0	-79.6	13.2
460	77	24	37.6	-37.6	-66.8	3.5
440	56	19	29.2	-29.2	-66.4	-2.3
420	76	30	37.2	-37.2	-63.3	-7.7
400	49	25	26.1	-26.1	-68.7	11.1
380	92	27	42.6	-42.6	-71.0	4.9
360	54	19	28.4	-28.4	-57.6	-16.2
340	56	13	29.2	-29.2	-66.1	
320	75	17	36.9	-36.9	-73.8	
300	75	25	36.9	-36.9		
Line 1100 m North						
900	110	6	47.7	-47.7	-101.2	10.4
880	135		53.5	-53.5	-98.5	3.0
860	100	9	45.0	-45.0	-90.8	-13.2
840	103	6	45.8	-45.8	-95.5	-9.7
820	118	18	49.7	-49.7	-104.0	0.2
800	139	20	55.3	-55.3	-105.2	5.4
780	123	15	50.9	-50.9	-103.8	5.6

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1100 m North continued						
760	132	20	52.9	-52.9	-99.8	-7.8
740	107	11	46.9	-46.9	-98.2	-7.1
720	125	28	51.3	-51.3	-107.6	7.3
700	150		56.3	-56.3	-105.3	13.6
680	115		49.0	-49.0	-100.3	8.6
660	125	21	51.3	-51.3	-91.7	-10.0
640	85	29	40.4	-40.4	-91.7	-11.8
620	125	29	51.3	-51.3	-101.7	1.1
600	121	17	50.4	-50.4	-103.5	4.4
580	133	10	52.1	-52.1	-100.6	12.1
560	109	14	47.5	-47.5	-99.1	15.8
540	126	13	51.6	-51.6	-88.5	96.4
520	75	16	36.9	-36.9	-83.3	97.9
500	105	5	46.4	-46.4	7.9	-85.7
480	-139	-10	-54.3	54.3	14.6	-84.3
460	83	20	39.7	-39.7	-93.6	8.2
440	137	18	53.9	-53.9	-98.9	24.3
420	100	23	45.0	-45.0	-85.4	17.4
400	85	22	40.4	-40.4	-74.6	-0.2
380	68	9	34.2	-34.2	-68.0	-15.3
360	67	16	33.8	-33.8	-74.8	-19.9
340	87	15	41.0	-41.0	-83.3	
320	91	15	42.3	-42.3	-94.7	
300	130	23	52.4	-52.4		
Line 1150 m North						
900	96	8	43.8	-43.8	-92.3	-3.9
880	113	12	48.5	-48.5	-97.5	8.6
860	115	15	49.0	-49.0	-96.2	26.6
840	108	11	47.2	-47.2	-88.9	27.6
820	89	13	41.7	-41.7	-69.6	-0.3
800	53	11	27.9	-27.9	-61.3	-11.7
780	66	7	33.4	-33.4	-69.9	-8.6
760	74	4	36.5	-36.5	-73.0	-9.4
740	74	3	36.5	-36.5	-78.5	-10.9
720	90	-4	42.0	-42.0	-82.4	-16.1
700	85	4	40.4	-40.4	-89.4	-16.4
680	115	13	49.0	-49.0	-90.5	-11.3
660	117	14	49.5	-49.5	-105.8	1.0
640	150		56.3	-56.3	-109.8	2.4

APPENDIX E

EM16 Data and Fraser-filter Results

Line 1150 m North continued

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan in-phase%/100	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
620	135	31	53.5	-53.5	-104.8	-4.8
600	125	27	51.3	-51.3	-107.4	6.4
580	149	35	56.1	-56.1	-109.6	21.7
560	135	36	53.5	-52.5	-101.0	7.5
540	109	36	47.5	-47.5	-87.9	-21.0
520	85	22	40.4	-40.4	-93.5	-18.6
500	133	28	53.1	-53.1	-108.9	11.9
480	147	32	55.8	-55.8	-112.1	27.9
460	150		56.3	-56.3	-97.0	5.8
440	86	29	40.7	-40.7	-84.2	-4.5
420	95	26	43.5	-43.5	-91.2	5.8
400	110	33	47.7	-47.7	-88.7	5.3
380	87	20	41.0	-41.0	-85.4	13.0
360	98	20	44.4	-44.4	-83.4	-2.6
340	81	12	39.0	-39.0	-72.4	
320	66	19	33.4	-33.4	-86.0	
300	131	14	52.6	-52.6		

Line 1200 m North

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan in-phase%/100	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
900	85	18	40.4	-40.4	-70.5	-23.4
880	58	10	30.1	-30.1	-77.6	-14.1
860	109	18	47.5	-47.5	-93.9	21.6
840	105	25	46.4	-46.4	-91.7	25.0
820	101	20	45.3	-45.3	-72.3	-11.2
800	51	14	27.0	-27.0	-66.7	-25.3
780	83	14	39.7	-39.7	-83.5	-13.4
760	96	26	43.8	-43.8	-92.0	4.6
740	112	30	48.2	-48.2	-96.9	8.2
720	114	20	48.7	-48.7	-87.4	-11.6
700	80	12	38.7	-38.7	-88.7	-6.7
680	119	18	50.0	-50.0	-99.0	106.7
660	115	24	49.0	-49.0	-95.4	96.0
640	105	30	46.4	-46.4	7.7	-98.2
620	-138	-27	-54.1	54.1	0.6	1.1
600	135	35	53.5	-53.5	-105.9	113.9
580	130	38	52.4	-52.4	1.7	-94.2
560	-138	28	-54.1	54.1	8.0	-78.1
540	104	26	46.1	-46.1	-92.5	45.5
520	105	44	46.4	-46.4	-70.1	22.1
500	44	13	23.7	-23.7	-47.0	-20.0

APPENDIX E

EM16 Data and Fraser-filter Results

Line 1200 m North continued

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan in-phase%/100	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
480	43	22	23.3	-23.3	-48.0	-40.7
460	46	20	24.7	-24.7	-67.0	-21.1
440	91	36	42.3	-42.3	-88.7	-2.0
420	105	39	46.4	-46.4	-88.1	-9.9
400	89	35	41.7	-41.7	-90.7	7.5
380	115	36	49.0	-49.0	-98.0	15.8
360	115	34	49.0	-49.0	-83.2	-12.5
340	68	33	34.2	-34.2	-82.2	
320	111	42	48.0	-48.0	-95.7	
300	110	38	47.7	-47.7		

Line 1250 m North

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan in-phase%/100	Sign Convention W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
900	68	22	34.2	-34.2	-66.8	4.3
880	64	25	32.6	-32.6	-60.1	-15.3
860	52	20	27.5	-27.5	-62.5	-29.0
840	70	14	35.0	-35.0	-75.4	-13.3
820	85	18	40.4	-40.4	-91.5	8.1
800	124	27	51.1	-51.1	-88.7	-0.6
780	77	16	37.6	-37.6	-83.4	-5.9
760	103	26	45.8	-45.8	-89.3	3.1
740	95	22	43.5	-43.5	-89.3	-1.5
720	103	25	45.8	-45.8	-86.2	-15.5
700	85	20	40.4	-40.4	-90.8	-9.5
680	121	29	50.4	-50.4	-101.7	109.0
660	125	24	51.3	-51.3	-100.3	97.5
640	115	24	49.0	-49.0	7.3	-95.2
620	-150	-1	-56.3	56.3	-2.8	-97.5
600	135	42	53.5	-53.5	-102.5	104.5
580	115	26	49.0	-49.0	-100.3	102.3
560	125	42	51.3	-51.3	2.0	1.2
540	-134	10	-53.3	53.3	2.0	22.8
520	125	42	51.3	-51.3	3.2	-75.5
500	-140	-22	-54.5	54.5	24.8	-53.4
480	57	34	29.7	-29.7	-78.7	28.7
460	115	44	49.0	-49.0	-78.2	19.8
440	56	37	29.2	-29.2	-50.0	-6.9
420	38	20	20.8	-20.8	-58.4	20.8
400	77	32	37.6	-37.6	-56.9	3.2
380	35	31	19.3	-19.3	-37.6	-36.1
360	33	18	18.3	-18.3	-53.7	-29.6

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1250 m North continued						
340	71	31	35.4	-35.4	-73.7	
320	79	26	38.3	-38.3	-83.3	
300	100	37	45.0	-45.0		
Line 1300 m North						
900	49	14	26.1	-26.1	-51.7	1.4
880	48	12	25.6	-25.6	-50.3	8.5
860	46	6	24.7	-24.7	-50.3	1.5
840	48	6	25.6	-25.6	-41.8	-17.4
820	29	3	16.2	-16.2	-48.8	-10.0
800	64	3	32.6	-32.6	-59.2	-5.6
780	50	0	26.6	-26.6	-58.8	-3.9
760	63	1	32.2	-32.2	-64.8	4.6
740	64	7	32.6	-32.6	-62.7	-10.3
720	58	8	30.1	-30.1	-60.2	-29.1
700	58	11	30.1	-30.1	-73.0	-22.4
680	93	11	42.9	-42.9	-89.3	-16.0
660	105	18	46.4	-46.4	-95.4	86.8
640	115	21	49.0	-49.0	-105.3	202.2
620	150		56.3	-56.3	-8.6	17.4
600	-110	-7	-47.7	47.7	96.9	-165.7
580	-116	-12	-49.2	49.2	8.8	-83.6
560	85	27	40.4	-40.4	-68.8	-15.9
540	54	33	28.4	-28.4	-74.8	9.0
520	105	24	46.4	-46.4	-84.7	16.2
500	79	21	38.3	-38.3	-65.8	-11.3
480	52	39	27.5	-27.5	-68.5	7.2
460	87	28	41.0	-41.0	-77.1	51.6
440	73	37	36.1	-36.1	-61.3	30.3
420	47	26	25.2	-25.2	-25.2	-42.7
400	0		0	0	-31.0	-18.9
380	60		31.0	-31.0	-67.9	45.8
360	75		36.9	-36.9	-49.9	35.1
340	23	26	13.0	-13.0	-22.1	
320	16	11	9.1	-9.1	-14.8	
300	10	2	5.7	-5.7		
Line 1350 m North						
900	65	19	33.0	-33.0	-63.5	12.1

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1350 m North continued						
880	59	20	30.5	-30.5	-51.8	-5.3
860	39	13	21.3	-21.3	-51.4	-11.0
840	58	15	30.1	-30.1	-57.1	-15.2
820	51	12	27.0	-27.0	-62.4	-13.2
800	71	23	35.4	-35.4	-72.3	-7.1
780	75	14	36.9	-36.9	-75.6	-0.5
760	80	10	38.7	-38.7	-79.4	16.1
740	86	17	40.7	-40.7	-76.1	7.8
720	71	13	35.4	-35.4	-63.3	-10.9
700	53	12	27.9	-27.9	-68.3	-0.1
680	85	14	40.4	-40.4	-74.2	-9.6
660	67	13	33.8	-33.8	-68.4	-23.1
640	69	16	34.6	-34.6	-83.8	6.1
620	116	25	49.2	-49.2	-91.5	21.5
600	91	36	42.3	-42.3	-77.7	4.1
580	71	33	35.4	-35.4	-70.0	12.2
560	69	26	34.6	-34.6	-73.6	42.9
540	81	31	39.0	-39.0	-57.8	31.3
520	34	31	18.8	-18.8	-30.7	5.3
500	21	7	11.9	-11.9	-26.5	-21.2
480	26	14	14.6	-14.6	-25.4	-20.0
460	19	23	10.8	-10.8	-47.7	10.4
440	75	30	36.9	-36.9	-45.4	-1.7
420	15	24	8.5	-8.5	-37.3	9.9
400	55	34	28.8	-28.8	-47.1	24.0
380	33	22	18.3	-18.3	-27.4	4.9
360	16	27	9.1	-9.1	-23.1	6.6
340	25	34	14.0	-14.0	-22.5	
320	15	28	8.5	-8.5	-16.5	
300	14	7	8.0	-8.0		
Line 1400 m North						
900	85	24	40.4	-40.4	-73.8	1.2
880	66	28	33.4	-33.4	-69.5	-6.0
860	73	23	36.1	-36.1	-72.6	-8.1
840	74	29	36.5	-36.5	-75.5	-2.3
820	81	43	39.0	-39.0	-80.7	-0.1
800	89	37	41.7	-41.7	-77.8	-0.7
780	73	26	36.1	-36.1	-80.8	7.6
760	99	16	44.7	-44.7	-78.5	-13.3

APPENDIX E

EM16 Data and Fraser-filter Results

Line 1400 m North continued

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTAn $\frac{\text{in-phase\%}}{100}$	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
740	67	23	33.8	-33.8	-73.2	-25.6
720	82	35	39.4	-39.4	-91.8	15.3
700	130	43	52.4	-52.4	-98.8	30.4
680	105	38	46.4	-46.4	-76.5	-15.9
660	58	21	30.1	-30.1	-68.4	-29.8
640	79	38	38.3	-38.3	-92.4	-0.2
620	138	21	54.1	-54.1	-98.2	-0.5
600	97	38	44.1	-44.1	-92.6	-3.2
580	113	29	48.5	-48.5	-98.7	108.5
560	120	36	50.2	-50.2	-95.8	207.5
540	102	31	45.6	-45.6	9.8	0.1
520	-145	-20	-55.4	54.4	111.7	-38.7
500	-150	-15	-56.3	56.3	9.9	19.8
480	105	36	46.4	-46.4	-73.0	168.7
460	50	41	26.6	-26.6	29.7	-4.3
440	-150		-56.3	56.3	95.7	-123.2
420	-82		-39.4	39.4	25.4	-57.2
400	25	37	14.0	-14.0	-27.5	-19.2
380	24	24	13.5	-13.5	-31.8	-6.2
360	33	36	18.3	-18.3	-46.7	26.9
340	54	41	28.4	-28.4	-38.0	
320	17	31	9.6	-9.6	-19.8	
300	18	18	10.2	-10.2		

Line 1450 m North

Longitude m West	In-phase %	Quad rature %	Dip Angle	Sign Convention	Moving sum	Filtered Output
900	75	21	36.9	-36.9	-70.7	-20.0
880	67	26	33.8	-33.8	-82.8	7.3
860	115	37	49.0	-49.0	-90.7	36.1
840	89	40	41.7	-41.7	-75.5	17.8
820	67	26	33.8	-33.8	-54.6	-14.9
800	38	11	20.8	-20.8	-57.7	-29.4
780	75	27	36.9	-36.9	-69.5	-14.2
760	64	27	32.6	-32.6	-87.1	24.1
740	140	40	54.5	-54.5	-83.7	26.2
720	56	25	29.2	-29.2	-63.0	7.1
700	67	33	33.8	-33.8	-57.5	11.6
680	44	21	23.7	-23.7	-55.9	-14.8
660	63	24	32.2	-32.2	-69.1	-10.0
640	75	24	36.9	-36.9	-70.7	-1.6
620	67	26	33.8	-33.8	-79.1	0.3

APPENDIX E

EM16 Data and Fraser-filter Results

Line 1450 m North continued

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
600	101	30	45.3	-45.3	-72.3	-25.9
580	51	32	27.0	-27.0	-78.8	10.1
560	127	44	51.8	-51.8	-98.2	45.8
540	105	41	46.4	-46.4	-68.7	86.3
520	41	27	22.3	-22.3	-52.4	44.1
500	58	23	30.1	-30.1	17.6	-101.1
480	-110	24	-47.7	47.7	-8.3	-62.7
460	148	42	56.0	-56.0	-83.5	26.5
440	52	38	27.5	-27.5	-71.0	46.7
420	95	43	43.5	-43.5	-57.0	33.8
400	24	34	13.5	-13.5	-24.3	-6.4
380	19	25	10.8	-10.8	-23.2	-4.7
360	22	41	12.4	-12.4	-30.7	16.5
340	33	35	18.3	-18.3	-27.9	
320	17	33	9.6	-9.6	-14.2	
300	8	11	4.6	-4.6		

Line 1500 m North

Longitude m West	In-phase %	Quad rature %	Dip Angle	Sign Convention	Moving sum	Filtered Output
900	49	31	26.1	-26.1	-37.4	-35.6
880	20	15	11.3	-11.3	-48.9	-13.5
860	77	36	37.6	-37.6	-73.0	25.7
840	71	37	35.4	-35.4	-62.4	17.4
820	51	33	27.0	-27.0	-47.3	1.3
800	37	28	20.3	-20.3	-45.0	-10.9
780	46	34	24.7	-24.7	-46.0	-22.4
760	39	30	21.3	-21.3	-55.9	1.3
740	69	43	34.6	-34.6	-68.4	32.0
720	67	36	33.8	-33.8	-54.6	40.7
700	38	29	20.8	-20.8	-36.4	41.5
680	28	23	15.6	-15.6	-13.9	0.6
660	-3	0	-1.7	1.7	5.1	-51.9
640	-6	43	-3.4	3.4	-13.1	-46.5
620	30	21	16.7	-16.7	-46.8	-15.9
600	58	26	30.1	-30.1	-59.8	-2.9
580	57	29	29.7	-29.7	-62.7	14.2
560	65	37	33.0	-33.0	-62.7	32.0
540	57	39	29.7	-29.7	-48.5	30.3
520	34	19	18.8	-18.8	-30.7	1.6
500	21	21	11.9	-11.9	-18.2	-13.1
480	11	11	6.3	-6.3	-29.1	3.4

APPENDIX E

EM16 Data and Fraser=filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1500 m North continued						
460	42	33	22.8	-22.8	-31.3	-12.5
440	15	13	8.5	-8.5	-25.7	-13.9
420	31	39	17.2	-17.2	-43.8	25.7
400	50	40	26.6	-26.6	-39.6	29.9
380	23	24	13.0	-13.0	-18.1	10.1
360	9	10	5.1	-5.1	-9.7	1.2
340	8	15	4.6	-4.6	-8.0	
320	6	11	3.4	-3.4	-8.5	
300	9	11	5.1	-5.1		
Line 1550 m North						
900	16	21	9.1	-9.1	-7.4	-10.7
880	-3	25	-1.7	1.7	-5.1	-17.0
860	12	21	6.8	-6.8	-18.1	-7.3
840	20	20	11.3	-11.3	-22.1	-3.3
820	19	13	10.8	-10.8	-25.4	-2.7
800	26	40	14.6	-14.6	-27.6	-6.3
780	23	22	13.0	-13.0	-28.1	-9.0
760	27	30	15.1	-15.1	-33.9	17.3
740	34	36	18.8	-18.8	-37.1	39.9
720	33	22	18.3	-18.3	-16.6	13.7
700	-3	29	-1.7	1.7	2.8	-8.6
680	-2	-9	-1.1	1.1	-2.9	-14.1
660	7	5	4.0	-4.0	-11.4	-18.0
640	13	17	7.4	-7.4	-17.0	-25.5
620	17	4	9.6	-9.6	-29.4	-17.6
600	36	22	19.8	-19.8	-42.5	-3.6
580	44	32	23.7	-23.7	-47.0	15.1
560	43	19	23.3	-23.3	-46.1	19.8
540	42	34	22.8	-22.8	-31.9	3.4
520	16	21	9.1	-9.1	-26.3	5.9
500	31	42	17.2	-17.2	-28.5	13.1
480	20	20	11.3	-11.3	-20.4	2.2
460	16	22	9.1	-9.1	-15.4	-6.7
440	11	15	6.3	-6.3	-18.2	-3.3
420	21	21	11.9	-11.9	-24.9	11.3
400	23	24	13.0	-13.0	-21.5	3.4
380	15	6	8.5	-8.5	-13.6	-4.5
360	9	19	5.1	-5.1	-18.1	5.0
340	23	27	13.0	-13.0	-18.1	

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1550 m North continued						
320	9	20	5.1	-5.1	-13.1	
300	14	15	8.0	-8.0		
Line 1600 m North						
900	-2	29	-1.1	1.1	6.8	2.9
880	-10	27	-5.7	5.7	9.7	-2.9
860	-7	25	-4.0	4.0	9.7	6.3
840	-10	9	-5.7	5.7	6.8	-11.3
820	-2	1	-1.1	1.1	3.4	-9.7
800	-4	14	-2.3	2.3	-4.5	17.5
780	12	27	6.8	-6.8	-13.1	34.7
760	11	15	6.3	-6.3	13.0	-7.8
740	-35	32	-19.3	19.3	21.6	-14.1
720	-4	-22	-2.3	2.3	5.2	1.7
700	-5	-14	-2.9	2.9	7.5	-5.2
680	-8	-11	-4.6	4.6	6.9	-12.6
660	-4	-8	-2.3	2.3	2.3	-21.5
640	0	0	0	0	-5.7	-22.4
620	10	7	5.7	-5.7	-19.2	-15.7
600	24	8	13.5	-13.5	-28.1	-7.3
580	26	12	14.6	-14.6	-34.9	-5.4
560	34	17	20.3	-20.3	-35.4	2.8
540	27	13	15.1	-15.1	-40.3	22.7
520	47	38	25.2	-25.2	-32.6	10.0
500	13	8	7.4	-7.4	-17.6	-1.6
480	18	15	10.2	-10.2	-22.6	0.3
460	22	28	12.4	-12.4	-19.2	-3.9
440	12	8	6.8	-6.8	-22.3	4.7
420	24	19	13.5	-13.5	-23.1	6.6
400	17	12	9.6	-9.6	-17.6	-0.5
380	14	12	8.0	-8.0	-16.5	-0.5
360	15	15	8.5	-8.5	-18.1	4.4
340	17	18	9.6	-9.6	-17.0	
320	13	10	7.4	-7.4	-13.7	
300	11	10	6.3	-6.3		
Line 1650 m North						
900	-20	10	-11.3	11.3	31.1	-9.6
880	-36	-7	-19.8	19.8	27.8	-0.3

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1650 m North continued						
860	-14	24	-8.0	8.0	21.5	-1.8
840	-24	6	-13.5	13.5	27.5	-22.4
820	-25	6	14.0	-14.0	19.7	-19.7
800	-10	18	-5.7	5.7	5.1	-2.8
780	1	9	0.6	-0.6	0	-0.6
760	-1	10	-0.6	0.6	2.3	-2.9
740	-3	-15	-1.7	1.7	-0.6	5.2
720	4	0	2.3	-2.3	-0.6	4.6
700	-3	0	-1.7	1.7	4.6	-5.8
680	-5	21	-2.9	2.9	4.0	-17.6
660	-2	30	-1.1	1.1	-1.2	-19.7
640	4	-9	2.3	-2.3	-13.6	-4.5
620	20	-1	11.3	-11.3	-20.9	1.6
600	17	-10	9.6	-9.6	-18.1	-3.5
580	15	-10	8.5	-8.5	-19.3	-1.7
560	19	1	10.8	-10.8	-21.6	-3.7
540	19	2	10.8	-10.8	-21.0	-7.1
520	18	8	10.2	-10.2	-25.3	1.5
500	27	11	15.1	-15.1	-28.1	9.9
480	23	10	13.0	-13.0	-23.8	7.3
460	19	7	10.8	-10.8	-18.2	-3.3
440	13	6	7.4	-7.4	-16.5	-5.0
420	16	7	9.1	-9.1	-21.5	1.6
400	22	11	12.4	-12.4	-21.5	1.6
380	16	9	9.1	-9.1	-19.9	0.6
360	19	15	10.8	-10.8	-19.9	0.6
340	16	16	9.1	-9.1	-19.3	
320	18	17	10.2	-10.2	-19.3	
300	16	14	9.1	-9.1		
Line 1700 m North						
900	-100	-22	-45.0	45.0	63.8	-22.7
880	-34	5	-18.8	18.8	40.6	17.4
860	-40	-1	-21.8	21.8	41.1	51.3
840	-35	-13	-19.3	19.3	58.0	9.2
820	-80	-32	-38.7	38.7	92.4	-59.6
800	-136	-39	-53.7	53.7	67.2	-31.2
780	-24	-19	-13.5	13.5	32.8	-4.8
760	-35	-26	-19.3	19.3	36.0	-9.1
740	-30	-41	-16.7	16.7	28.0	-2.2

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1700 m North continued						
720	-20	-27	-11.3	11.3	26.9	-6.5
700	-28	-26	-15.6	15.6	25.8	28.8
680	-18	-34	-10.2	10.2	20.4	35.9
660	-18	-44	-10.2	10.2	54.6	-28.1
640	-98	-39	-44.4	44.4	56.3	-33.7
620	-21	-26	-11.9	11.9	26.5	-22.5
600	-26	-40	-14.6	14.6	22.6	-37.9
580	-14	-38	-8.0	8.0	4.0	-26.6
560	7	-21	4.0	-4.0	-15.3	-7.3
540	20	-12	11.3	-11.3	-22.6	-3.3
520	20	11	11.3	-11.3	-22.6	-8.2
500	20	0	11.3	-11.3	-25.9	-5.9
480	26	3	14.6	-14.6	-30.8	-1.0
460	29	5	16.2	-16.2	-31.8	3.7
440	28	5	15.6	-15.6	-31.8	6.4
420	29	12	16.2	-16.2	-28.1	-0.5
400	21	3	11.9	-11.9	-25.4	-4.8
380	24	8	13.5	-13.5	-28.6	-2.7
360	27	8	15.1	-15.1	-30.2	0.5
340	27	18	15.1	-15.1	-31.3	
320	29	23	16.2	-16.2	-29.7	
300	24	20	13.5	-13.5		
Line 1750 m North						
900	-98	-26	-44.4	44.4	95.1	-18.3
880	-122	-28	-50.7	50.7	100.9	-33.9
860	-120	-36	-50.2	50.2	76.8	2.3
840	-50	-25	-26.6	26.6	67.0	-80.7
820	-85	-42	-40.4	40.4	79.1	-99.7
800	-80	-43	-38.7	38.7	-13.7	82.4
780	130	-25	52.4	-52.4	-20.6	84.5
760	-62	-36	-31.8	31.8	68.7	-18.9
740	-75	-38	-36.9	36.9	63.9	-26.5
720	-51	-41	-27.0	27.0	49.8	20.8
700	-42	-39	-22.8	22.8	37.4	41.4
680	-26	-36	-14.6	14.6	70.6	-13.6
660	-148	-44	-56.0	56.0	78.8	-12.8
640	-42	-36	-22.8	22.8	57.0	23.0
620	-68	-41	-34.2	34.2	66.0	-6.5
600	-62	-39	-31.8	31.8	80.0	-58.5

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Conven-tion W dip	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}+(M_3+M_4)-(M_1+M_2)$
Line 1800 m North continued						
420	-13	-22	-7.4	7.4	15.4	-10.8
400	-14	-25	-8.0	8.0	9.7	2.3
380	-3	-15	-1.7	1.7	4.6	14.7
360	-5	-21	-2.9	2.9	12.0	17.5
340	-16	-15	-9.1	9.1	19.3	
320	-18	-19	-10.2	10.2	29.5	
300	-35	-13	-19.3	19.3		
Line 1850 m North						
1100	-19	4	-10.8	10.8	24.3	1.0
1080	-24	19	-13.5	13.5	23.7	8.1
1060	-18	5	-10.2	10.2	25.3	3.3
1040	-27	13	-15.1	15.1	31.8	-3.7
1020	-30	11	-16.7	16.7	28.6	11.8
1000	-21	13	-11.9	11.9	28.1	15.4
980	-29	4	-16.2	16.2	40.4	6.4
960	-45	6	-24.2	24.2	43.5	1.7
940	-35	7	-19.3	19.3	46.8	2.5
920	-52	3	-27.5	27.5	45.2	10.6
900	-32	-1	-17.7	17.7	44.3	10.5
880	-50	-7	-26.6	26.6	55.8	-8.4
860	-56	-5	-29.2	29.2	54.8	-9.3
840	-48	-9	-25.6	25.6	47.4	-11.3
820	-40	-7	-21.8	21.8	45.5	-28.0
800	-44	-13	-23.7	23.7	36.1	-13.3
780	-22	-8	-12.4	12.4	17.5	10.4
760	-9	-9	-5.1	5.1	22.8	3.0
740	-32	-11	-17.7	17.7	27.9	-2.1
720	-18	-9	-10.2	10.2	25.8	-1.0
700	-28	-20	-15.6	15.6	25.8	2.8
680	-18	-18	-10.2	10.2	24.8	-5.1
660	-26	-21	-14.6	14.6	28.6	-18.3
640	-25	-33	-14.0	14.0	19.7	12.2
620	-10	-31	-5.7	5.7	10.3	13.9
600	-8	-29	-4.6	4.6	7.5	27.3
580	-5	-24	-2.9	2.9	24.2	8.6
560	-39	-29	-21.3	21.3	34.8	-0.9
540	-24	-37	-13.5	13.5	32.8	8.8
520	-35	-35	-19.3	19.3	33 9	2.7
500	-26	-32	-14.6	14.6	41.6	-0.2

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1750 m North continued						
580	-112	-44	-48.2	48.2	59.5	-55.0
560	-20	-44	-11.3	11.3	21.5	-34.0
540	-18	-37	-10.2	10.2	4.5	-18.1
520	10	-26	5.7	-5.7	-12.5	-3.9
500	12	-28	6.8	-6.8	-13.6	-8.4
480	12	-12	6.8	-6.8	-16.4	1.1
460	17	-11	9.6	-9.6	-22.0	12.8
440	22	1	12.4	-12.4	-15.3	3.3
420	5	0	2.9	-2.9	-9.2	-7.8
400	11	-2	6.3	-6.3	-12.0	-13.3
380	10	0	5.7	-5.7	-17.0	-13.7
360	20	0	-11.3	-11.3	-25.3	-1.0
340	25	3	14.0	-14.0	-30.7	
320	30	9	16.7	-16.7	-26.3	
300	17	8	9.6	-9.6		
Line 1800 m North						
900	-69	6	-34.6	34.6	61.6	-66.1
880	-51	-8	-27.0	27.0	52.2	-50.1
860	-47	1	-25.2	25.2	-4.5	67.7
840	57	15	29.7	-29.7	2.1	43.3
820	-62	-17	-31.8	31.8	63.2	-30.4
800	-61	-31	-31.4	31.4	45.4	-11.0
780	-25	-17	-14.0	14.0	32.8	-3.7
760	-34	-15	-18.8	18.8	34.4	-4.2
740	-28	-20	-15.6	15.6	29.1	4.8
720	-24	-24	-13.5	13.5	30.2	3.2
700	-30	-22	-16.7	16.7	33.9	-2.6
680	-31	-24	-17.2	17.2	33.4	5.4
660	-29	-23	-16.2	16.2	31.3	17.1
640	-27	-28	-15.1	15.1	38.8	1.5
620	-44	-28	-23.7	23.7	48.4	-16.6
600	-46	-26	-24.7	24.7	40.3	-7.9
580	-28	-33	-15.6	15.6	31.8	-8.8
560	-29	-22	-16.2	16.2	32.4	-21.0
540	-29	-29	-16.2	16.2	23.0	-1.2
520	-12	-29	-6.8	6.8	11.4	9.2
500	-8	-24	-4.6	4.6	21.8	-4.9
480	-31	-26	-17.2	17.2	20.6	0.3
460	-6	-22	-3.4	3.4	16.9	-1.5
440	-24	-22	-13.5	13.5	20.9	-11.2

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1850 m North continued						
480	-51	-40	-27.0	27.0	36.6	24.0
460	-17	-26	-9.6	9.6	41.4	-4.6
440	-62	-25	-31.8	31.8	60.6	-35.9
420	-55	-28	-28.8	28.8	36.8	-15.5
400	-14	-30	-8.0	8.0	24.7	-14.4
380	-30	-35	-16.7	16.7	21.3	-9.9
360	-8	-27	-4.6	4.6	10.3	4.5
340	-10	-33	-5.7	5.7	11.4	
320	-10	-24	-5.7	5.7	14.8	
300	-16	-20	-9.1	9.1		
Line 1900 m North						
1100	-60	18	-31.0	31.0	53.3	-27.9
1080	-41	13	-22.3	22.3	36.9	-14.8
1060	-26	4	-14.6	14.6	25.4	5.7
1040	-19	14	-10.8	10.8	22.1	20.0
1020	-20	11	-11.3	11.3	31.1	15.9
1000	-36	9	-19.8	19.8	42.1	4.4
980	-41	10	-22.3	22.3	47.0	-3.4
960	-46	9	-24.7	24.7	46.5	3.2
940	-40	0	-21.8	21.8	43.6	13.5
920	-40	8	-21.8	21.8	49.7	0.8
900	-53	-2	-27.9	27.9	57.1	-11.6
880	-56	-17	-29.2	29.2	50.5	-7.5
860	-39	-5	-21.3	21.3	45.5	-2.5
840	-45	-7	-24.2	24.2	43.0	-23.1
820	-34	-11	-18.8	18.8	30.7	-14.7
800	-21	-9	-11.9	11.9	19.9	-5.6
780	-14	-16	-8.0	8.0	16.0	-2.3
760	-14	-14	-8.0	8.0	14.3	-0.1
740	-11	-15	-6.3	6.3	13.7	1.1
720	-13	-22	-7.4	7.4	14.2	-7.9
700	-12	-23	-6.8	6.8	14.8	-19.9
680	-14	-23	-8.0	8.0	6.3	-9.7
660	3	-26	1.7	-1.7	-5.1	2.8
640	6	-23	3.4	-3.4	-3.4	
620	0	-21	0	0	2.3	
600	-4	-20	-2.3	2.3		

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 1950 m North						
1100	-37	8	-20.3	20.3	39.1	5.2
1080	-34	11	-18.8	18.8	45.4	-16.4
1060	-50	27	-26.6	26.6	44.3	-18.4
1040	-32	19	-17.7	17.7	29.0	-0.9
1020	-20	14	-11.3	11.3	25.9	-2.2
1000	-26	5	-14.6	14.6	28.1	-1.2
980	-24	8	-13.5	13.5	23.7	-31.2
960	-18	15	-10.2	10.2	26.9	-33.9
940	-30	8	-16.7	16.7	-7.5	40.9
920	45	-7	24.2	-24.2	-7.0	42.0
900	-31	-9	-17.2	17.2	33.4	2.6
880	-29	-7	-16.2	16.2	35.0	-1.1
860	-34	-6	-18.8	18.8	36.0	-4.2
840	-31	-6	-17.2	17.2	33.9	-16.4
820	-30	-8	-16.7	16.7	31.8	-10.3
800	-27	-12	-15.1	15.1	27.5	-7.1
780	-22	-15	-12.4	12.4	21.5	-2.2
760	-16	-17	-9.1	9.1	20.4	-7.3
740	-20	-23	-11.3	11.3	19.3	-13.6
720	-14	-26	-8.0	8.0	13.1	-21.6
700	-9	-23	-5.1	5.1	5.7	-26.1
680	-1	-27	-0.6	0.6	-8.5	-13.6
660	16	23	9.1	-9.1	-20.4	4.5
640	20	-25	11.3	-11.3	-22.1	
620	19	-26	10.8	-10.8	-15.9	
600	9	-27	5.1	-5.1		
Line 2000 m North						
1100	-25	0	-14.0	14.0	42.8	-17.4
1080	-55	11	-28.8	28.8	43.4	-24.1
1060	-26	2	-14.6	14.6	25.4	-10.6
1040	-19	4	-10.8	10.8	19.3	1.6
1020	-15	5	-8.5	8.5	14.8	8.3
1000	-11	9	-6.3	6,3	20.9	-6.7
980	-26	10	-14.6	14.6	23.1	-10.0
960	-15	1	-8.5	8.5	14.2	-3.4
940	-10	10	-5.7	5.7	13.1	16.4
920	-13	14	-7.4	7.4	17.6	17.3
900	-18	10	-10.2	10.2	29.5	-2.0
880	-35	-4	-19.3	19.3	34.9	-13.9

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2000 m North continued						
860	-28	-7	-15.6	15.6	27.5	-5.4
840	-21	-5	-11.9	11.9	21.0	-0.6
820	-16	-6	-9.1	9.1	22.1	-13.6
800	-23	-13	-13.0	13.0	20.4	-14.7
780	-13	-10	-7.4	7.4	8.5	2.9
760	-2	-7	-1.1	1.1	5.7	4.5
740	-8	-15	-4.6	4.6	11.4	-6.9
720	-12	-18	-6.8	6.8	10.2	-6.8
700	-6	-19	-3.4	3.4	4.5	-2.8
680	-2	-22	-1.1	1.1	3.4	-4.0
660	-4	-20	-2.3	2.3	1.7	-3.4
640	1	-40	0.6	-0.6	-0.6	
620	0	-29	0	0	-1.7	
600	3	-35	1.7	-1.7		
Line 2050 m North						
1100	-25	0	-14.0	14.0	29.6	-8.7
1080	-28	-1	-15.6	15.6	26.9	-14.4
1060	-20	3	-11.3	11.3	20.9	-18.0
1040	-17	3	-9.6	9.6	12.5	-10.8
1020	-5	8	-2.9	2.9	2.9	2.2
1000	0	8	0	0	1.7	5.7
980	-3	4	-1.7	1.7	5.1	4.6
960	-6	10	-3.4	3.4	7.4	5.1
940	-7	18	-4.0	4.0	9.7	9.5
920	-10	17	-5.7	5.7	12.5	11.8
900	-12	12	-6.8	6.8	19.2	3.5
880	-22	4	-12.4	12.4	24.3	-4.4
860	-21	-8	-11.9	11.9	22.7	-7.3
840	-19	-9	-10.8	10.8	19.9	-8.5
820	-16	-9	-9.1	9.1	15.4	-6.9
800	-11	-11	-6.3	6.3	11.4	-5.1
780	-9	-17	-5.1	5.1	8.5	-5.6
760	-6	-12	-3.4	3.4	6.3	-6.9
740	-5	-20	-2.9	2.9	2.9	-5.2
720	0	-18	0	0	-0.6	-5.7
700	1	-18	0.6	-0.6	-2.3	-9.1
680	3	-20	1.7	-1.7	-6.3	-8.5
660	8	-31	4.6	-4.6	-11.4	-2.3
640	12	-27	6.8	-6.8	-14.8	

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2050 m North continued						
620	14	-25	8.0	-8.0	-13.7	
600	10	-35	5.7	-5.7		
Line 2100 m North						
1100	-55	7	-28.8	28.8	46.0	-24.7
1080	-31	2	-17.2	17.2	33.4	-28.9
1060	-29	4	-16.2	16.2	21.3	-24.2
1040	-9	0	-5.1	5.1	4.5	-3.4
1020	1	10	0.6	-0.6	-2.9	5.2
1000	4	10	2.3	-2.3	1.1	-6.8
980	-6	8	-3.4	3.4	2.3	-14.3
960	2	8	1.1	-1.1	-5.7	2.9
940	8	20	4.6	-4.6	-12.0	20.0
920	13	21	7.4	-7.4	-2.8	12.5
900	-8	9	-4.6	4.6	8.0	9.1
880	-6	3	-3.4	3.4	9.7	7.4
860	-11	-4	-6.3	6.3	17.1	-1.2
840	-19	-12	-10.8	10.8	17.1	3.3
820	-11	-16	-6.3	6.3	15.9	-0.5
800	-17	-20	-9.6	9.6	20.4	-15.8
780	-19	-18	-10.8	10.8	15.4	-13.1
760	-8	-14	-4.6	4.6	4.6	0
740	0	-16	0	0	2.3	0
720	-4	-26	-2.3	2.3	4.6	-6.9
700	-4	-27	-2.3	2.3	2.3	-10.9
680	0	-28	0	0	-2.3	-9.7
660	4	-26	2.3	-2.3	-8.6	-11.1
640	11	-25	6.3	-6.3	-12.0	
620	10	-33	5.7	-5.7	-19.7	
600	25	-43	14.0	-14.0		
Line 2150 m North						
1100	-44	3	-23.7	23.7	40.4	-18.4
1080	-30	3	-16.7	16.7	30.7	-22.7
1060	-25	0	-14.0	14.0	22.0	-28.3
1040	-14	0	-8.0	8.0	8.0	-19.4
1020	0	3	0	0	-6.3	-25.4
1000	11	6	6.3	-6.3	-11.4	-21.5
980	9	8	5.1	-5.1	-31.7	18.6

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2150 m North continued						
960	50	36	26.6	-26.6	-32.9	23.8
940	11	14	6.3	-6.3	-13.1	10.8
920	12	18	6.8	-6.8	-9.1	16.5
900	4	12	2.3	-2.3	-2.3	22.1
880	0	7	0	0	7.4	15.2
860	-13	-4	-7.4	7.4	19.8	1.7
840	-22	-19	-12.4	12.4	22.6	7.5
820	-18	-18	-10.2	10.2	21.5	11.3
800	-20	-27	-11.3	11.3	30.1	-5.3
780	-34	-40	-18.8	18.8	32.8	-15.7
760	-25	-36	-14.0	14.0	24.8	-16.8
740	-19	-36	-10.8	10.8	17.1	-21.1
720	-11	-34	-6.3	6.3	8.0	-17.1
700	-3	-29	-1.7	1.7	-4.0	-6.8
680	10	-40	5.7	-5.7	-9.1	1.7
660	6	-29	3.4	-3.4	-10.8	6.2
640	13	-41	7.4	-7.4	-7.4	
620	0	-35	0	0	-4,6	
600	8	-33	4.6	-4.6		
Line 2200 m North						
1100	-45	0	-24.2	24.2	50.3	-9.1
1080	-49	0	-26.1	26.1	52.7	-25.7
1060	-50	-1	-26.6	26.6	41.2	-31.7
1040	-26	-2	-14.6	14.6	27.0	-36.7
1020	-22	-3	-12.4	12.4	9.5	-28.2
1000	5	6	2.9	-2.9	-9.7	-12.2
980	12	8	6.8	-6.8	-18.7	2.2
960	21	18	11.9	-11.9	-19.9	2.3
940	14	21	8.0	-8.0	-16.5	2.3
920	15	28	8.5	-8.5	-17.6	10.8
900	16	18	9.1	-9.1	-14.2	15.9
880	9	31	5.1	-5.1	-6.8	17.6
860	3	0	1.7	-1.7	1.7	13.1
840	-6	-21	-3.4	3.4	10.8	2.9
820	-13	-26	-7.4	7.4	14.8	-5.1
800	-13	-25	-7.4	7.4	13.7	-8.0
780	-11	-26	-6.3	6.3	9.7	-3.4
760	-6	-23	-3.4	3.4	5.7	-6.3
740	-4	-23	-2.3	2.3	2.3	-12.5
720	0	-32	0	0	-0.6	-15.3

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2200 m North continued						
700	1	-23	0.6	-0.6	-10.2	-7.4
680	17	-24	9.6	-9.6	-15.9	1.7
660	11	-33	6.3	-6.3	-17.6	3.9
640	20	-37	11.3	-11.3	-14.2	
620	5	-38	2.9	-2.9	-13.7	
600	19	-40	10.8	-10.8		
Line 2250 m North						
1100	-49	-2	26.1	-26.1	2.7	40.4
1080	-55	0	-28.8	28.8	50.6	-14.7
1060	-40	-3	-21.8	21.8	43.1	-16.6
1040	-39	-4	-21.3	21.3	35.9	-22.3
1020	-26	-6	-14.6	14.6	26.5	-33.4
1000	-21	-5	-11.9	11.9	13.6	-34.0
980	-3	5	-1.7	1.7	-6.9	-16.9
960	17	14	9.6	-9.6	-20.4	0.6
940	19	17	10.8	-10.8	-23.8	24.4
920	23	25	13.0	-13.0	-19.8	33.5
900	12	29	6.8	-6.8	0.6	9.7
880	-13	-20	-7.4	7.4	13.7	-9.1
860	-11	-10	-6.3	6.3	10.3	-9.7
840	-7	-13	-4.0	4.0	4.6	-0.6
820	-1	-15	-0.6	0.6	0.6	9.1
800	0	-24	0	0	4.0	4.6
780	-7	-22	-4.0	4.0	9.7	-5.7
760	-10	-36	-5.7	5.7	8.6	-9.2
740	-5	-25	-2.9	2.9	4.0	-13.7
720	-2	-28	-1.1	1.1	-0.6	-25.7
700	3	-30	1.7	-1.7	-9.7	-17.7
680	14	-36	8.0	-8.0	-26.3	6.4
660	33	-40	18.3	-18.3	-27.4	2.0
640	16	-26	9.1	-9.1	-19.9	
620	19	-25	10.8	-10.8	-25.4	
600	26	-31	14.6	-14.6		
Line 2300 m North						
1100	-54	-1	-28.4	28.4	55.4	-1.1
1080	-51	-4	-27.0	27.0	57.1	-18.3
1060	-68	0	-30.1	30.1	54.3	-27.8
1040	-45	0	-24.2	24.2	38.8	-21.2

APPENDIX E

EM16 Data and Fraserfilter Results

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2300 m North continued						
1020	-26	-3	-14.6	14.6	26.5	-20.8
1000	-21	-2	-11.9	11.9	17.6	-21.6
980	-10	3	-5.7	5.7	5.7	-12.0
960	0	10	0	0	-4.0	1.7
940	7	12	4.0	-4.0	-6.3	18.2
920	4	15	2.3	-2.3	-2.3	21.6
900	0	12	0	0	11.9	-4.5
880	-21	-11	-11.9	11.9	19.3	-18.7
860	-13	-22	-7.4	7.4	7.4	-7.4
840	0	-10	0	0	0.6	-0.6
820	-1	-13	-0.6	0.6	0	0.6
800	1	-22	0.6	-0.6	0	-2.3
780	-1	-22	-0.6	0.6	0.6	-5.2
760	0	-30	0	0	-2.3	-11.9
740	4	-26	2.3	-2.3	-4.6	-22.9
720	4	-29	2.3	-2.3	-14.2	-11.0
700	21	-36	11.9	-11.9	-27.5	5.5
680	28	-32	15.6	-15.6	-25.2	-8.5
660	17	-24	9.6	-9.6	-22.0	-30.3
640	22	-29	12.4	-12.4	-33.7	
620	39	-27	21.3	-21.3	-52.3	
600	60	-39	31.0	31.0		
Line 2350 m North						
1100	-29	0	-16.2	16.2	41.8	-3.2
1080	-48	0	-25.6	25.6	44.9	-15.4
1060	-35	-2	-19.3	19.3	38.6	-12.2
1040	-35	0	-19.3	19.3	29.5	-4.2
1020	-18	-2	-10.2	10.2	26.4	-11.6
1000	-29	1	-16.2	16.2	-25.3	-19.6
980	-16	0	-9.1	9.1	14.8	-11.4
960	-10	10	-5.7	5.7	5.7	6.2
940	0	12	0	0	3.4	5.1
920	-6	6	-3.4	3.4	11.9	-11.9
900	-15	1	-8.5	8.5	8.5	-9.1
880	0	4	0	0	0	-2.3
860	0	-3	0	0	-0.6	0
840	1	-11	0.6	-0.6	-2.3	5.7
820	3	-12	1.7	-1.7	-0.6	2.3
800	-2	-16	-1.1	1.1	3.4	-5.1
780	-4	-24	-2.3	2.3	1.7	-4.5
760	1	-24	0.6	-0.6	-1.7	-6.3

APPENDIX E

EM16 Data and Fraser-filter Results

Longitude m West	In-phase %	Quad-rature %	Dip Angle ArcTan in-phase% / 100	Sign Conven-tion W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
Line 2350 m North continued						
740	2	-32	1.1	-1.1	-2.8	-17.5
720	3	-21	1.7	-1.7	-8.0	-39.4
700	11	-28	6.3	-6.3	-20.3	-32.9
680	25	-23	14.0	-14.0	-47.4	0.1
660	66	-33	33.4	-33.4	-53.2	-16.3
640	36	-30	19.8	-19.8	-47.3	
620	52	-31	27.5	-27.5	-69.5	
600	90	-35	42,0	-42.0		
Line 2400 m North						
1100	-35	4	-19.3	19.3	50.3	-10.3
1080	-60	6	-31.0	31.0	54.7	-19.2
1060	-44	-4	-23.7	23.7	43.0	-16.0
1040	-35	-3	-19.3	19.3	35.5	-12.3
1020	-29	1	-16.2	16.2	27.0	-0.6
1000	-19	-2	-10.8	10.8	23.2	42.1
980	-22	-2	-12.4	12.4	26.4	49.1
960	-25	-2	-14.0	14.0	65.3	-23.9
940	-125	16	-51.3	51.3	75.5	-40.6
920	-45	-6	-24.2	24.2	41.4	-2.9
900	-31	-9	-17.2	17.2	34.9	-6.1
880	-32	-12	-17.7	17.7	38.5	-28.2
860	-38	-11	-20.8	20.8	28.8	-25.9
840	-14	-8	-8.0	8.0	10.3	-19.3
820	-4	-10	-2.3	2.3	2.9	-19.3
800	-1	-19	-0.6	0.6	-9.0	0.5
780	17	-17	9.6	-9.6	-16.4	9.0
760	12	-17	6.8	-6.8	-8.5	-6.3
740	3	-22	1.7	-1.7	-7.4	-32.7
720	10	-33	5.7	-5.7	-14.8	-36.0
700	16	-33	9.1	-9.1	-40.1	-1.5
680	60	-29	31.0	-31.0	-50.8	1.1
660	36	-35	19.8	-19.8	-41.6	-0.3
640	40	-38	21.8	-21.8	-49.7	
620	53	-38	27.9	-27.9	-41.9	
600	25	-32	14.0	-14.0		
Line 2450 m North						
1100	-58	18	-30.1	30.1	50.9	-11.9
1080	-38	3	-20.8	20.8	42.6	-1.8
1060	-40	2	-21.8	21.8	39.0	4.5

APPENDIX E

EM16 Data and Fraser-filter Results

Line 2450 m North continued

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
1040	-31	-3	-17.2	17.2	41.4	-9.1
1020	-45	-2	-24.2	24.2	43.5	-11.7
1000	-35	0	-19.3	19.3	32.3	17.5
980	-23	-1	-13.0	13.0	31.8	13.8
960	-34	10	-18.8	18.8	49.8	-22.2
940	-60	10	-31.0	31.0	45.6	-21.3
920	-26	-1	-14.6	14.6	27.6	2.0
900	-23	3	-13.0	13.0	24.3	8.4
880	-20	-7	-11.3	11.3	29.6	-3.2
860	-33	-10	-18.3	18.3	33.9	-18.5
840	-28	-14	-15.6	15.6	26.4	-20.1
820	-19	-11	-10.8	10.8	15.4	-17.1
800	-8	-11	-4.6	4.6	6.3	-15.4
780	-3	-8	-1.7	1.7	-1.7	-9.1
760	6	-10	3.4	-3.4	-9.1	-6.9
740	10	-20	5.7	-5.7	-10.8	-17.3
720	9	-27	5.1	-5.1	-16.0	-23.5
700	21	-30	11.9	-11.9	-28.1	-15.5
680	29	-21	16.2	-16.2	-39.5	-1.6
660	43	-32	23.3	-23.3	-43.6	8.2
640	37	-29	20.3	-20.3	-41.1	
620	38	-30	20.8	-20.8	-35.4	
600	26	-29	14.6	-14.6		

Line 2500 m North

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
1100	-33	-5	-18.3	18.3	40.1	-17.0
1080	-40	-2	-21.8	21.8	30.9	-7.8
1060	-16	0	-9.1	9.1	23.1	-6.0
1040	-25	0	-14.0	14.0	23.1	-10.5
1020	-16	-1	-9.1	9.1	17.1	-5.1
1000	-14	-3	-8.0	8.0	12.6	-3.5
980	-8	0	-4.6	4.6	12.0	-0.7
960	-13	1	-7.4	7.4	9.1	17.2
940	-3	4	-1.7	1.7	11.3	19.4
920	-17	3	-9.6	9.6	26.3	7.0
900	-30	-2	-16.7	16.7	30.7	12.3
880	-25	-7	-14.0	14.0	33.3	9.7
860	-35	-5	-19.3	19.3	43.0	-4.4
840	-44	-6	-23.7	23.7	43.0	-11.3
820	-35	-11	-19.3	19.3	38.6	-19.9
800	-35	-13	-19.3	19.3	31.7	-27.7
780	-22	-10	-12.4	12.4	18.7	-22.1

APPENDIX E

EM16 Data and Fraser-filter Results

Line 2500 m North continued

Longitude m West	In-phase %	Quadrature %	Dip Angle ArcTan $\frac{\text{in-phase\%}}{100}$	Sign Convention W dip+	Moving sum of Pairs of Entries (M_1+M_2)	Filtered Output 1st. Difference Alternate Entries $f_{2,3}=(M_3+M_4)-(M_1+M_2)$
760	-11	-14	-6.3	6.3	4.0	-12.5
740	4	-12	2.3	-2.3	-3.4	-18.0
720	2	-20	1.1	-1.1	-8.5	-22.7
700	13	-16	7.4	-7.4	-21.4	-22.4
680	25	-19	14.0	-14.0	-31.2	-12.1
660	31	-26	17.2	-17.2	-43.8	11.8
640	50	-13	26.6	-26.6	-43.3	
620	30	-21	16.7	-16.7	-37.0	
600	37	-33	20.3	-20.3		

APPENDIX F

CERTIFICATE OF QUALIFICATION

I, Lawrence R. Solkoski, of 50-3425 EAst 49th. Avenue in the City of Vancouver, British Columbia do hereby certify:

That I am a self-employed consulting geologist with office at 807 East 6th. Avenue, Vancouver, British Columbia;

That I am a graduate of the University of Manitoba where I did obtain my Bachelor of Science degree in Geology in 1973;

That I am a Member of the Geological Association of Canada;

That my principal employment since graduation has been in the field of mineral exploration and that my experience in Canada, The United States of America, The Philippines and Malaysia has been in a wide range of geological environments;

That this report is based on a review of the published literature on the Iva-Fern Property and legal agreements between Agincourt Explorations Inc. and the optionors of the property, and on work conducted and supervised by me on the Iva-Fern Property from September 21 to October 20, 1986.

That I have no interest in the Iva-Fern Property nor in the securities of Agincourt Explorations Inc.

Dated at Vancouver, British Columbia, this 30th. day of December, 1986.

Lawrence R. Solkoski
Consulting Geologist

APPENDIX F

CERTIFICATE OF QUALIFICATION

I, C. Geoffrey Spearing, of 1825 Palmerston Avenue in the City of West Vancouver, Province of British Columbia do hereby certify:

That I am a self-employed mining engineer with office at suite 701, 543 Granville Street, Vancouver, British Columbia;

That I am a graduate of Queen's University at Kingston where I did obtain my Bachelor of Science degree in Mining Engineering in 1986;

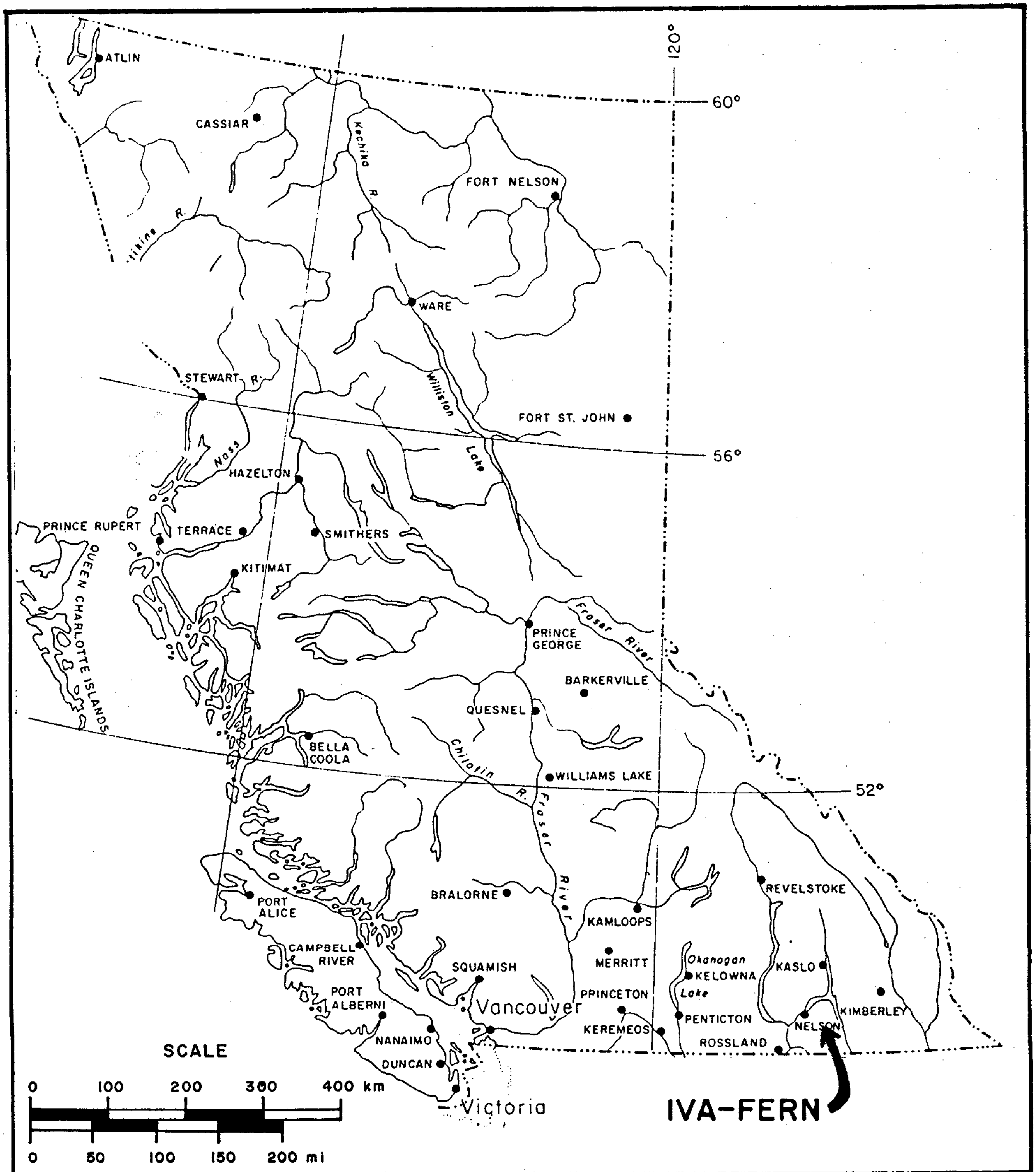
That my principal employment since 1985 has been in the field of mineral exploration;

That this report is based on data supplied by Agincourt Explorations Inc. on literature and documentation available for public inspection, and on data generated by work conducted and supervised by me on the Iva-Fern Property from September 21, 1986 to October 20, 1986;

That I have no interest in the Iva-Fern Property nor in the securities of Agincourt Explorations Inc. nor do I expect to receive any.

Dated at Vancouver, this 30th day of December, 1986.

C. Geoffery Spearing, B.Sc.(Eng.)
Consulting Mining Engineer



L.R. Solkoski
Spearing

Figure 1

CASSIAR EAST YUKON EXP. LTD.

AGINCOURT EXPLORATIONS INC.

GENERAL LOCATION

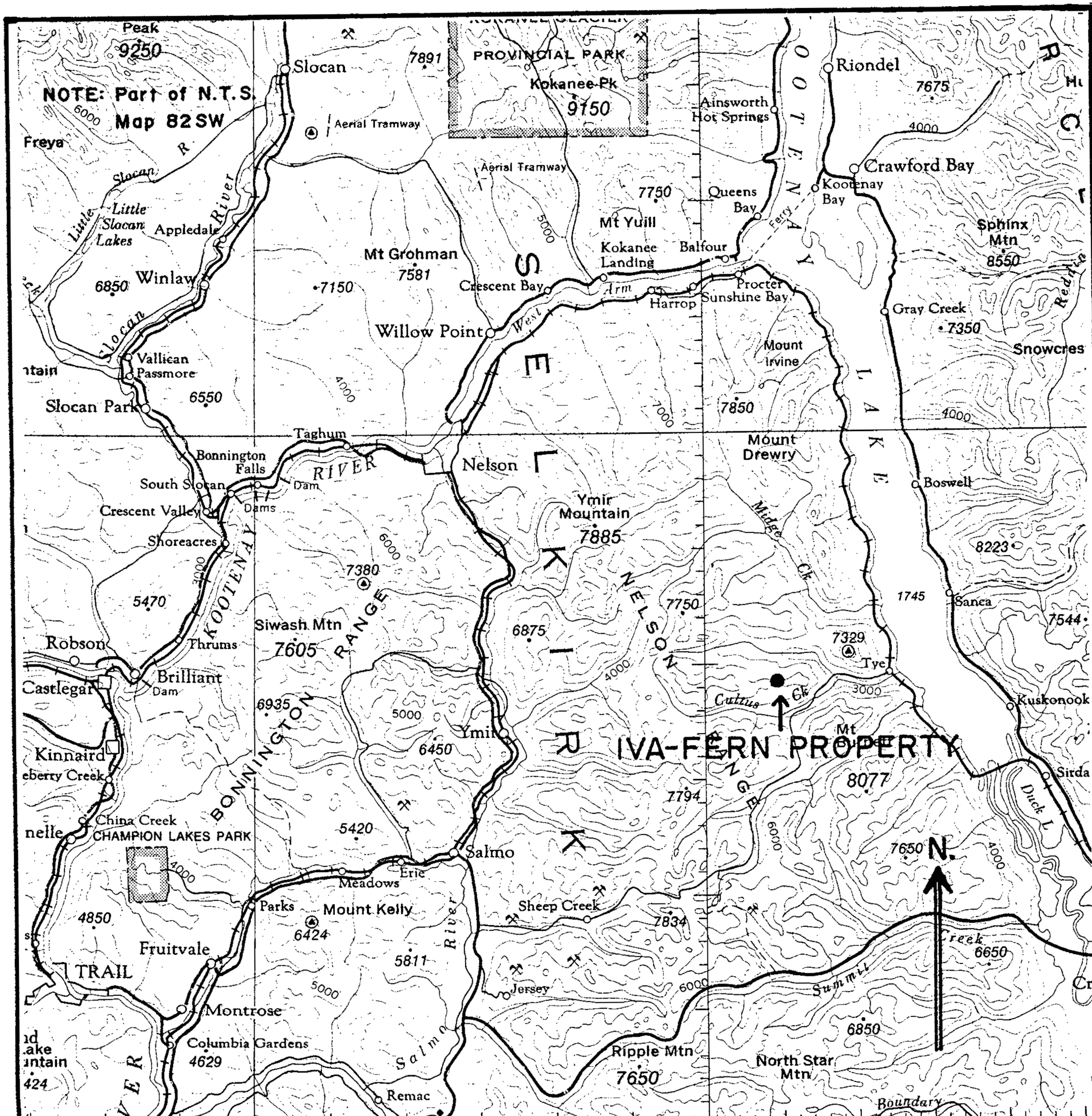
IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON M.D. BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



L.R. Solkoski
C.G. Spearing

CASSIAR EAST YUKON EXP. LTD.

Figure 2

SCALE

0 10 20 30 km

0 10 20 mi

AGINCOURT EXPLORATIONS INC.

REGIONAL ACCESS

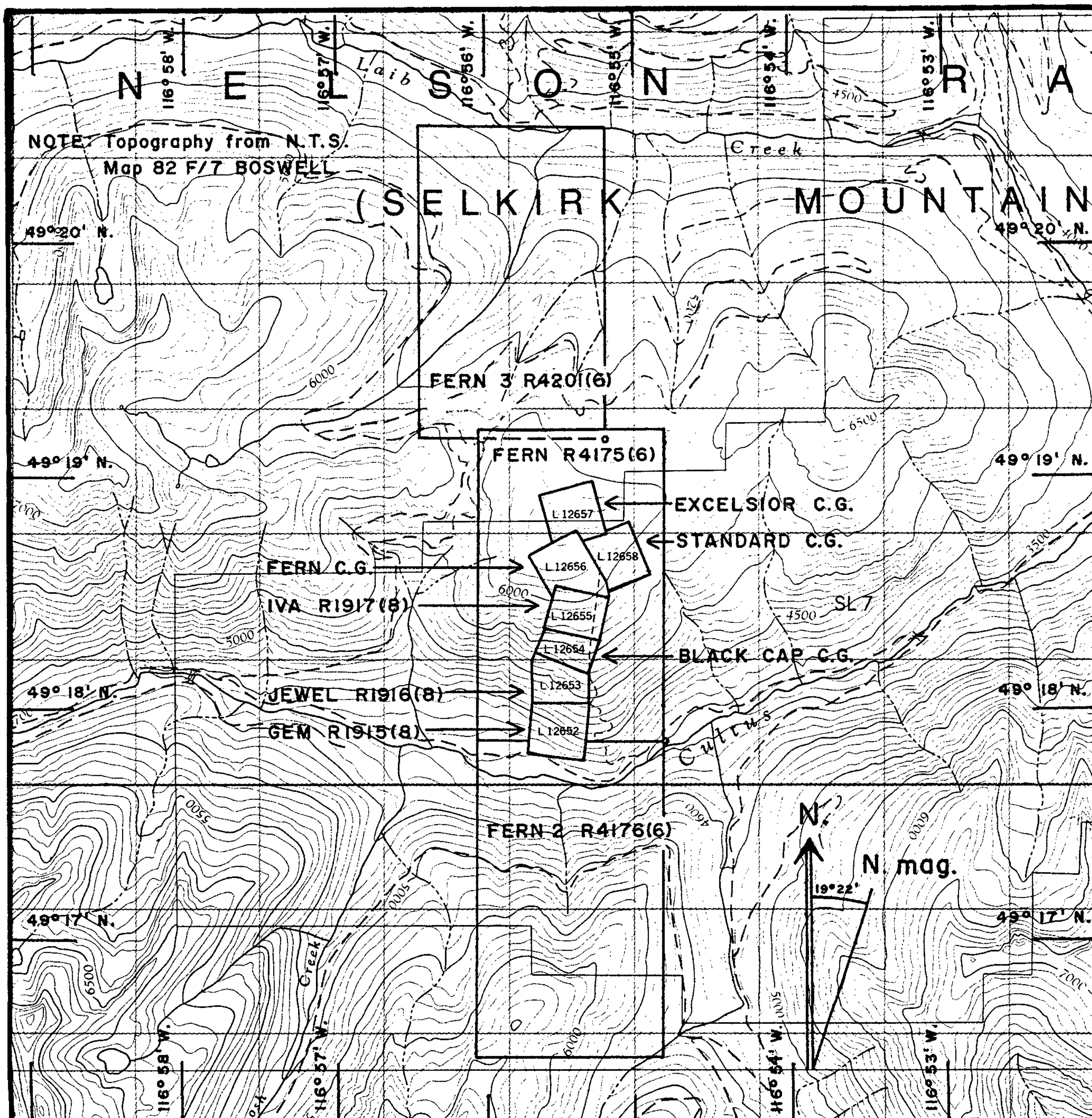
IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON M.D. BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc. DECEMBER, 1986

C.G. SPEARING, B.Sc.(Eng.)



LOCATION

SCALE

0 1 2 3 km

0 1 2 mi

Figure 3

CASSIAR EAST YUKON EXP. LTD.

AGINCOURT EXPLORATIONS INC.

LOCATION AND TERRAIN

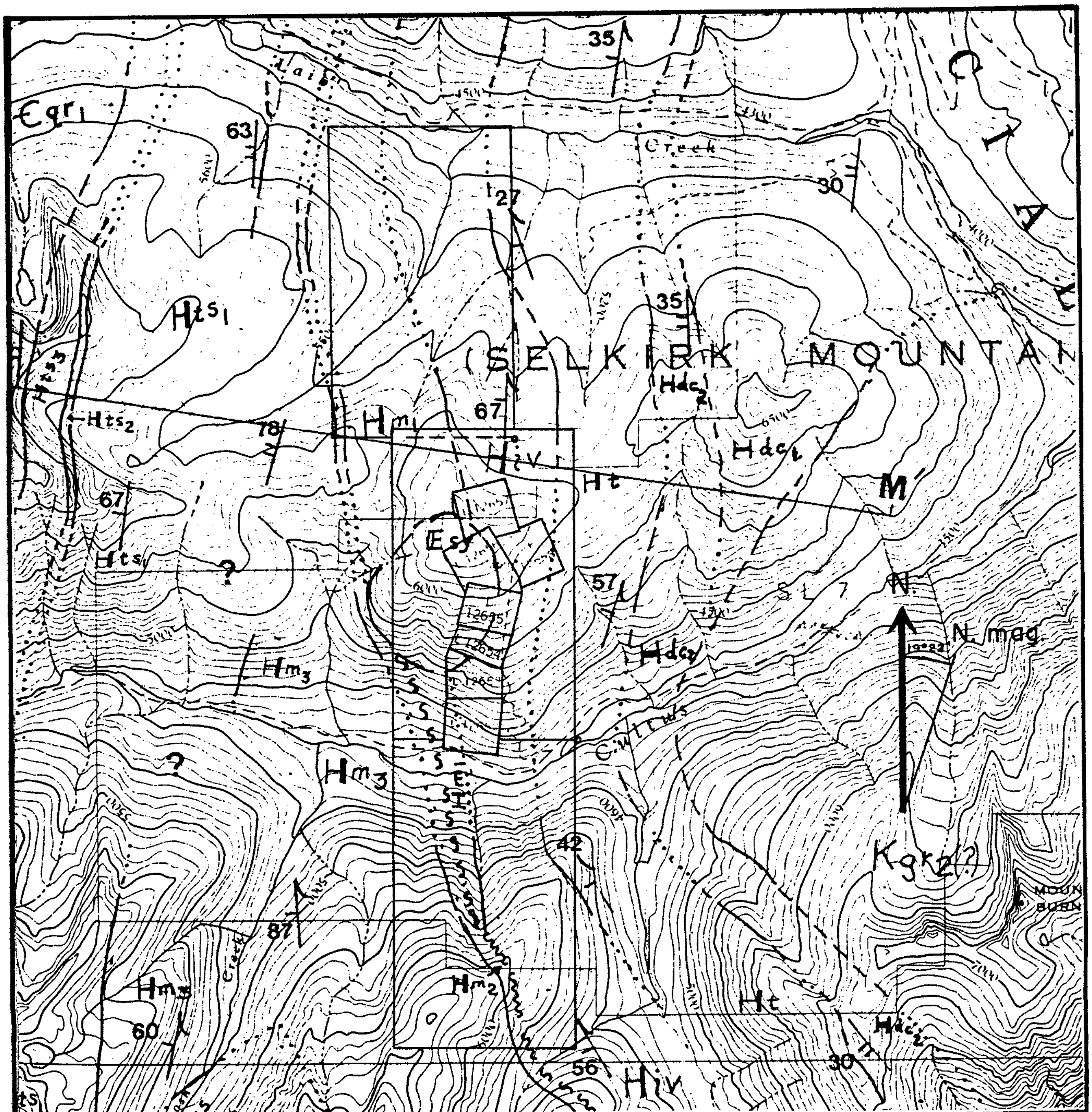
IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON M.D. BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



NOTES:
Geology is from Geological Survey of Canada Open File No. 929
For legend see Figure 4A

Figure 4

SCALE
0 1 2 3 km
0 1 2 mi

AGINCOURT EXPLORATIONS INC.

GENERAL GEOLOGY

IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON M.D.
BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

Figure 4A

Legend to General Geology

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

Qd	Drift covered; till, alluvium, colluvium

EOCENE(?)

Esy	Syenite, shonkinite

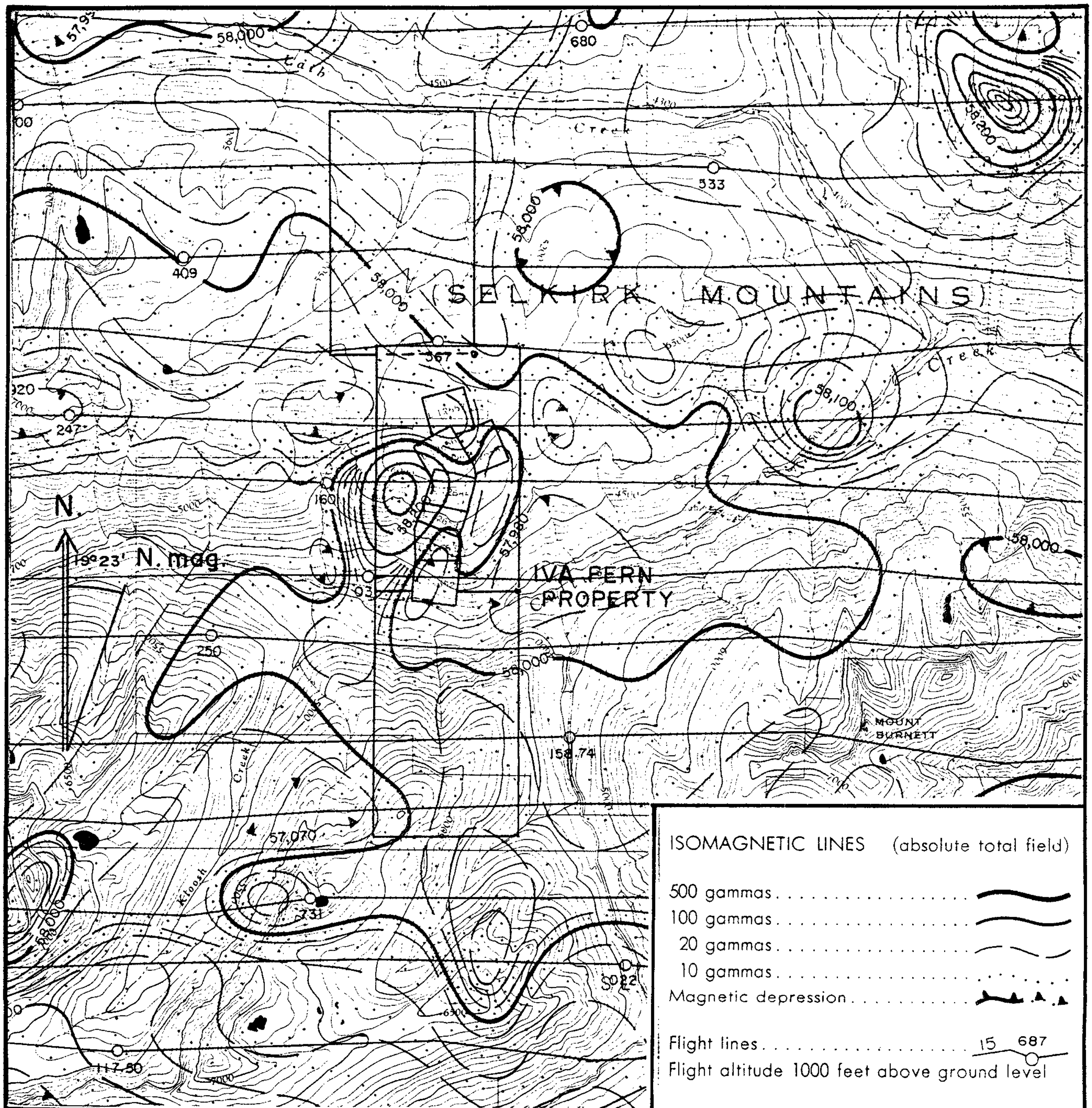
PROTEROZOIC

HADRYNIAN

WINDERMERE SUPERGROUP (Hts to Ht)

HORSETHIEF CREEK GROUP (Hts to Hm)

Hts	***THREE SISTERS FORMATION:*** undivided
Hts_3	Quartzite; grit
Hts_2	Polymict conglomerate
Hts_1	Interbedded grit and quartzite; quartz-pebble conglomerate and phyllite
Hm	***MONK FORMATION:*** undivided
Hm_3	Grey phyllite; black graphitic phyllite
Hm_2	Laminated limestone
Hm_1	Grey phyllite; quartzite
Hiv	***IRENE VOLCANIC FORMATION:*** Massive to schistose greenstone, mafic tuff; phyllite. xxxxx Dolomite horizon
Ht	***TOBY FORMATION:*** Plymict conglomerate; conglomerate quartzite and pelite; quartzite



NOTES: Aeromagnetic survey is from Geological Survey of Canada, Map 8476G.

Topography is from N.T.S Map 82 F/7 BOSWELL

SCALE

0 1 2 3 4 5 km

0 1 2 3 mi

AGINCOURT EXPLORATIONS INC.

AEROMAGNETIC SURVEY

IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON M.D.

BRITISH COLUMBIA

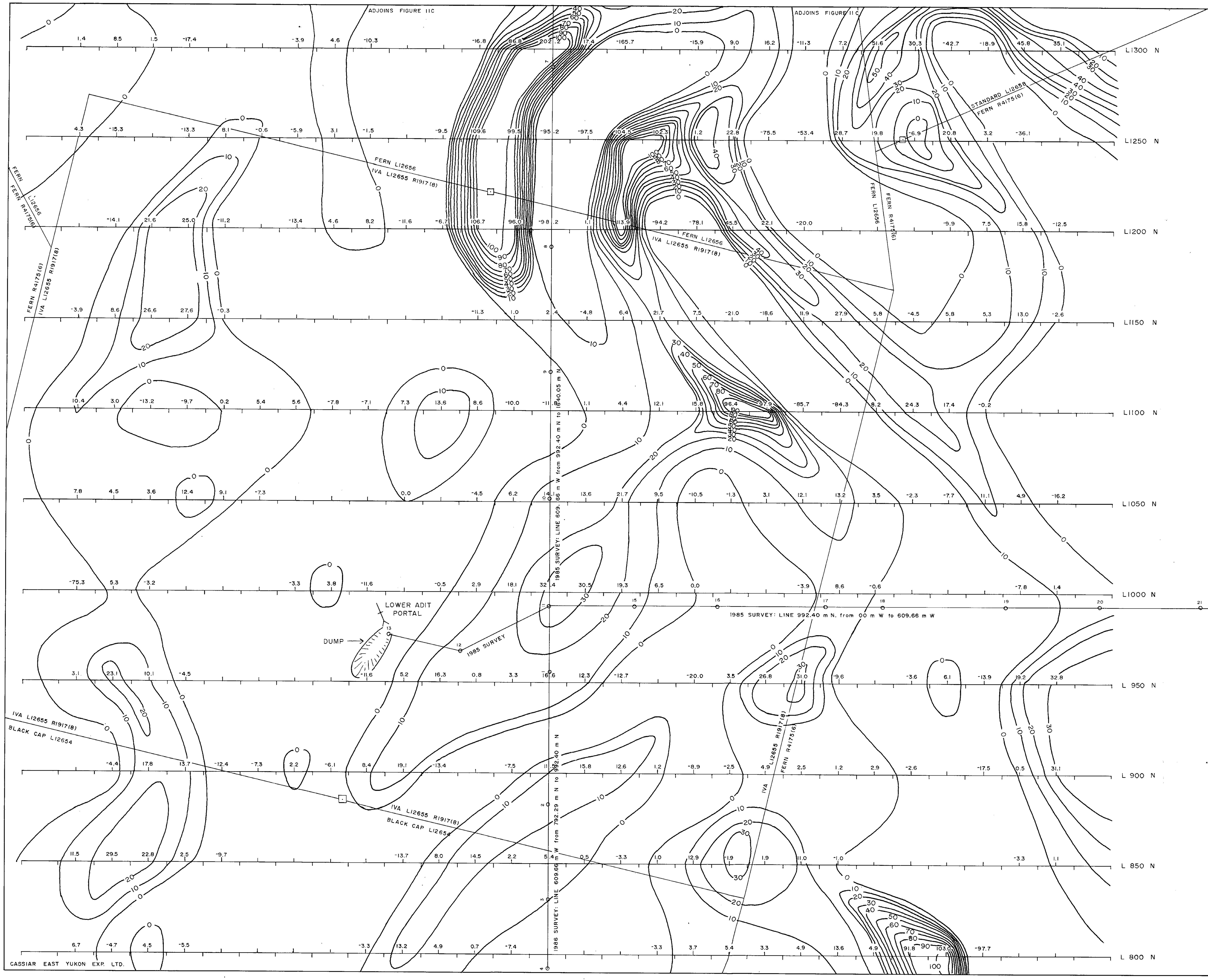
L.R. SOLKOSKI, B.Sc.

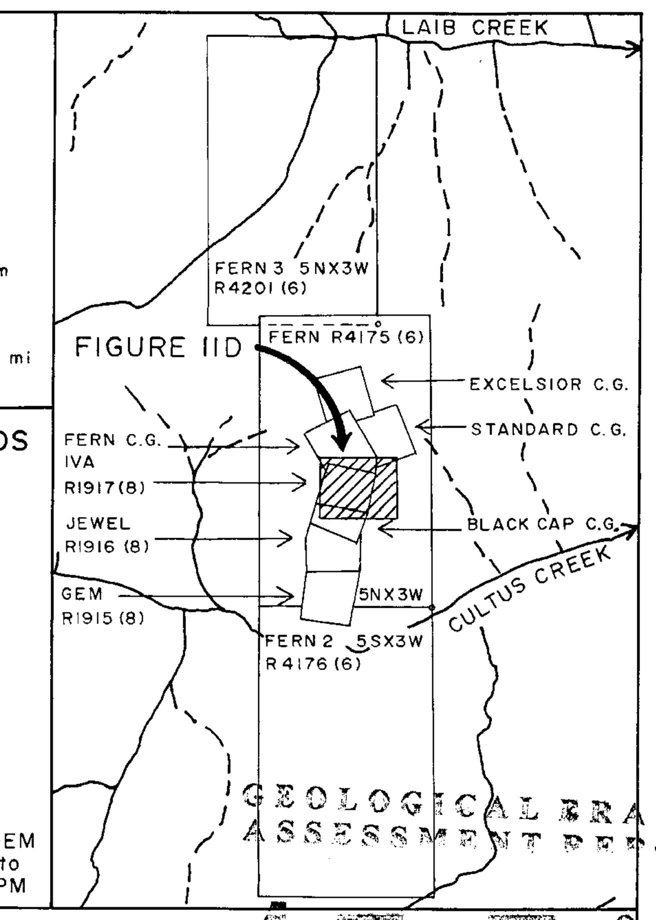
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

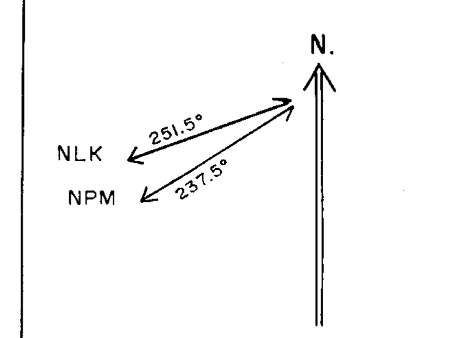
Figure 12

CASSIAR EAST YUKON EXP. LTD.





VLF-EM PRIMARY FIELDS



NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM

GEOLOGICAL BRANCH ASSESSMENT REPORT

15,567

LEGEND

1986 EM16 Survey

Fraser-filtered data: f1=(M3+M4)-(M1+M2)

L1150 N — Line designation; EM16 raw data; Fraser-filtered data contour

Transit survey, grid and claim lines: grid line; transit survey hub; overlapped claim line; claim post; transit survey or claim line

Mineralized Zone defined by surface showings

NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 1350 N to 2500 N see figures 11A-C.

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N. 19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 11D

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY FRASER-FILTERED DATA LINES 800 N to 1300 N

IVA-FERN PROPERTY

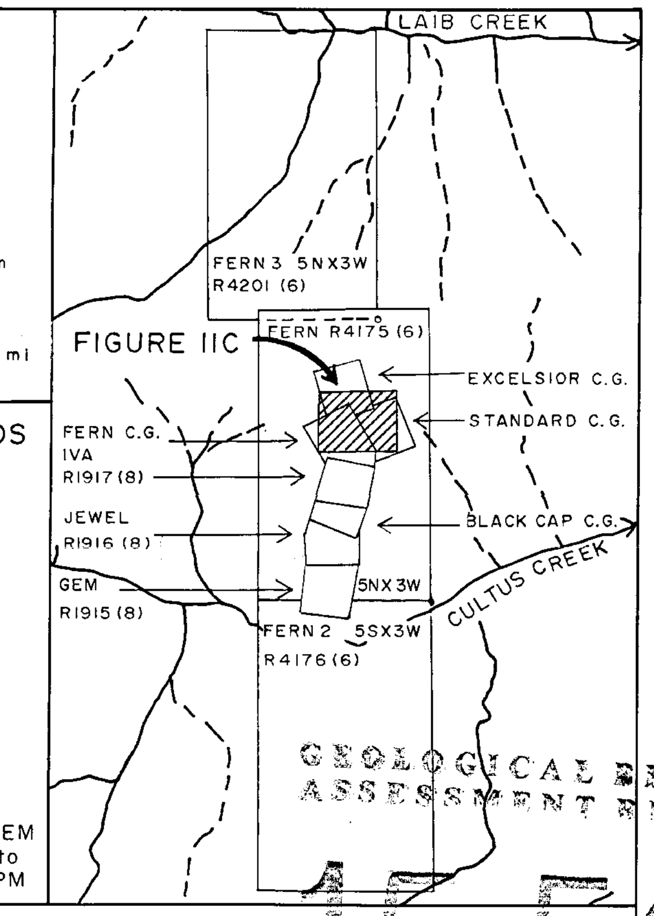
49° 18.5'N., 116° 55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

LOCATION ON PROPERTY



SCALE
0 1 2 3 km
0 1 2 mi

GEOLOGICAL BRANCH ASSESSMENT REPORT

15,567

VLF-EM PRIMARY FIELDS

N.
NLK 251.5°
NPM 237.5°

NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM

LEGEND

1986 EM16 Survey

Fraser-filtered data: f1=(M3+M4)-(M1+M2)

L1150 N — Line designation
EM16 raw data
Fraser-filtered data contour

Transit survey, grid and claim lines
overlapped claim line
transit survey hub
claim post
grid line
transit survey or claim line

Mineralized Zone defined by surface showings

NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 800 N to 1300 N and 1900 N to 2500 N, see Figures 11A,B,D

SCALE
0 20 40 60 80 100 metres
0 100 200 300 feet

N.
19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 11C

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY FRASER-FILTERED DATA LINES 1350 N to 1850 N

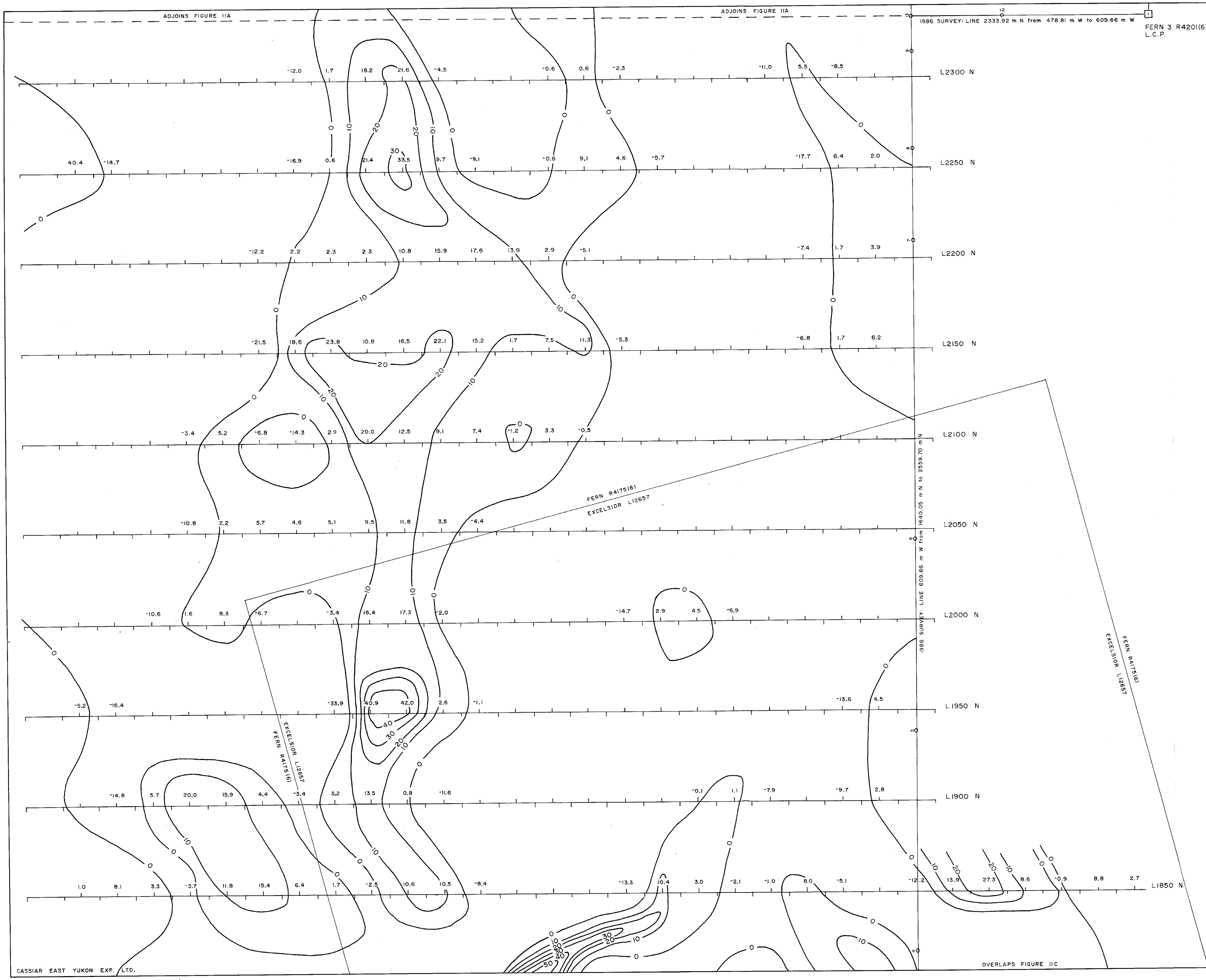
IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

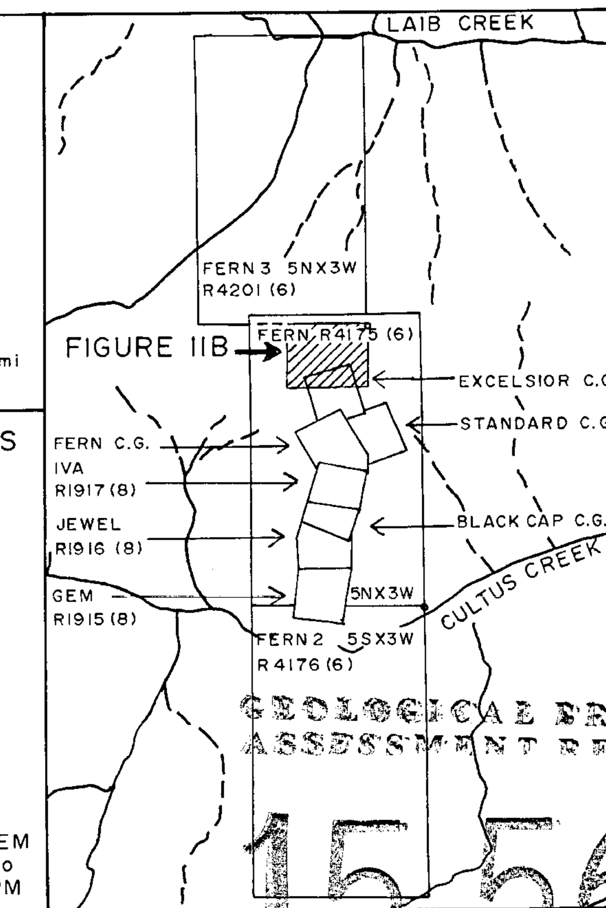
L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LOCATION ON PROPERTY

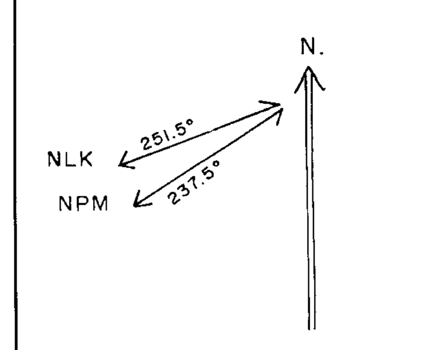
SCALE 0 1 2 3 km / 0 1 2 mi



GEOLOGICAL BRANCH ASSESSMENT REPORT

15,567

VLF-EM PRIMARY FIELDS



NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM

LEGEND

1986 EM16 Survey

Fraser-filtered data: f1=(M3+M4)-(M1+M2)

Line designation

EM16 raw data

Fraser-filtered data contour

Transit survey, grid and claim lines

overlapped claim line

transit survey hub

claim post

grid line

transit survey or claim line

Mineralized Zone defined by surface showings

NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 800 N to 1850 N and 2350 N to 2500 N, see Figures 11A,C,D

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 11B

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY FRASER-FILTERED DATA LINES 1850 N to 2300 N

IVA-FERN PROPERTY

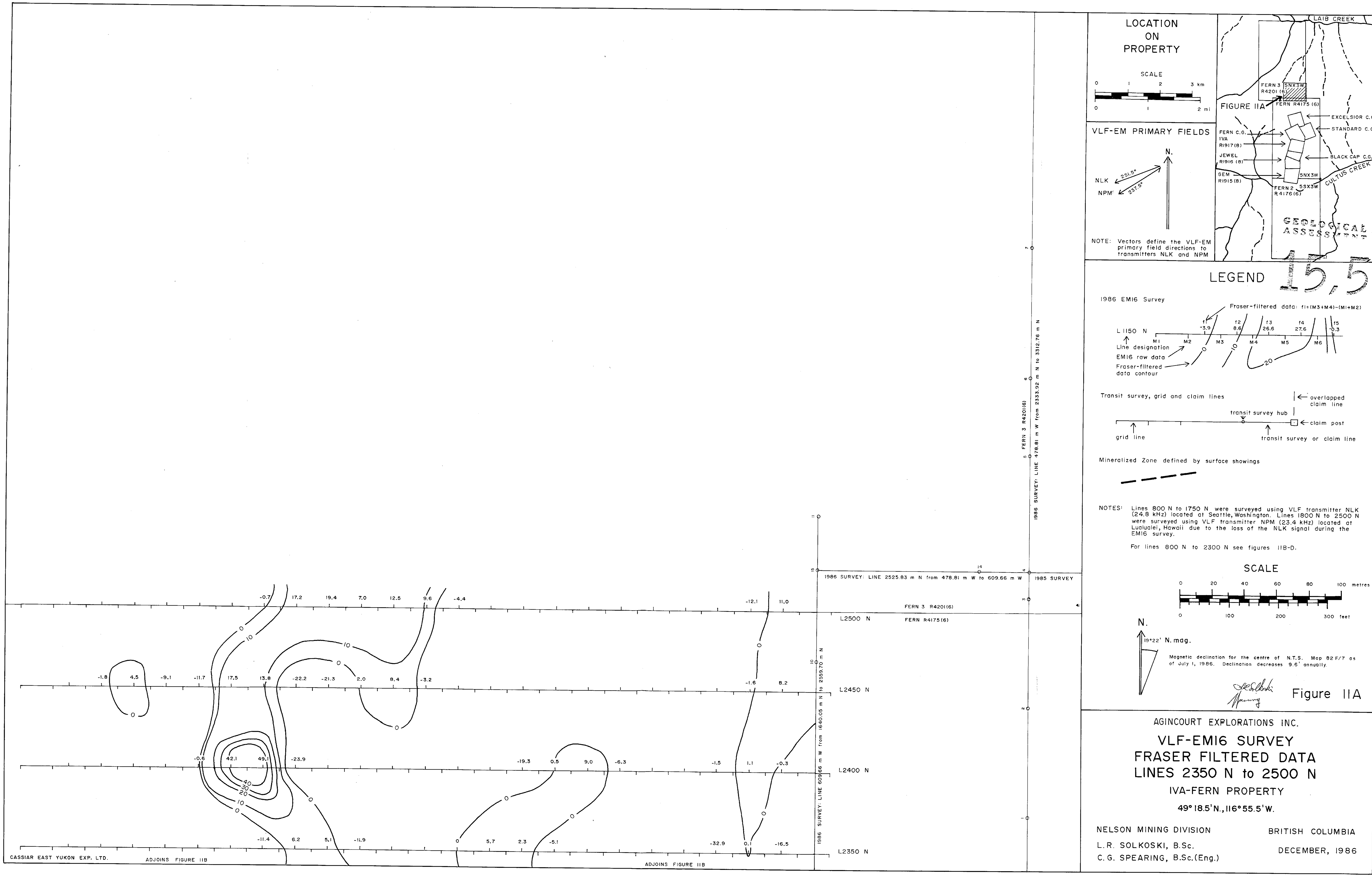
49°18.5'N., 116°55.5'W.

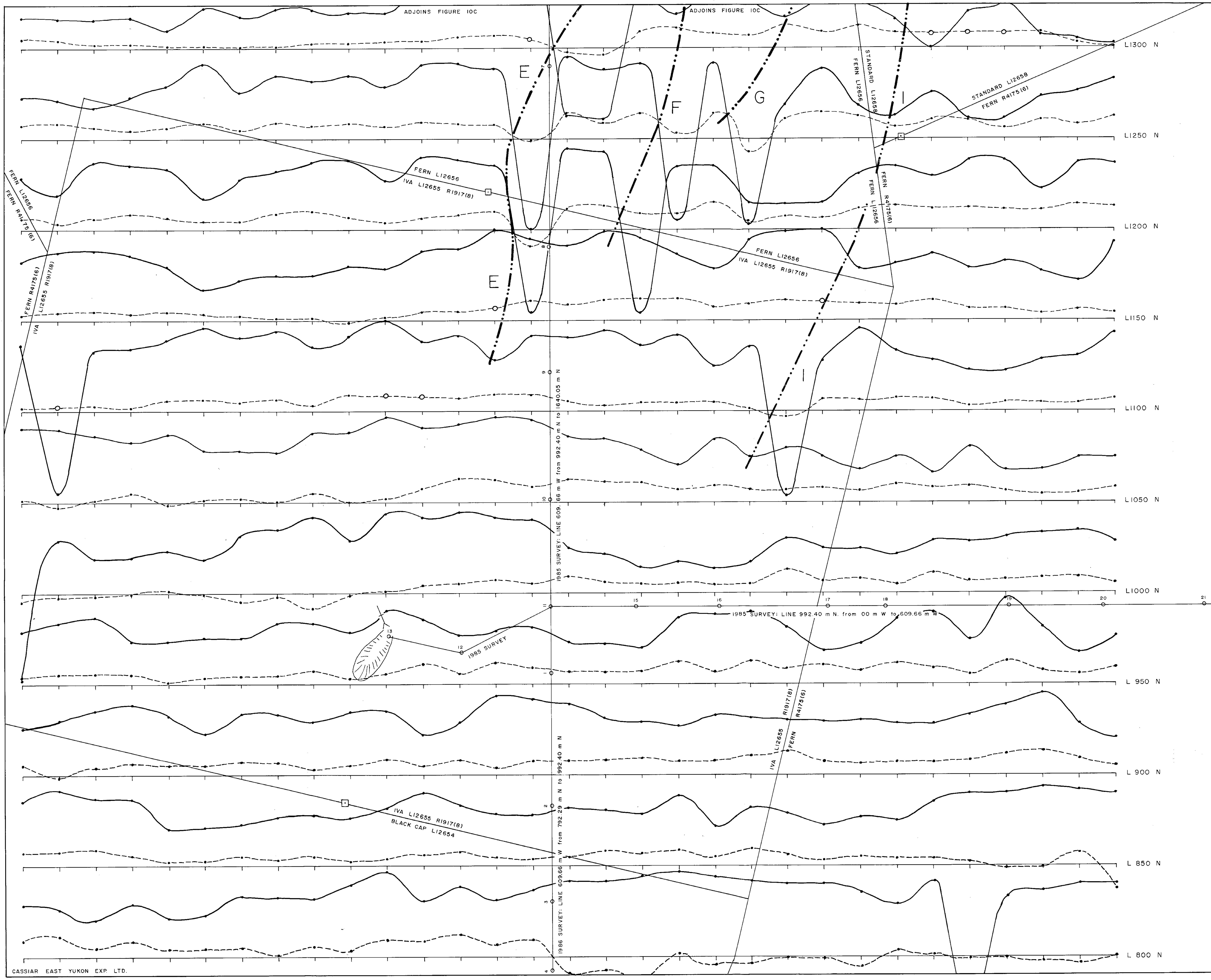
NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.

C.G. SPEARING, B.Sc.(Eng.)

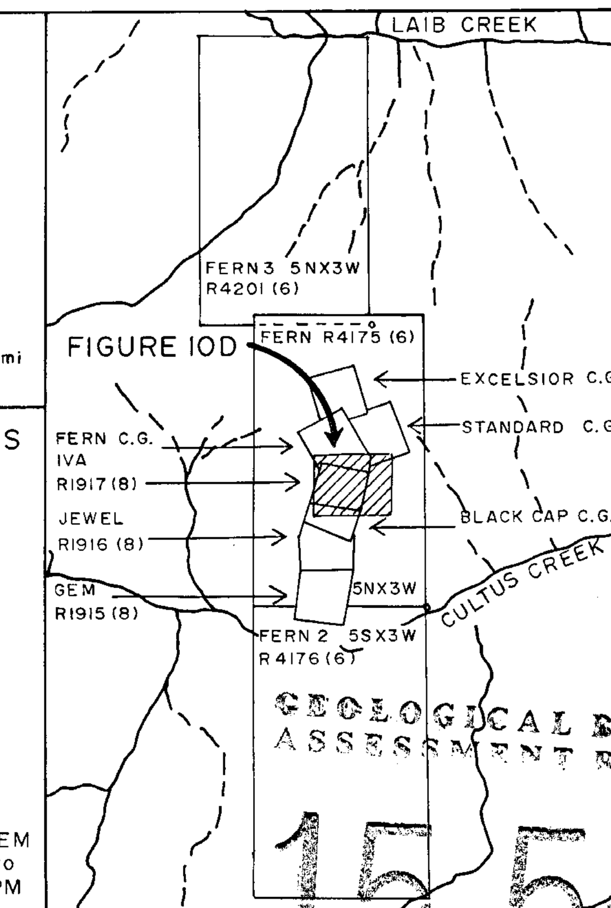
DECEMBER, 1986


LOCATION ON PROPERTY
SCALE
0 1 2 3 km
0 1 2 mi
LAIB CREEK
FERN 3 R4201 (6)
5NX3W
FERN R4175 (6)
FIGURE 11A
EXCELSIOR C.G.
STANDARD C.G.
FERN C.G.
IVA R1917 (8)
JEWEL R1916 (8)
BLACK CAP C.G.
GEM R1915 (8)
5NX3W
FERN 2 R4176 (6)
5SX3W
CULTUS CREEK
VLF-EM PRIMARY FIELDS
N.
NLK 251.5°
NPM' 237.5°
NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM
GEOLOGICAL BRANCH ASSESSMENT REPORT
15,567
LEGEND
1986 EM16 Survey
Fraser-filtered data: f1=(M3+M4)-(M1+M2)
L 1150 N
Line designation
EM16 raw data
Fraser-filtered data contour
Transit survey, grid and claim lines
overlapped claim line
transit survey hub
claim post
grid line
transit survey or claim line
Mineralized Zone defined by surface showings
NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.
For lines 800 N to 2300 N see figures 11B-D.
SCALE
0 20 40 60 80 100 metres
0 100 200 300 feet
N.
19°22' N. mag.
Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.
Figure 11A
AGINCOURT EXPLORATIONS INC.
VLF-EM16 SURVEY
FRASER FILTERED DATA
LINES 2350 N to 2500 N
IVA-FERN PROPERTY
49° 18.5'N., 116° 55.5'W.
NELSON MINING DIVISION
BRITISH COLUMBIA
L. R. SOLKOSKI, B.Sc.
C. G. SPEARING, B.Sc.(Eng.)
DECEMBER, 1986
1986 SURVEY: LINE 2525.83 m N from 478.81 m W to 609.66 m W
1985 SURVEY
1986 SURVEY: LINE 478.81 m W from 2333.92 m N to 3312.76 m N
FERN 3 R4201(6)
FERN R4175(6)
1986 SURVEY: LINE 609.66 m W from 1640.05 m N to 2559.70 m N
L2500 N
L2450 N
L2400 N
L2350 N
CASSIAR EAST YUKON EXP. LTD.
ADJOINS FIGURE 11B
ADJOINS FIGURE 11B



LOCATION ON PROPERTY

SCALE 0 1 2 3 km / 0 1 2 mi



VLF-EM PRIMARY FIELDS

N. NLK 251.5° NPM 237.5°

NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM

LEGEND

1986 EM16 Survey

L1300 N — Line designation; EM16 station; In-phase profile; Quadrature profile

Transit survey, grid and claim lines — overlapped claim line; transit survey hub; claim post; grid line; transit survey or claim line

Mineralized Zone defined by surface showings

VLF-EM Conductor

NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 1350 N to 2500 N see figures 10A-C.

VERTICAL SCALE: EM16 READING +100% / +75 / +50 / +25 / 0 / -25 / -50 / -75 / -100%

SCALE 0 20 40 60 80 100 metres / 0 100 200 300 feet

N. 19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 10D

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY
IN-PHASE and QUADRATURE PROFILES
LINES 800 N to 1300 N

IVA-FERN PROPERTY

49° 18.5'N., 116°55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.

C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

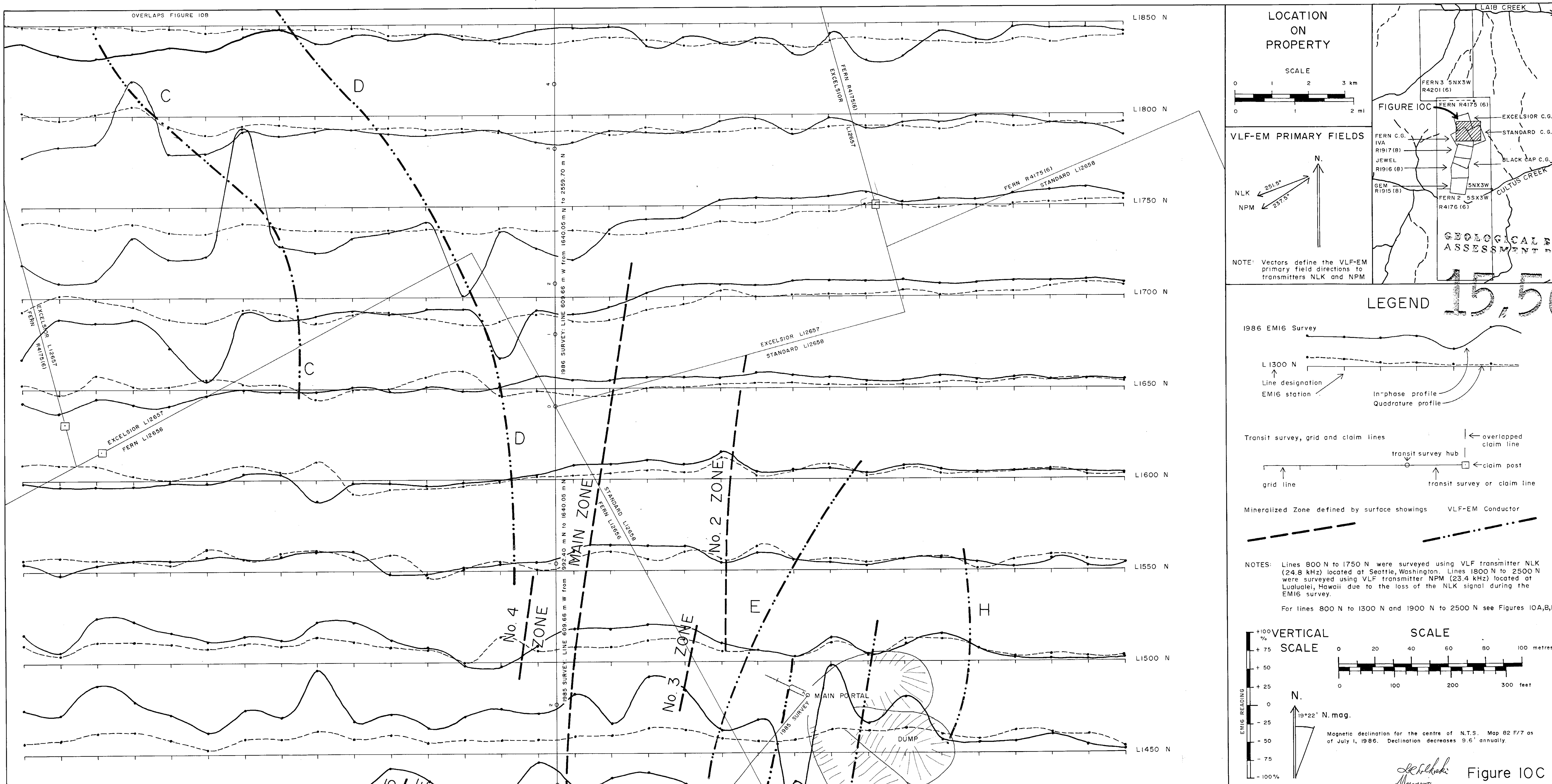


Figure 10C

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY
IN-PHASE and QUADRATURE PROFILES
LINES 1350 N to 1850 N

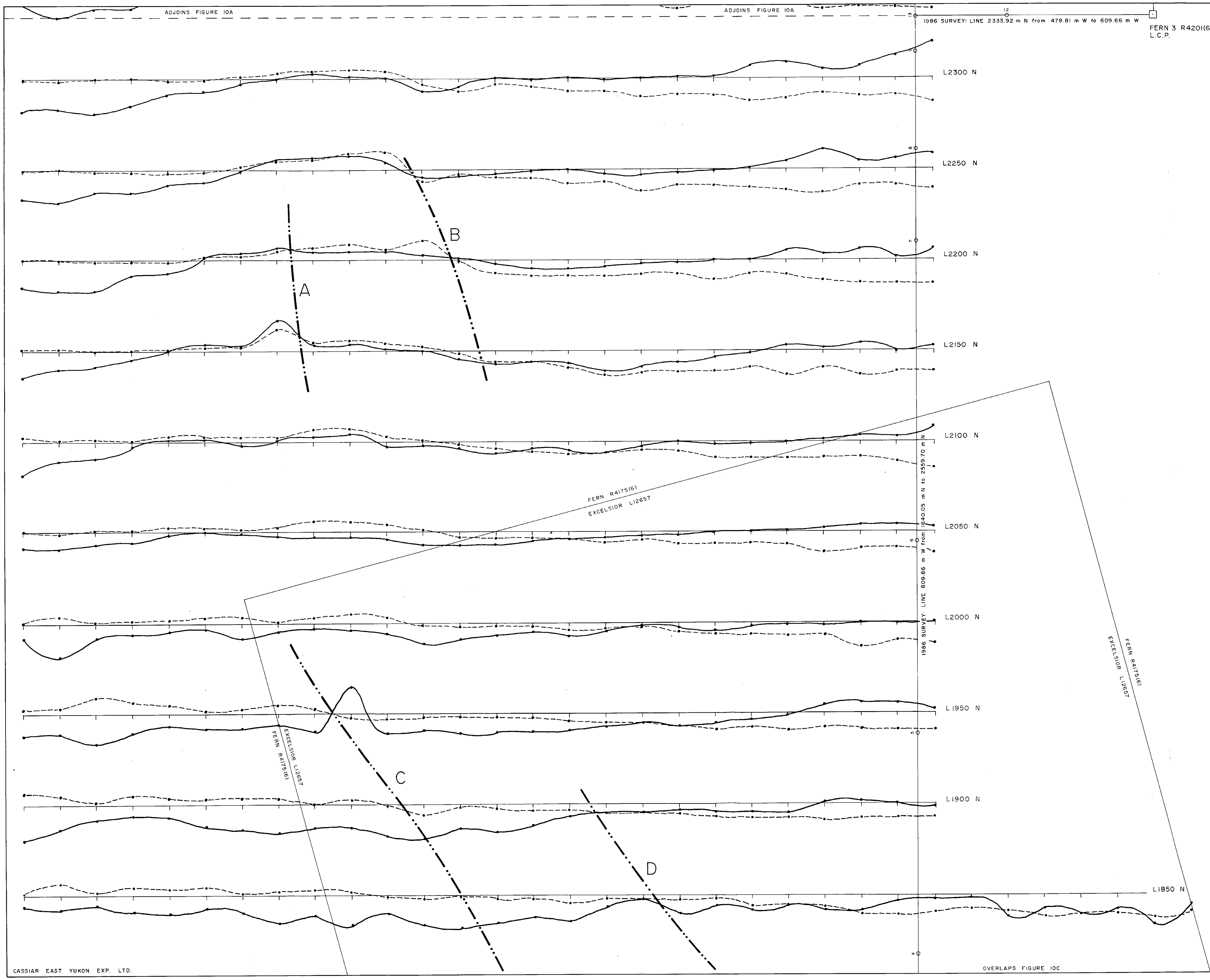
IVA-FERN PROPERTY

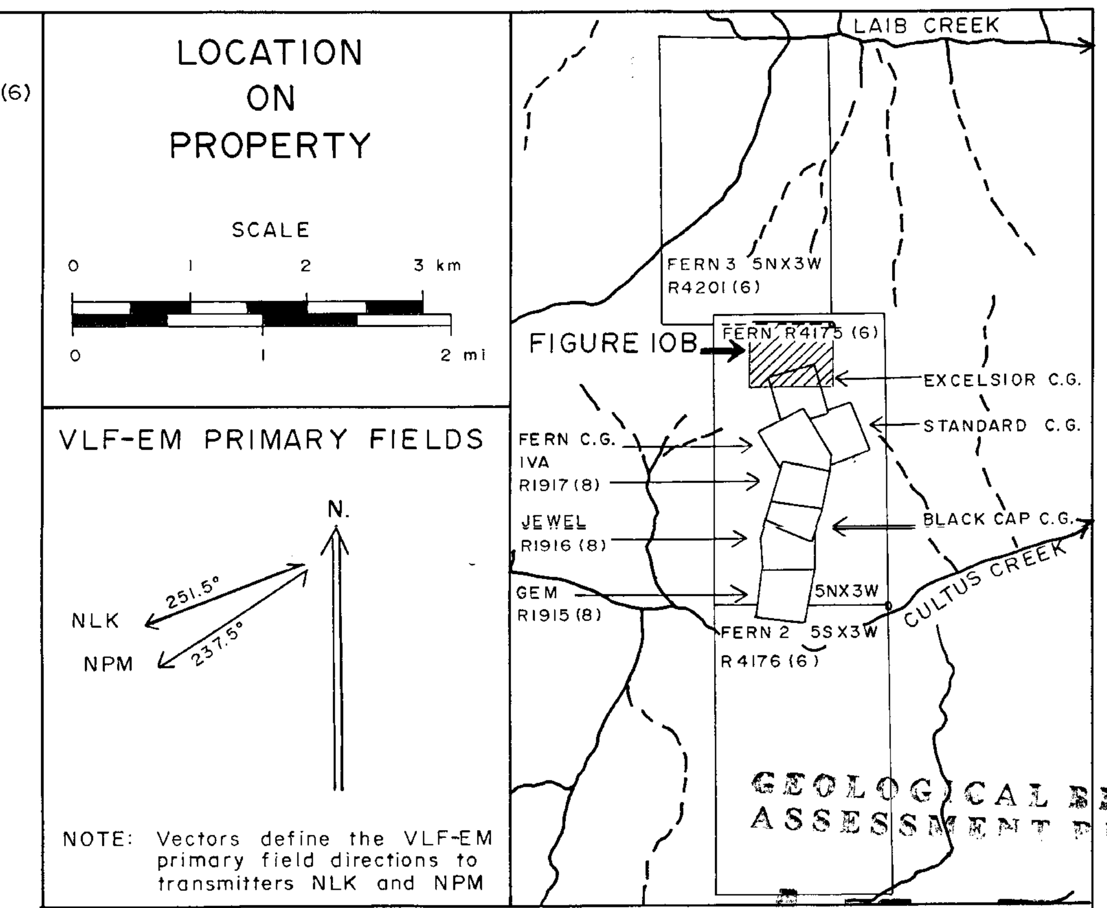
49° 18.5'N., 116° 55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986





GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,567

LEGEND

1986 EM16 Survey

L 1300 N
Line designation
EM16 station
In-phase profile
Quadrature profile

Transit survey, grid and claim lines
overlapped claim line
transit survey hub
claim post
grid line
transit survey or claim line

Mineralized Zone defined by surface showings
VLF-EM Conductor

NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 800 N to 1850 N and 2350 N to 2500 N see figures 10A,C,D

VERTICAL SCALE
+100 %
+ 75
+ 50
+ 25
0
- 25
- 50
- 75
- 100%
EM16 READING

SCALE
0 20 40 60 80 100 metres
0 100 200 300 feet

N.
19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 10B

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY
IN-PHASE and QUADRATURE PROFILES
LINES 1850 N to 2300 N

IVA-FERN PROPERTY

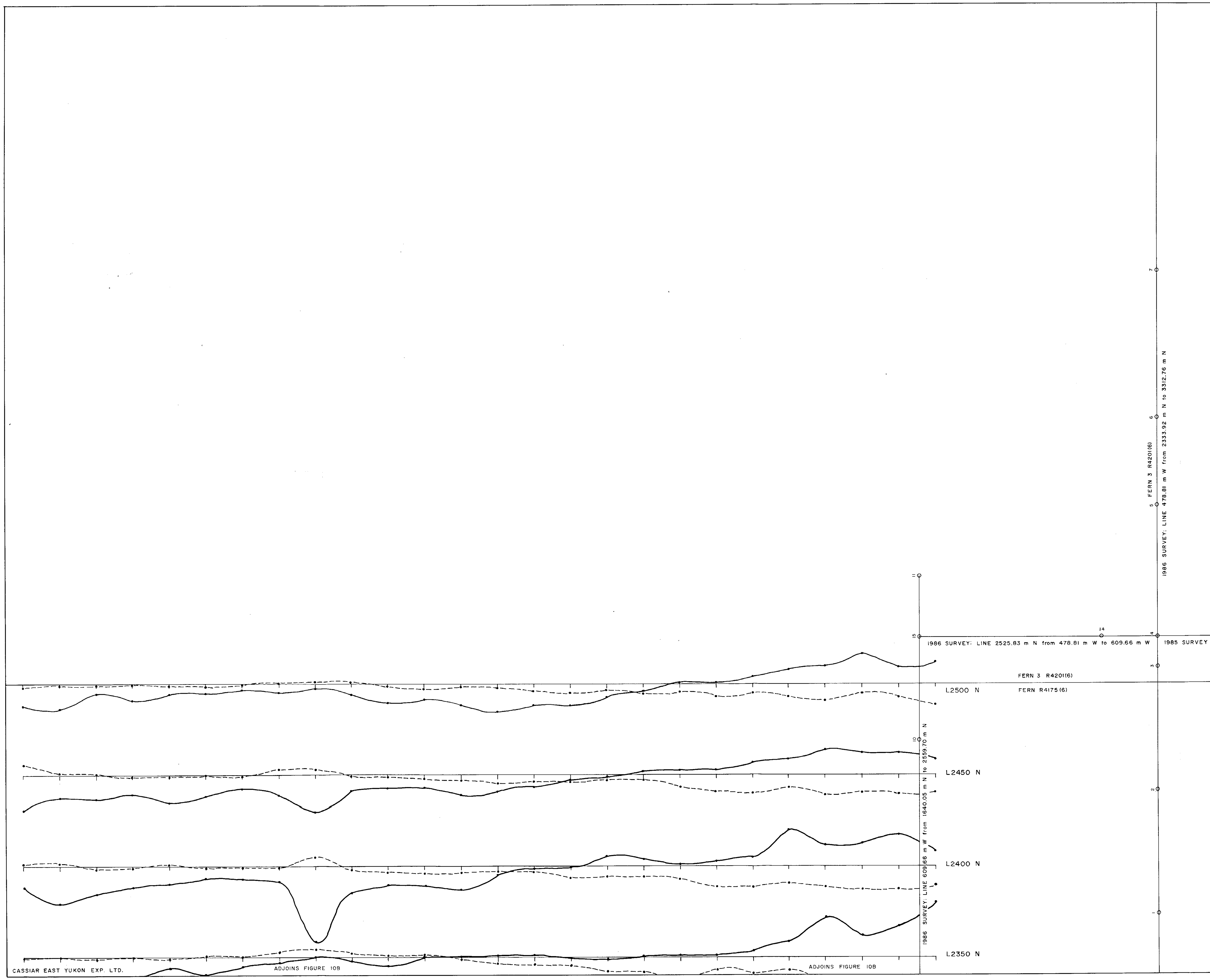
49° 18.5'N., 116° 55.5'W.

NELSON MINING DIVISION

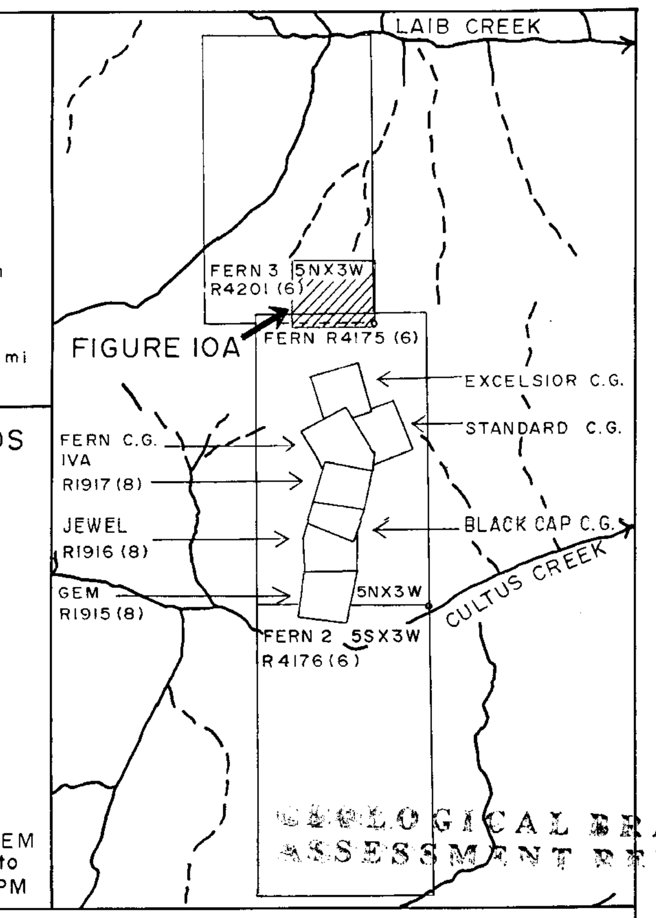
BRITISH COLUMBIA

L. R. SOLKOSKI, B.Sc.
C. G. SPEARING, B.Sc.(Eng.)

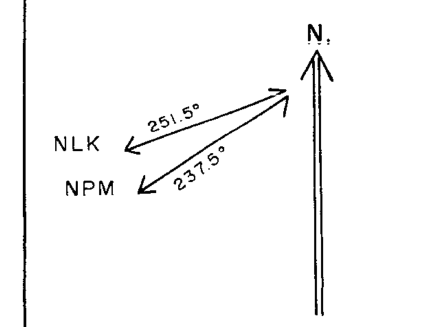
DECEMBER, 1986



LOCATION ON PROPERTY

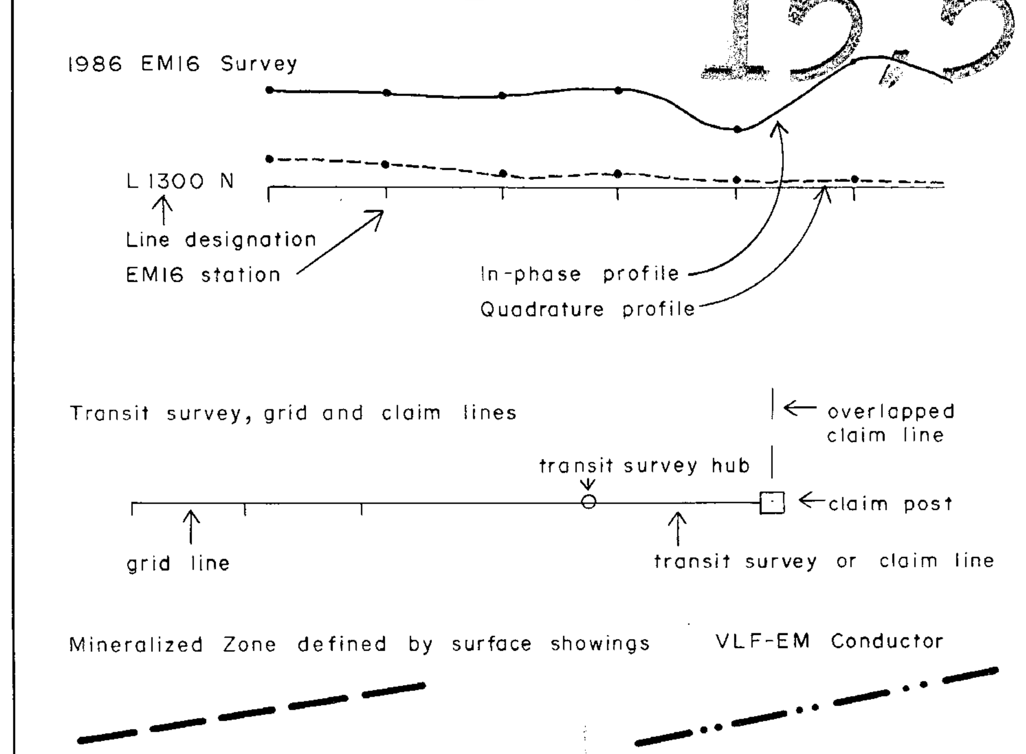


VLF-EM PRIMARY FIELDS



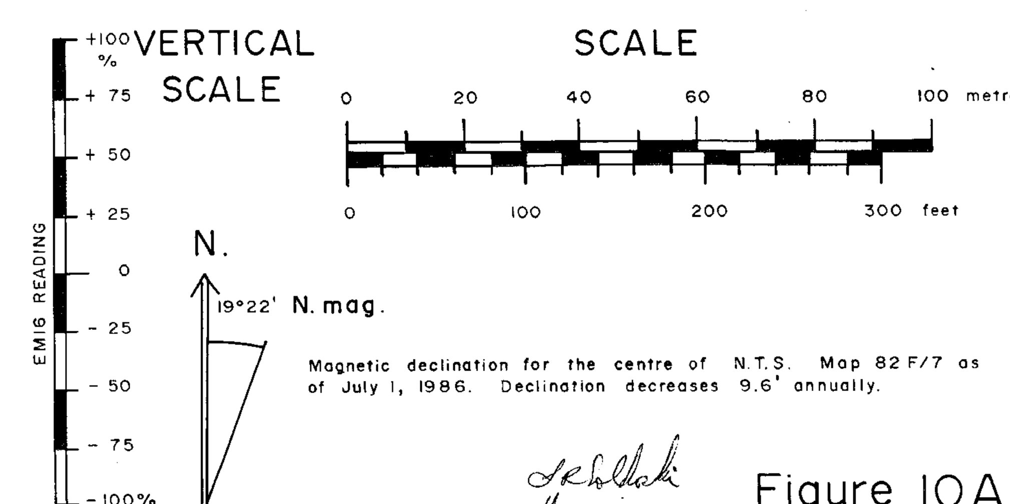
NOTE: Vectors define the VLF-EM primary field directions to transmitters NLK and NPM

LEGEND



NOTES: Lines 800 N to 1750 N were surveyed using VLF transmitter NLK (24.8 kHz) located at Seattle, Washington. Lines 1800 N to 2500 N were surveyed using VLF transmitter NPM (23.4 kHz) located at Lualualei, Hawaii due to the loss of the NLK signal during the EM16 survey.

For lines 800 N to 2300 N see figures 10B-D.



Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 10A

AGINCOURT EXPLORATIONS INC.

VLF-EM16 SURVEY
IN-PHASE and QUADRATURE PROFILES
LINES 2350 N to 2500 N

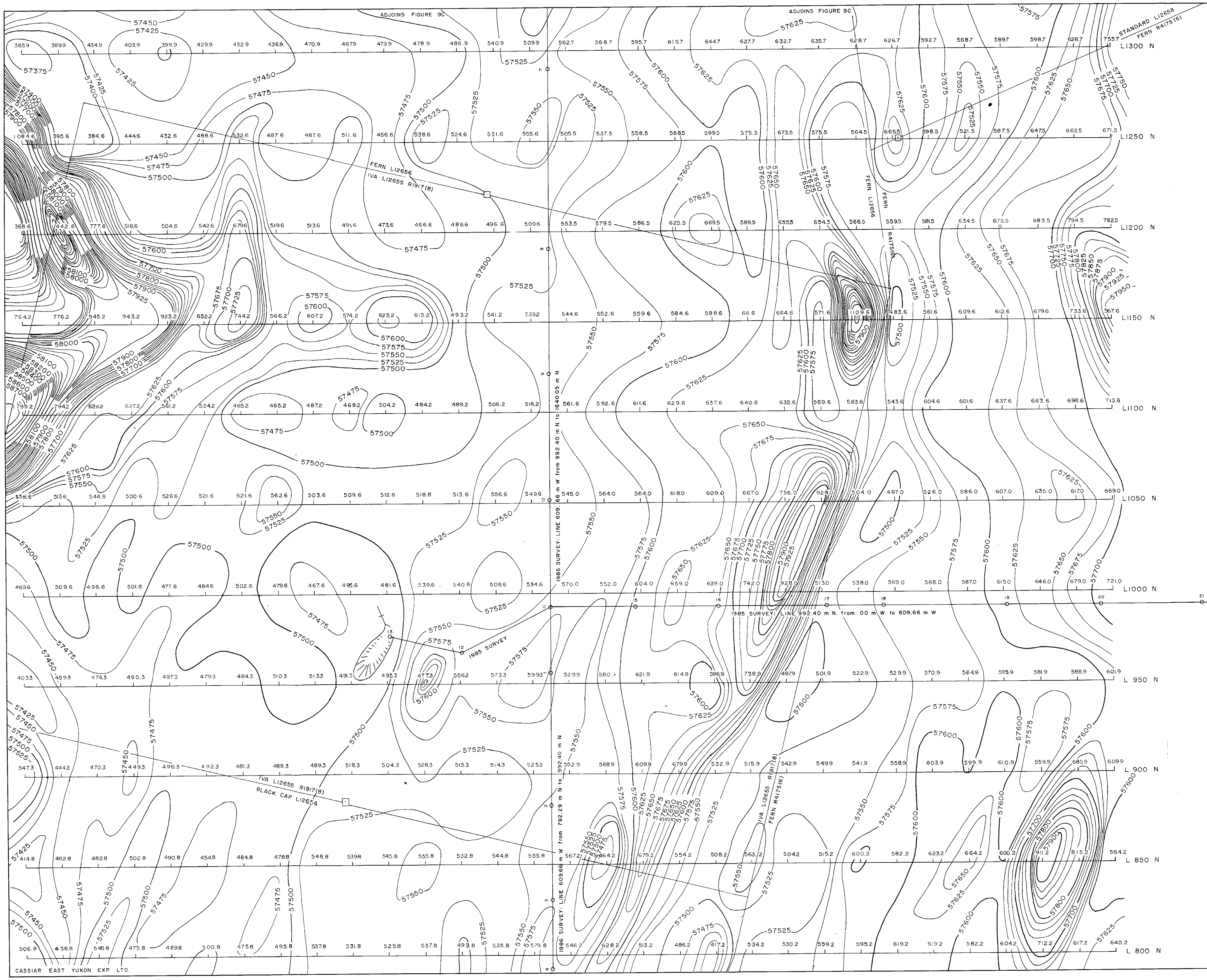
IVA-FERN PROPERTY

49° 18.5' N., 116° 55.5' W.

NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

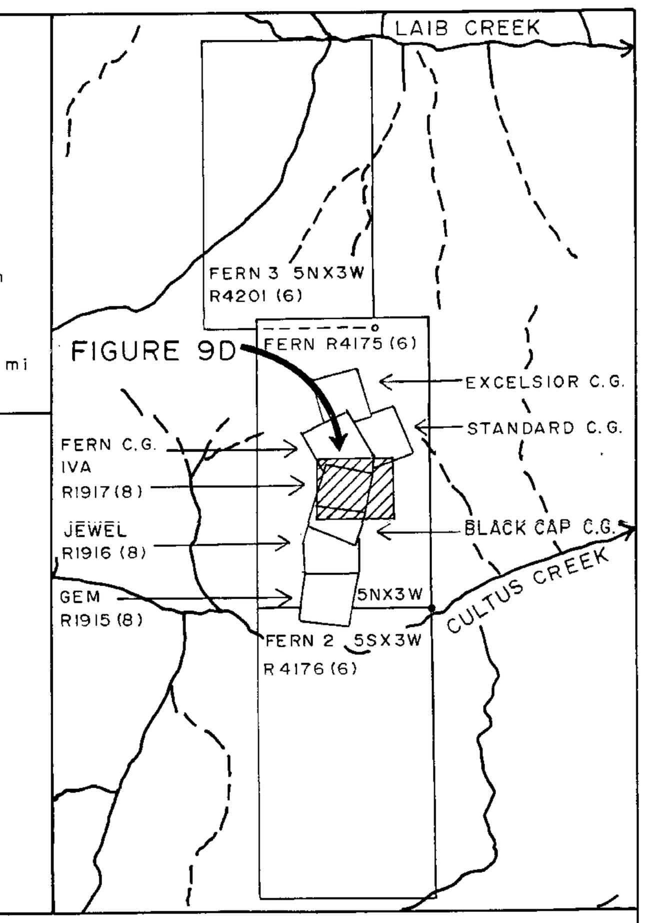


LOCATION ON PROPERTY

SCALE

0 1 2 3 km

0 1 2 mi



LEGEND

1986 MP2 Magnetometer Survey

Magnetometer reading -57000 gammas

L2300 N 573.7 599.7 523.7 533.7 503.7 498.7

Line designation

Contour (gammas) 57575 57550 57525 57500

Transit survey, grid and claim lines

transit survey hub

overlapped claim line

claim post

grid line

transit survey or claim line

Mineralized Zone defined by surface showings

GEOLOGICAL BRANCH ASSESSMENT REPORT

15,567

NOTE: For lines 1350 N to 2500 N, see figures 9A,B,C.

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N.

19°22' N.mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 9D

AGINCOURT EXPLORATIONS INC.

SCINTREX MP2 MAGNETOMETER SURVEY LINES 800 N to 1300 N

IVA-FERN PROPERTY

49° 18.5'N., 116°55.5'W.

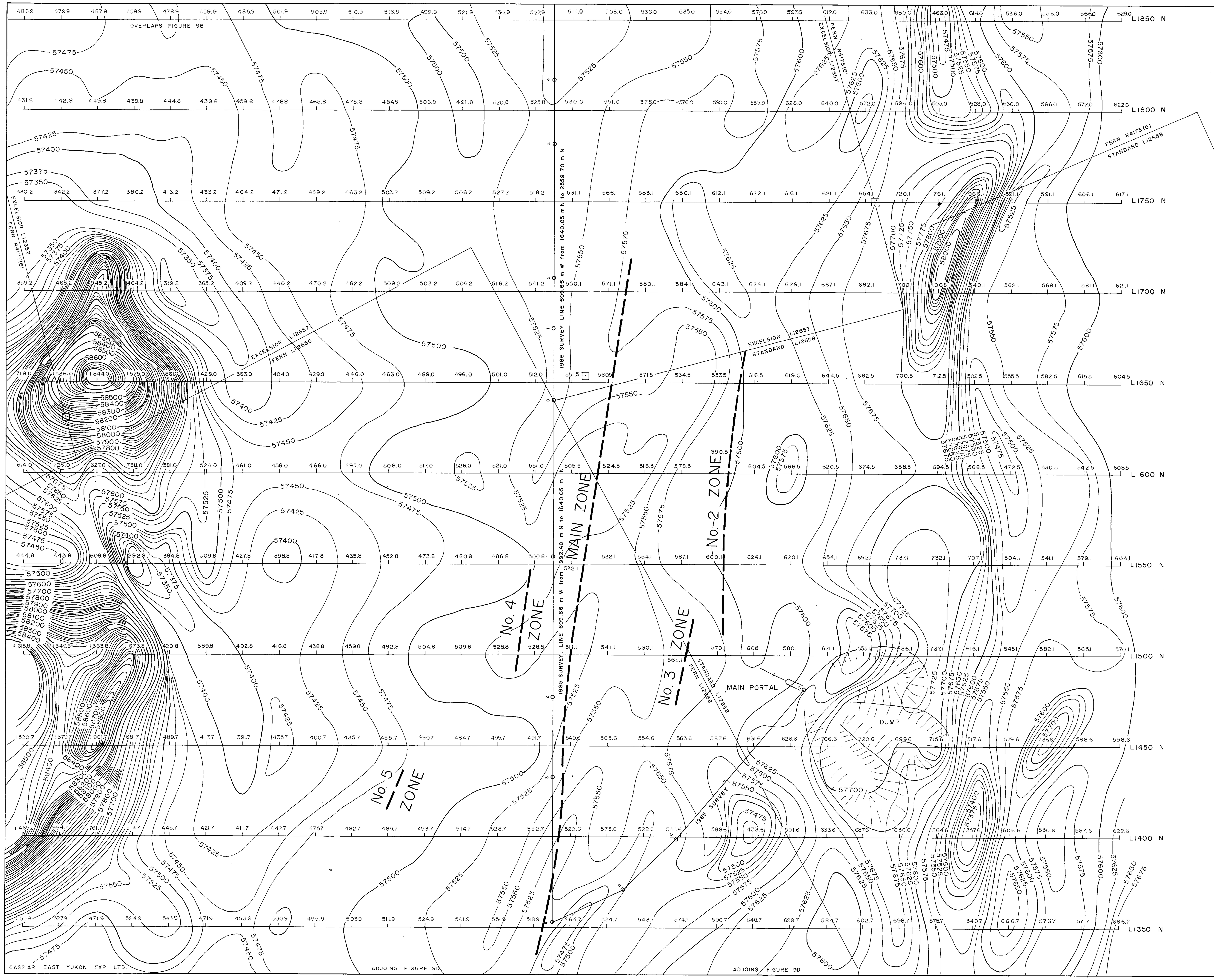
NELSON MINING DIVISION

BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.

C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986

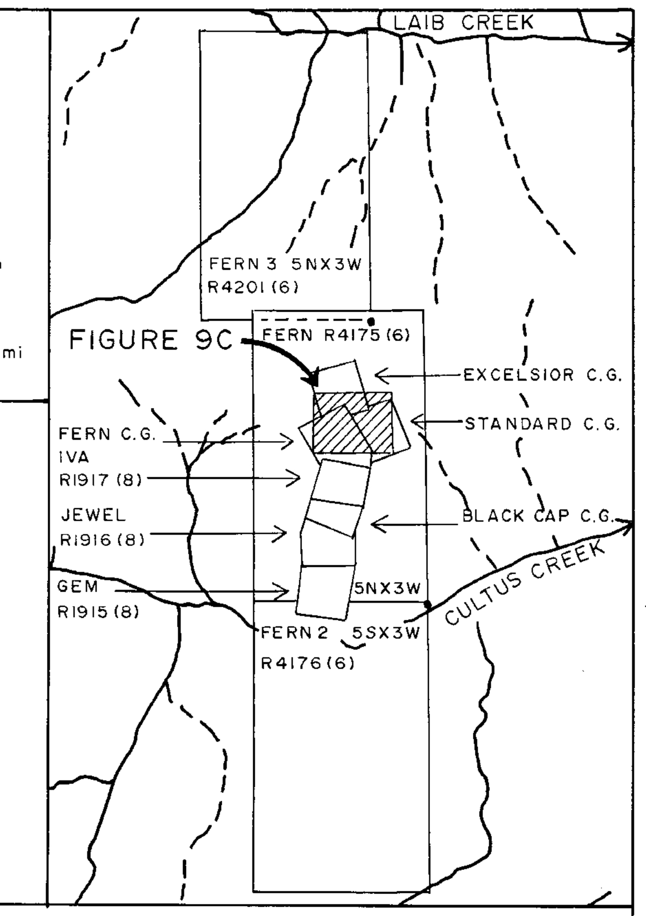


LOCATION ON PROPERTY

SCALE

0 1 2 3 km

0 1 2 mi



LEGEND

1986 MP2 Magnetometer Survey

Magnetometer reading -57000 gammas

L2300 N — Line designation

Contour (gammas)

Transit survey, grid and claim lines

overlapped claim line

transit survey hub

claim post

grid line

transit survey or claim line

Mineralized Zone defined by surface showings

NOTE: For lines 800 N to 1300 N and 1850 N to 2500 N, see figures 9A,B,D.

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 9C

AGINCOURT EXPLORATIONS INC.

SCINTREX MP2 MAGNETOMETER SURVEY LINES 1350 N to 1850 N

IVA-FERN PROPERTY

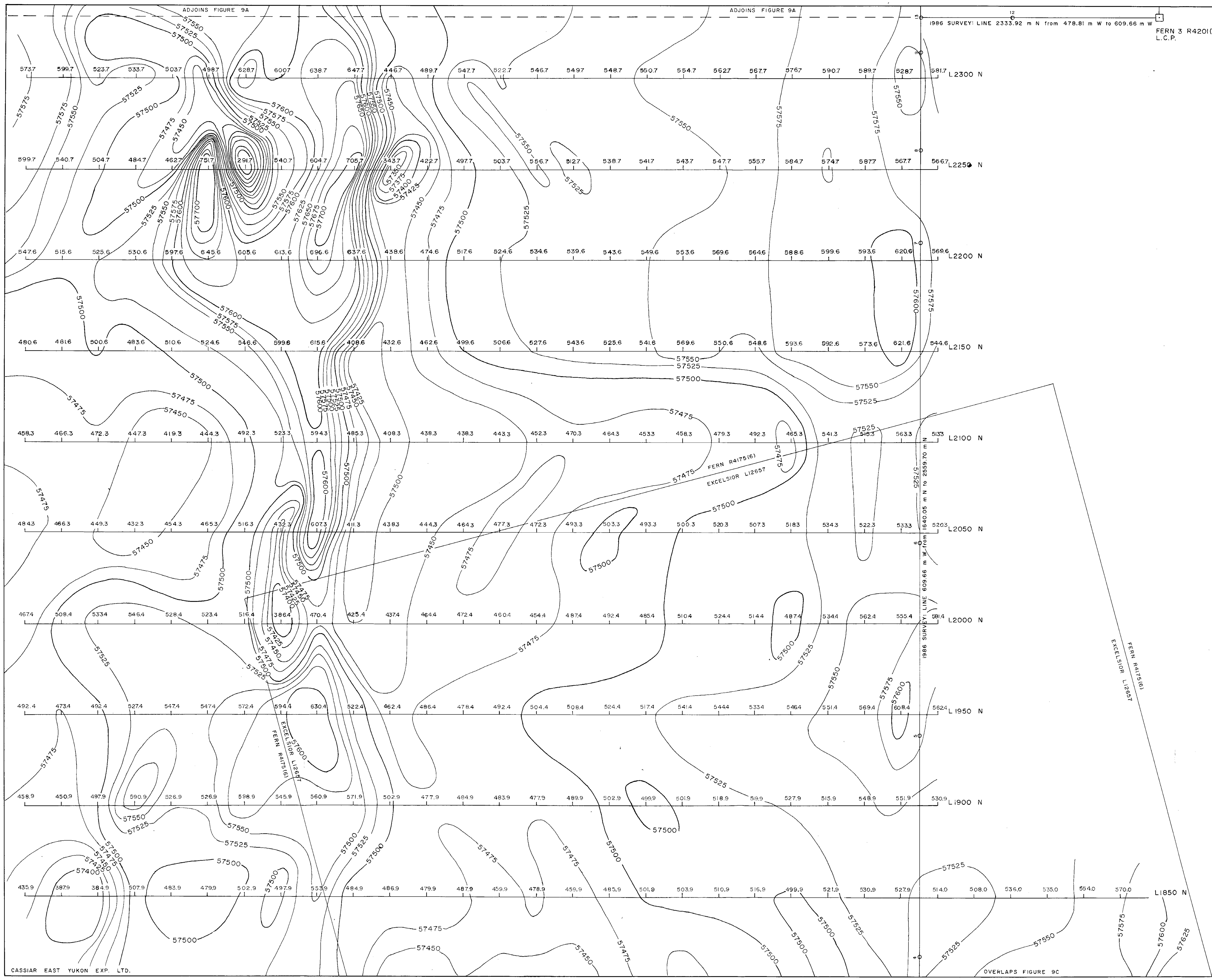
49°18.5'N., 116°55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

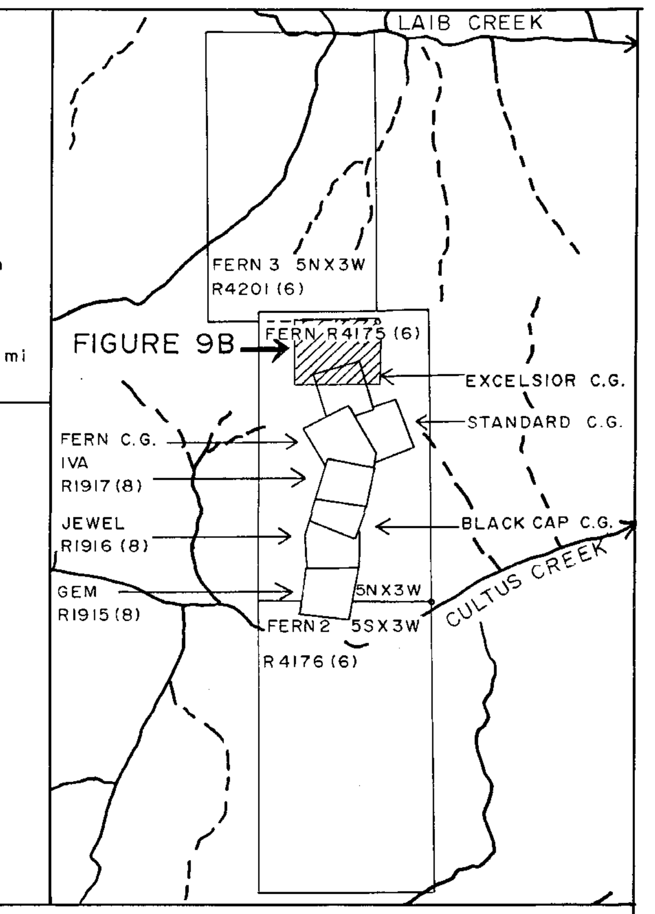
L.R. SOLKOSKI, B.Sc.

C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LOCATION ON PROPERTY



LEGEND

1986 MP2 Magnetometer Survey

Magnetometer reading - 57000 gammas

L2300 N — Line designation

Contour (gammas)

Transit survey, grid and claim lines

overlapped claim line

transit survey hub

claim post

grid line

transit survey or claim line

Mineralized Zone defined by surface showings

NOTE: For lines 800 N to 1850 N and 2350 N to 2500 N, see figures 9A,C,D.

GEOLOGICAL BRANCH ASSESSMENT REPORT

15,567

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N.

19°22' N.mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 9B

AGINCOURT EXPLORATIONS INC.

SCINTREX MP2 MAGNETOMETER SURVEY LINES 1850 N to 2300 N

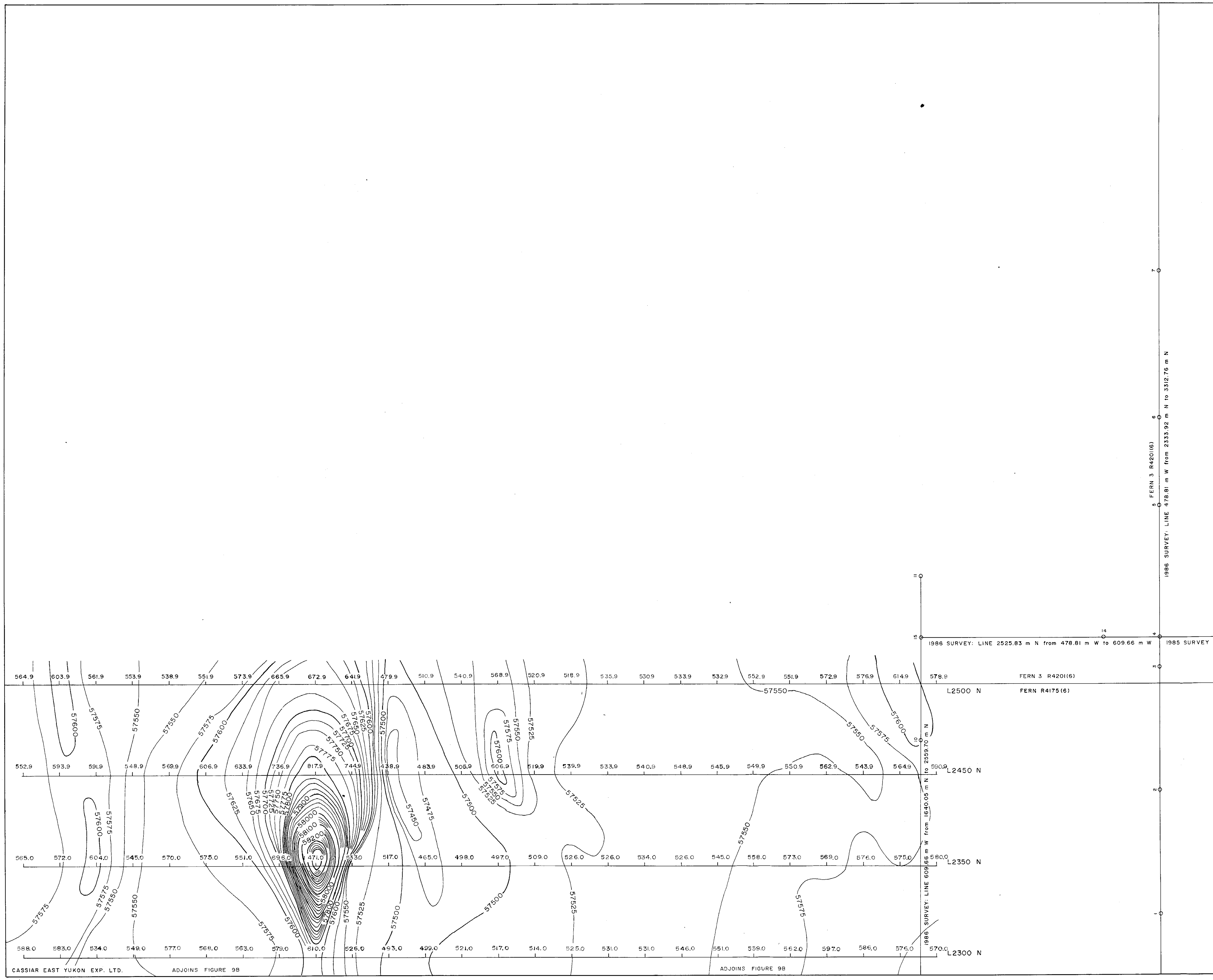
IVA-FERN PROPERTY

49° 18.5'N., 116° 55.5'W.

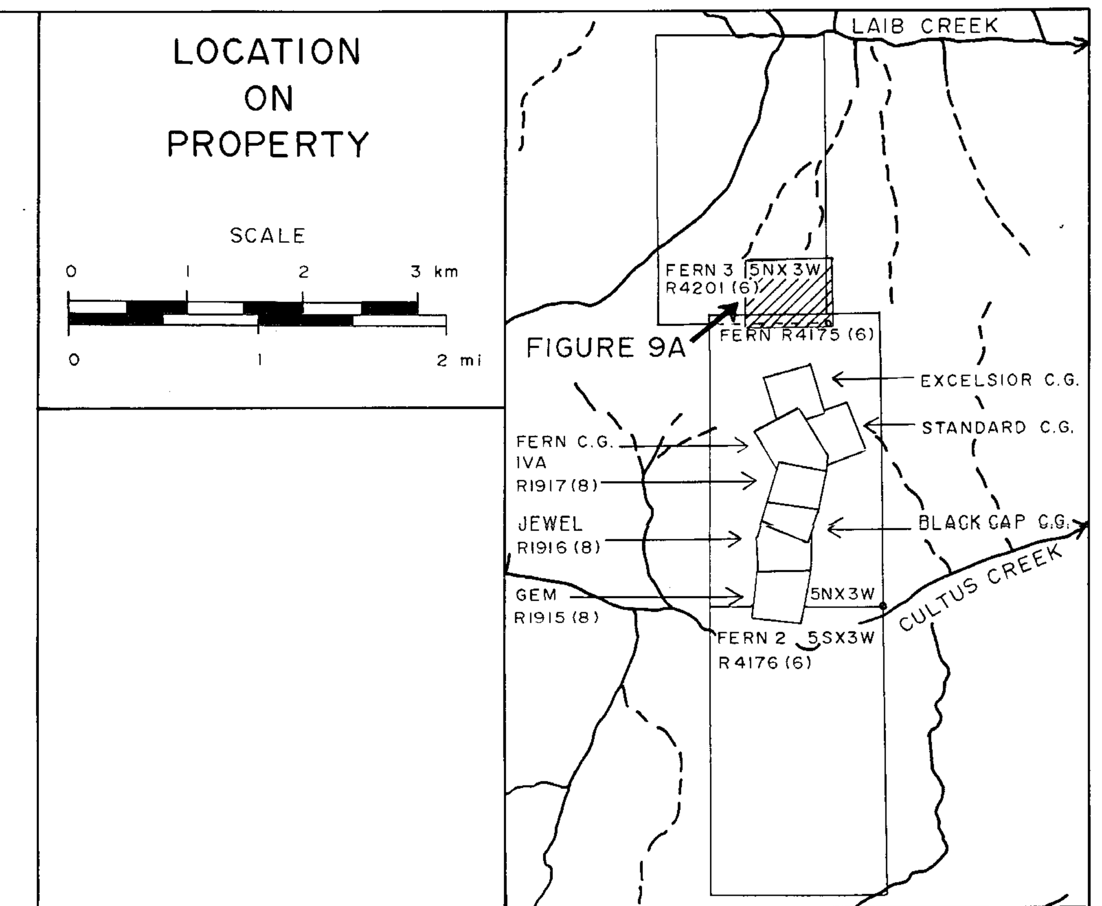
NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LOCATION ON PROPERTY



LEGEND

1986 MP2 Magnetometer Survey

Magnetometer reading -57000 gammas

L2300 N — Line designation

Contour (gammas)

Transit survey, grid and claim lines

overlapped claim line

transit survey hub

claim post

grid line

transit survey or claim line

Mineralized Zone defined by surface showings

NOTE: For lines 800 N to 2300 N, see figures 9B,C,D.

SCALE

0 20 40 60 80 100 metres

0 100 200 300 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 9A

AGINCOURT EXPLORATIONS INC.

SCINTREX MP2 MAGNETOMETER SURVEY LINES 2350 N to 2500 N

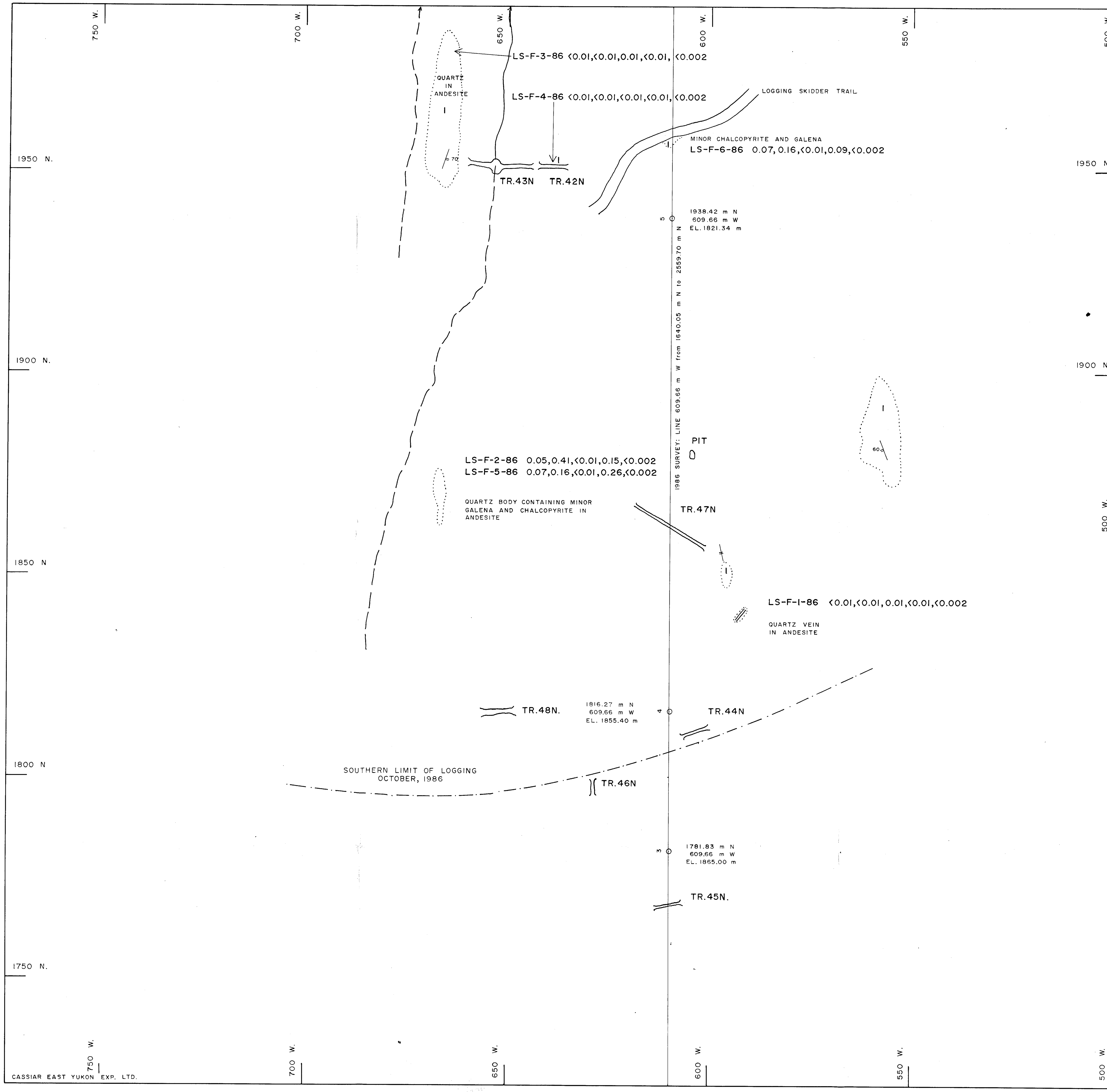
IVA-FERN PROPERTY

49° 18.5'N., 116° 55.5'W.

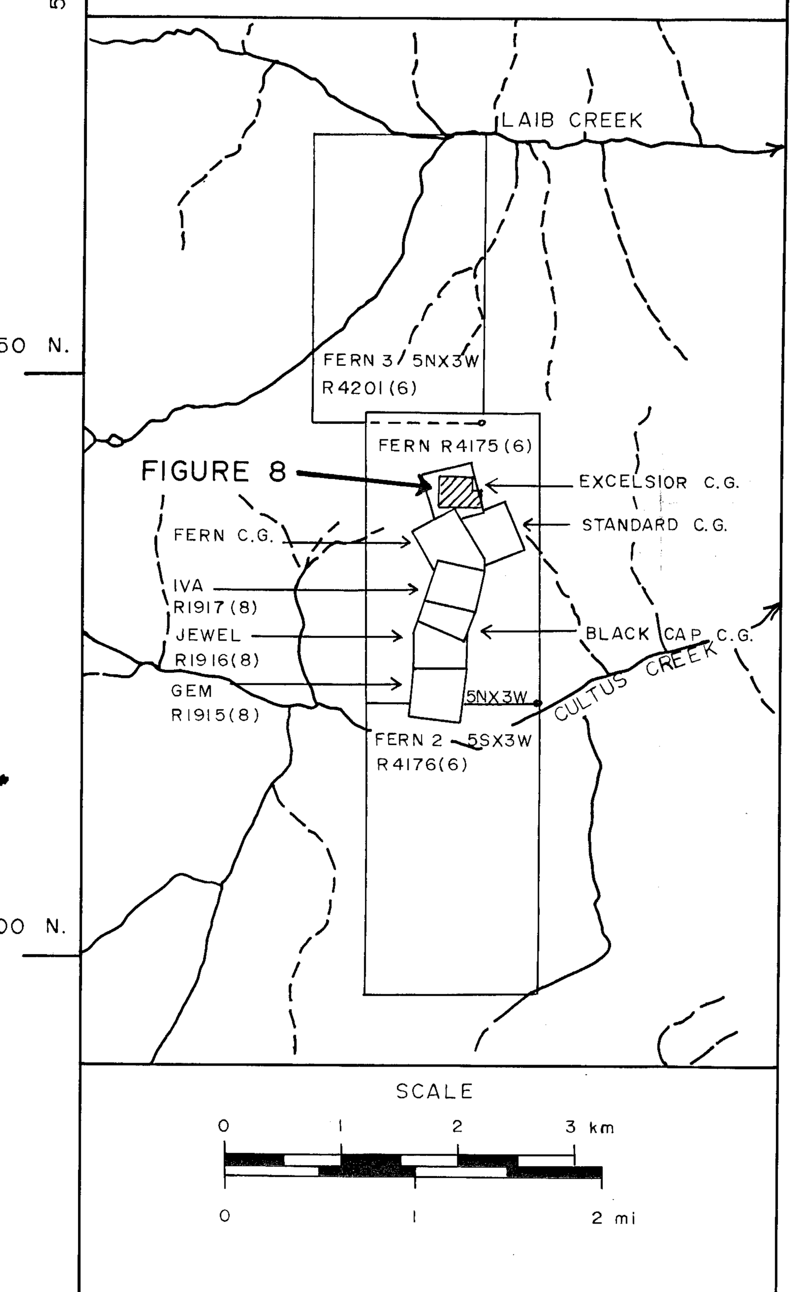
NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LOCATION ON PROPERTY



LEGEND

TABLE OF UNITS

AGE AND FORMATION		LITHOLOGY
Eocene	2	Coarse-grained syenite (shonkinite)
— Multi-phase deformation, metamorphism, igneous intrusion —		
Hadrynian Irene Volcanic Formation	1	Andesitic to basaltic volcanics, fine-grained flows and tuffs

Rock Assay sampled by L.R. Solkoski, B.Sc.

LS-F-5-86 0.07, 0.16, <0.01, 0.26, <0.002

Cu% Pb% Zn% Ag oz/ton Au oz/ton

Bedding: tops unknown

Limit of outcrop Trench Pit Creek Intermittent creek

1986 Survey survey hub surveyed line

NOTE: This figure adjoins the northern end of the main workings-area as defined by:

Solkoski, L.R.; 1985: Geological Assessment Report of the Iva-Fern Property; figures 9A-C.

SCALE

0 10 20 30 40 50 metres

0 50 100 150 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 8

AGINCOURT EXPLORATIONS INC.

TRENCHES NORTH of the MAIN WORKINGS-AREA

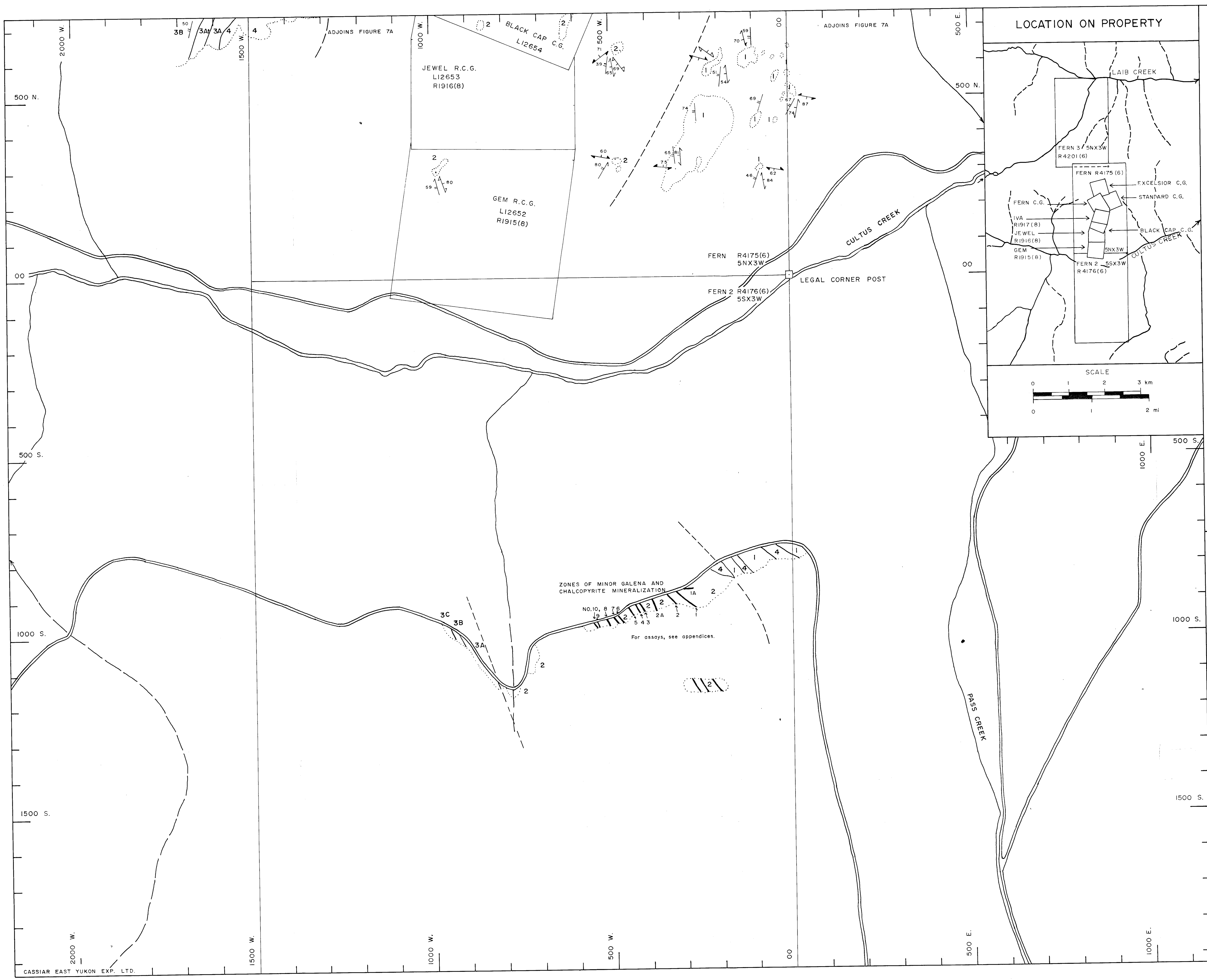
IVA-FERN PROPERTY

49° 18.5'N., 116° 55.5'W.

NELSON MINING DIVISION BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LEGEND

TABLE OF UNITS

AGE AND FORMATION		LITHOLOGY
Eocene	4	Coarse-grained syenite (shonkinite)
Multi-phase deformation, metamorphism, igneous intrusion		
Hadrynian Monk Formation	3C	Grey phyllite and black graptolitic phyllite
	3B	Laminated limestone
	3A	Grey and green sericitic phyllites 3At felsic tuff
Irene Volcanic Formation	2	Andesitic to basaltic volcanics, fine-grained flows and tuffs
Toby Formation	1	Polymict conglomerate

Bedding — tops known; tops unknown; parallel with cleavage

Cleavage — first; second; third

Geological contact: defined; approximate

Limit of outcrop

Mineralized Zone, defined by surface showings

Claims: legal corner post; claim line

Road; River; Creek; Intermittent creek

NOTE: For geology of the central part of the Iva-Fern Property, see Figure 7A.

SCALE

0 100 200 300 400 500 metres

0 500 1000 1500 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 7B

AGINCOURT EXPLORATIONS INC.

GEOLOGY
FERN R4175(6) and FERN 2 R4176(6)

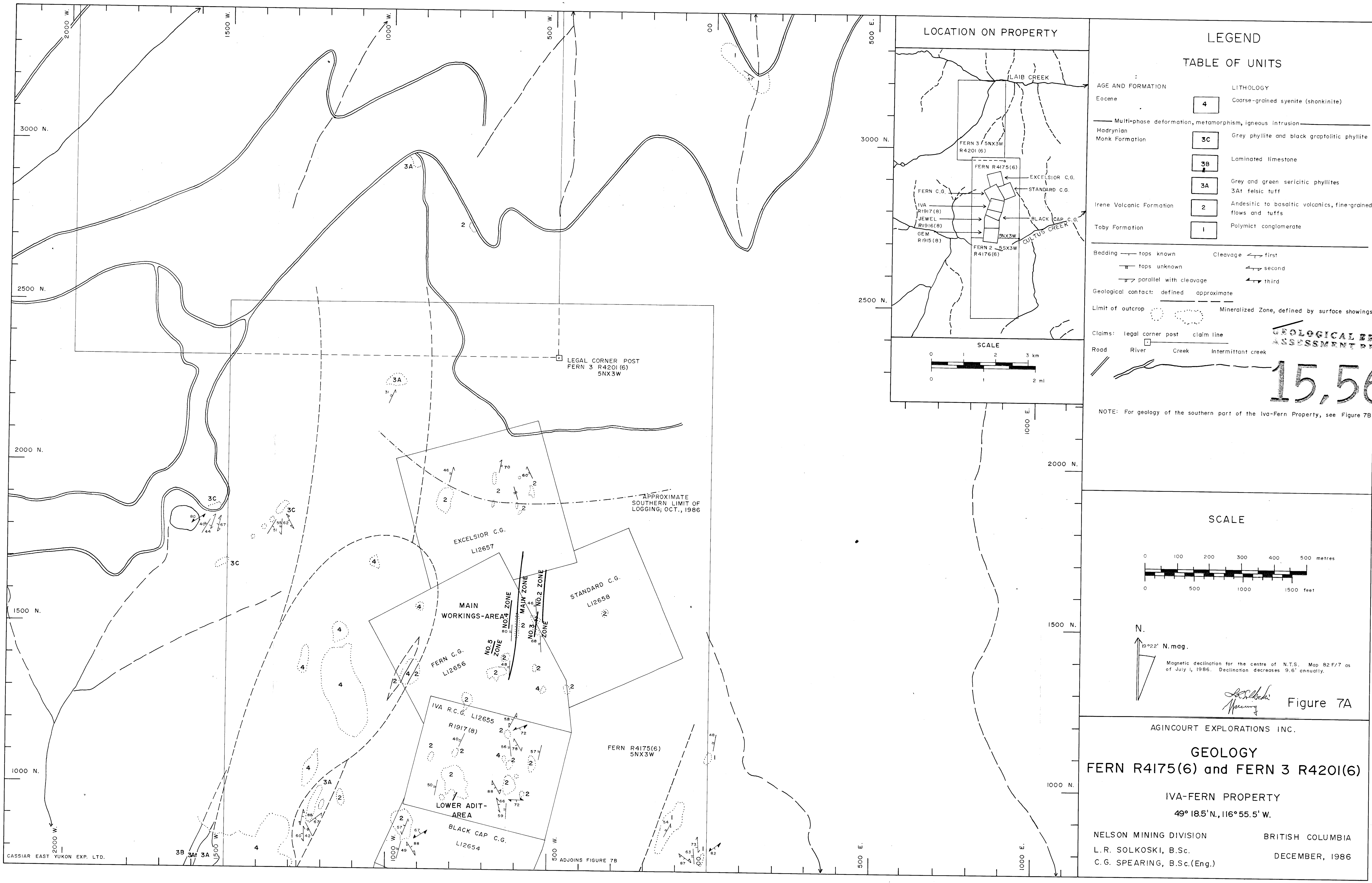
IVA-FERN PROPERTY

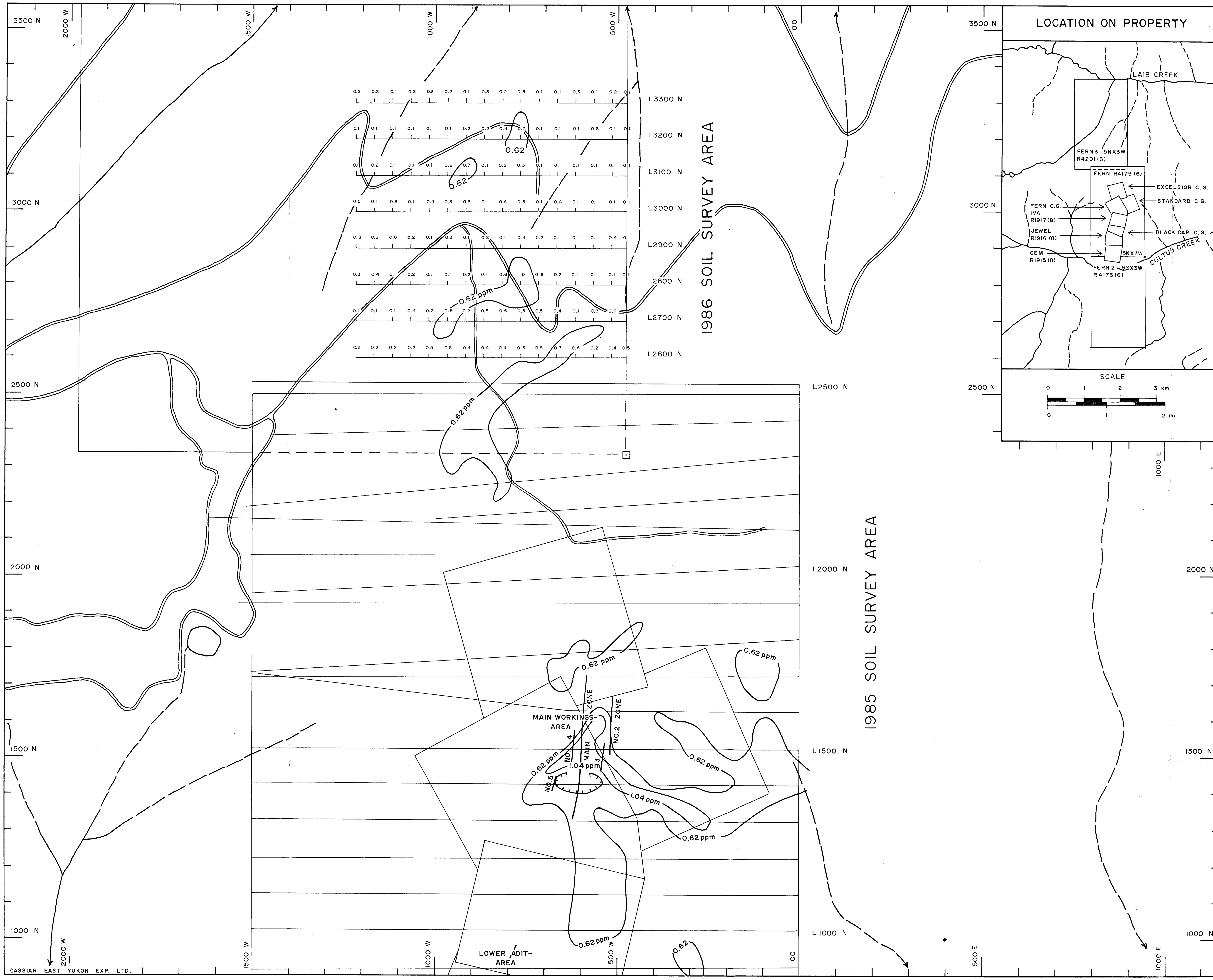
49°18.5'N., 116°55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986


LOCATION ON PROPERTY
LAIB CREEK
FERN 3 5NX3W R4201 (6)
FERN R4175(6)
EXCELSIOR C.G.
STANDARD C.G.
FERN C.G.
IVA R1917(8)
JEWEL R1916(8)
GEM R1915(8)
BLACK CAP C.G.
CULTUS CREEK
FERN 2 5SX3W R4176(6)
SCALE
0 1 2 3 km
0 1 2 mi
LEGEND
TABLE OF UNITS
AGE AND FORMATION
LITHOLOGY
Eocene
4
Coarse-grained syenite (shonkinite)
Multi-phase deformation, metamorphism, igneous intrusion
Hadrynian Monk Formation
3C
Grey phyllite and black graptolitic phyllite
3B
Laminated limestone
3A
Grey and green sericitic phyllites
3At felsic tuff
Irene Volcanic Formation
2
Andesitic to basaltic volcanics, fine-grained flows and tuffs
Toby Formation
1
Polymict conglomerate
Bedding — tops known
tops unknown
parallel with cleavage
Cleavage — first
second
third
Geological contact: defined approximate
Limit of outcrop
Mineralized Zone, defined by surface showings
Claims: legal corner post claim line
Road River Creek Intermittant creek
GEOLOGICAL BRANCH
ASSESSMENT REPORT
15,567
NOTE: For geology of the southern part of the Iva-Fern Property, see Figure 7B
SCALE
0 100 200 300 400 500 metres
0 500 1000 1500 feet
N.
19°22' N.mag.
Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.
Figure 7A
AGINCOURT EXPLORATIONS INC.
GEOLOGY
FERN R4175(6) and FERN 3 R4201(6)
IVA-FERN PROPERTY
49° 18.5' N., 116° 55.5' W.
NELSON MINING DIVISION
BRITISH COLUMBIA
L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)
DECEMBER, 1986
2000 W.
1500 W.
1000 W.
500 W.
00
500 E.
1000 E.
3000 N.
2500 N.
2000 N.
1500 N.
1000 N.
LEGAL CORNER POST
FERN 3 R4201 (6)
5NX3W
APPROXIMATE SOUTHERN LIMIT OF LOGGING; OCT., 1986
EXCELSIOR C.G.
L12657
STANDARD C.G.
L12658
MAIN WORKINGS-AREA
NO.4 ZONE
MAIN ZONE
NO.2 ZONE
NO.3 ZONE
NO.5 ZONE
FERN C.G.
L12656
IVA R.C.G. L12655
R1917(8)
LOWER ADIT-AREA
BLACK CAP C.G.
L12654
FERN R4175(6)
5NX3W
CASSIAR EAST YUKON EXP. LTD.
ADJOINS FIGURE 7B



LEGEND

Topography

Road — River — Creek — Intermittent creek

1985 and 1986 Soil Survey

silver in soil in parts per million

sample location

contour

L1700 N soil line number

claim line

legal corner post

Mineralized Zone, defined by surface showings.

NOTES: Silver contours; 0.62 ppm excludes 84% of the 1985 data
1.04 ppm excludes 97.5% of the 1985 data

1985 silver contours are used because the 1985 data population is from areas of known massive mineralization and areas without known mineralization.

For copper, lead and zinc in soils see Figures A, B, C

For details of 1985 soil survey see:
Solkoski, L.R.; 1985: Geological Assessment Report of the Iva-Fern Property

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,567

SCALE

0 100 200 300 400 500 metres

0 500 1000 1500 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 6D

AGINCOURT EXPLORATIONS INC.

SILVER IN SOILS: FERN R4175(6) and FERN 3 R4201(6)

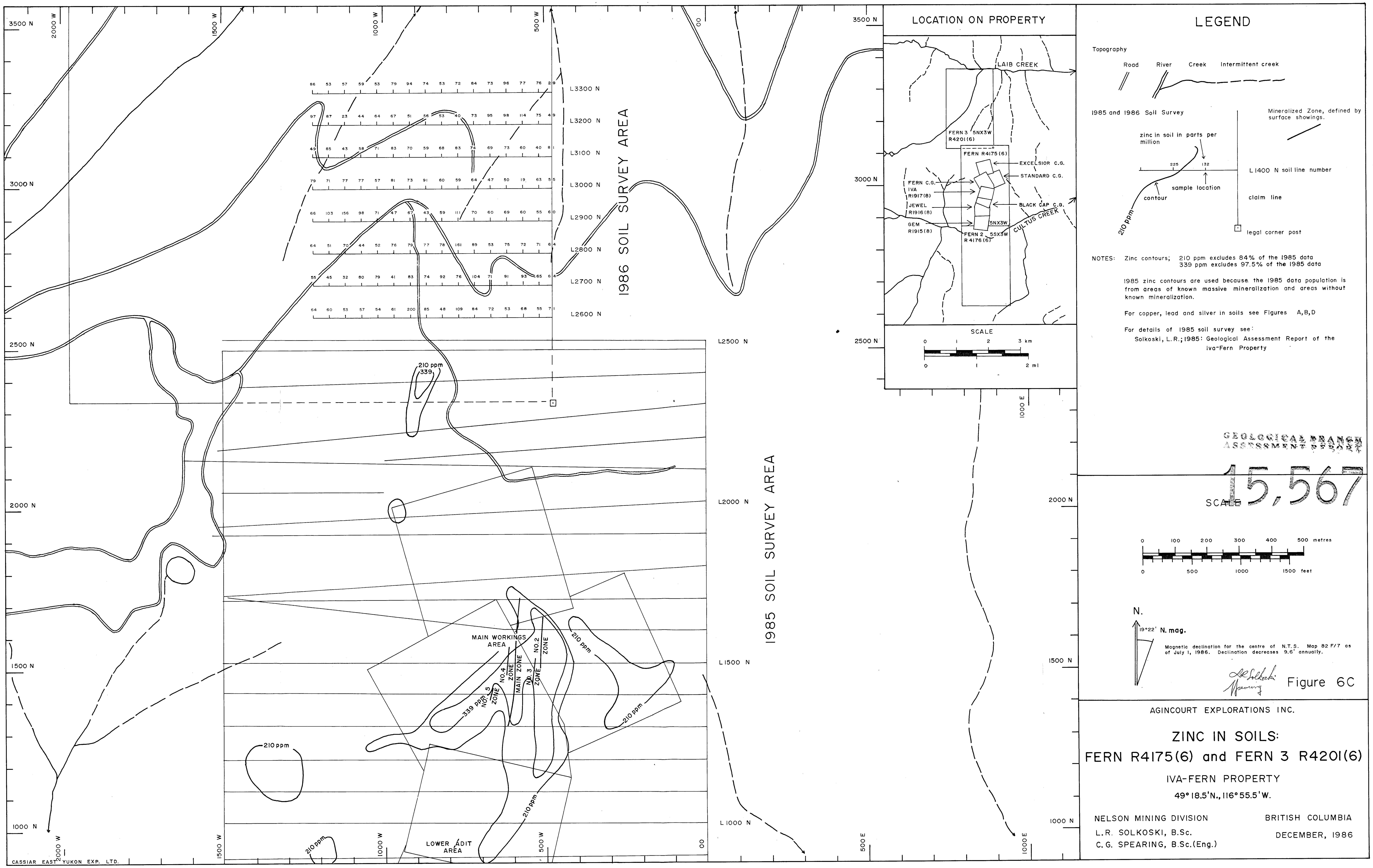
IVA-FERN PROPERTY

49° 18.5'N., 116° 55.5'W.

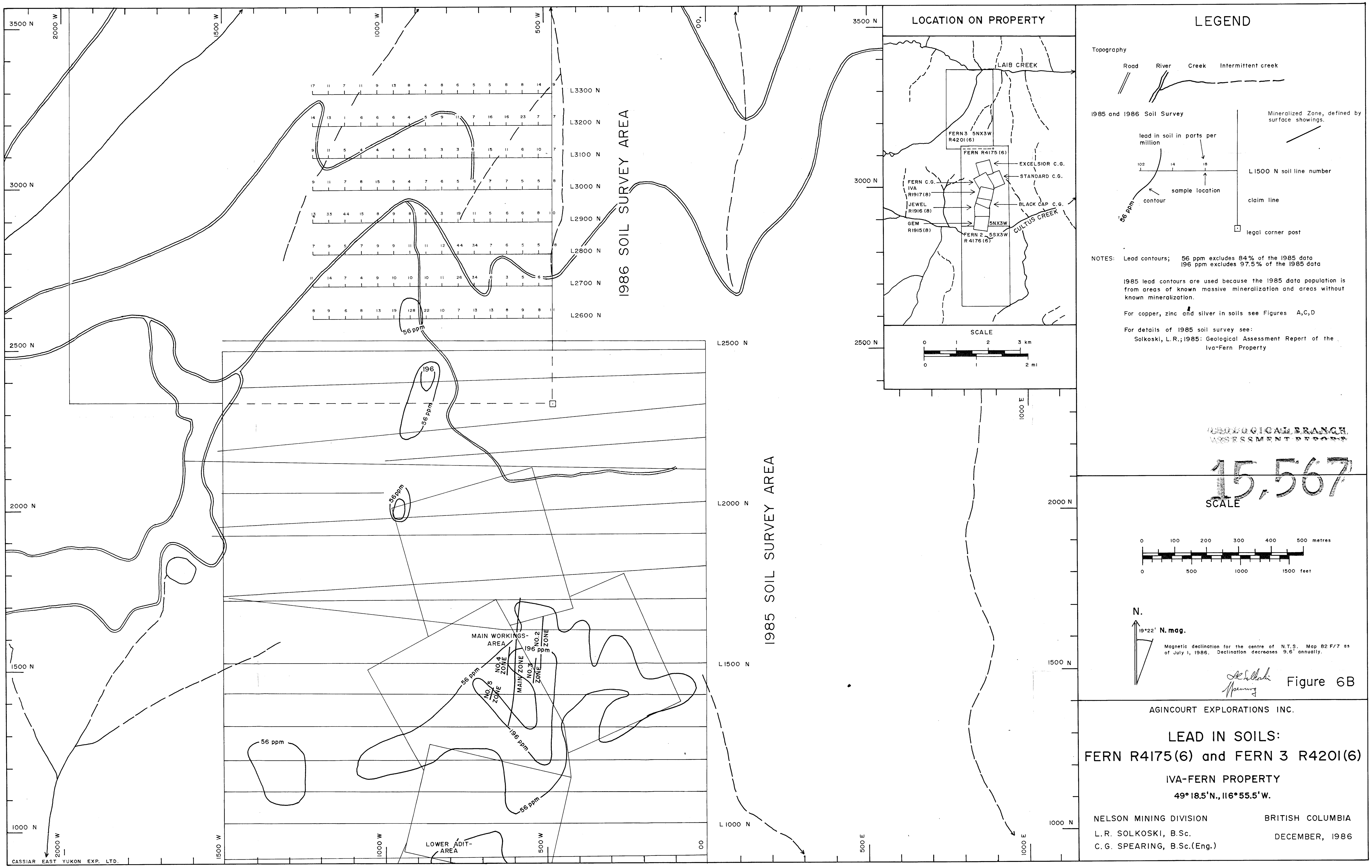
NELSON MINING DIVISION — BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

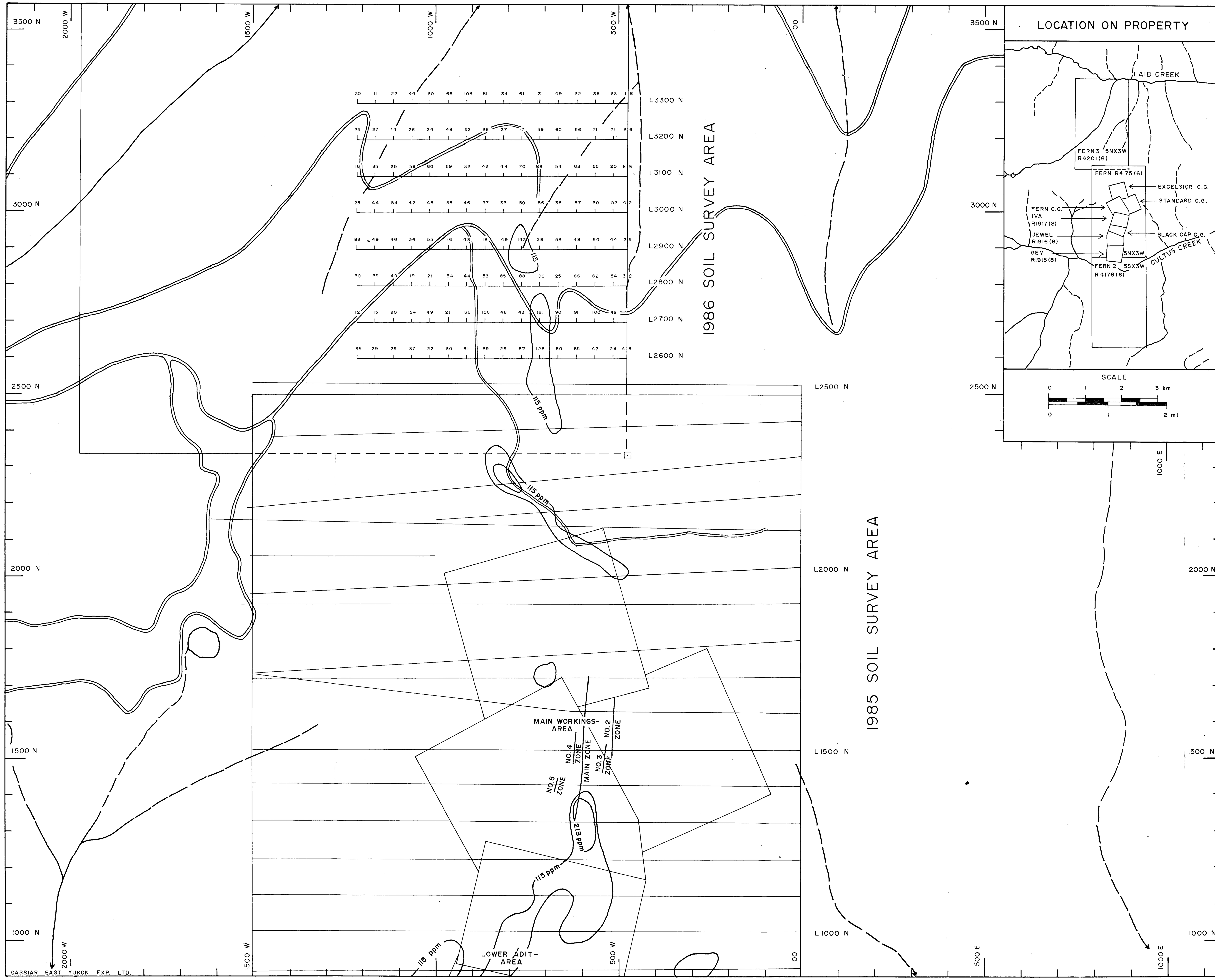
DECEMBER, 1986



1986 SOIL SURVEY AREA
1985 SOIL SURVEY AREA
L3300 N
L3200 N
L3100 N
L3000 N
L2900 N
L2800 N
L2700 N
L2600 N
L2500 N
L2000 N
L1500 N
L1000 N
3500 N
3000 N
2500 N
2000 N
1500 N
1000 N
2000 W
1500 W
1000 W
500 W
00
500 E
1000 E
210 ppm
339
MAIN WORKINGS AREA
NO.2 ZONE
NO.4 ZONE
MAIN ZONE
NO.3 ZONE
NO.5 ZONE
339 ppm
LOWER ADIT AREA
CASSIAR EAST YUKON EXP. LTD.
LOCATION ON PROPERTY
LAIB CREEK
FERN 3 5NX3W R4201(6)
FERN R4175(6)
EXCELSIOR C.G.
STANDARD C.G.
FERN C.G.
IVA R1917(8)
JEWEL R1916(8)
BLACK CAP C.G.
GEM R1915(8)
5NX3W
FERN 2 5SX3W R 4176(6)
CULTUS CREEK
SCALE
0 1 2 3 km
0 1 2 mi
LEGEND
Topography
Road River Creek Intermittent creek
1985 and 1986 Soil Survey
Mineralized Zone, defined by surface showings.
zinc in soil in parts per million
225 132
L1400 N soil line number
sample location
contour
claim line
legal corner post
NOTES: Zinc contours; 210 ppm excludes 84% of the 1985 data
339 ppm excludes 97.5% of the 1985 data
1985 zinc contours are used because the 1985 data population is from areas of known massive mineralization and areas without known mineralization.
For copper, lead and silver in soils see Figures A,B,D
For details of 1985 soil survey see:
Solkoski, L.R.; 1985: Geological Assessment Report of the Iva-Fern Property
GEOLOGICAL BRANCH ASSESSMENT REPORT
15,567
SCALE
0 100 200 300 400 500 metres
0 500 1000 1500 feet
N.
19°22' N. mag.
Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.
Figure 6C
AGINCOURT EXPLORATIONS INC.
ZINC IN SOILS:
FERN R4175(6) and FERN 3 R4201(6)
IVA-FERN PROPERTY
49° 18.5'N., 116° 55.5'W.
NELSON MINING DIVISION
BRITISH COLUMBIA
L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)
DECEMBER, 1986



LOCATION ON PROPERTY
LAIB CREEK
FERN 3 5NX3W R4201(6)
FERN R4175(6)
EXCELSIOR C.G.
STANDARD C.G.
FERN C.G. IVA R1917(8)
JEWEL R1916(8)
BLACK CAP C.G.
GEM R1915(8)
5NX3W
FERN 2 5SX3W R4176(6)
CULTUS CREEK
SCALE
0 1 2 3 km
0 1 2 mi
LEGEND
Topography
Road River Creek Intermittent creek
1985 and 1986 Soil Survey
Mineralized Zone, defined by surface showings.
lead in soil in parts per million
L1500 N soil line number
sample location
contour
claim line
legal corner post
NOTES: Lead contours; 56 ppm excludes 84% of the 1985 data
196 ppm excludes 97.5% of the 1985 data
1985 lead contours are used because the 1985 data population is from areas of known massive mineralization and areas without known mineralization.
For copper, zinc and silver in soils see Figures A,C,D
For details of 1985 soil survey see:
Solkoski, L.R.; 1985: Geological Assessment Report of the Iva-Fern Property
GEOLOGICAL BRANCH ASSESSMENT REPORT
15,567
SCALE
0 100 200 300 400 500 metres
0 500 1000 1500 feet
N.
19°22' N. mag.
Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.
Figure 6B
AGINCOURT EXPLORATIONS INC.
LEAD IN SOILS:
FERN R4175(6) and FERN 3 R4201(6)
IVA-FERN PROPERTY
49° 18.5'N., 116° 55.5'W.
NELSON MINING DIVISION
BRITISH COLUMBIA
L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)
DECEMBER, 1986
1986 SOIL SURVEY AREA
1985 SOIL SURVEY AREA
L3300 N
L3200 N
L3100 N
L3000 N
L2900 N
L2800 N
L2700 N
L2600 N
L2500 N
L2000 N
L1500 N
L1000 N
3500 N
3000 N
2500 N
2000 N
1500 N
1000 N
2000 W
1500 W
1000 W
500 W
00
500 E
1000 E
56 ppm
196
196 ppm
MAIN WORKINGS-AREA
NO.2 ZONE
NO.3 ZONE
NO.4 ZONE
NO.5 ZONE
MAIN ZONE
LOWER ADIT-AREA
CASSIAR EAST YUKON EXP. LTD.



LEGEND

Topography

Road River Creek Intermittent creek

1985 and 1986 Soil Survey

Mineralized Zone, defined by surface showings.

copper in soil in parts per million

115 ppm

31 136 70

L 200 N soil line number

contour sample location claim line

legal corner post

NOTES: Copper contours; 115 ppm excludes 84% of the 1985 data
213 ppm excludes 97.5% of the 1985 data

1985 copper contours are used because the 1985 data population is from areas of known massive mineralization and areas without known mineralization.

For lead, zinc and silver in soils see Figures B, C, D

For details of 1985 soil survey see:
Solkoski, L.R.; 1985: Geological Assessment Report of the Iva-Fern Property

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,567

SCALE

0 100 200 300 400 500 metres

0 500 1000 1500 feet

N.

19°22' N. mag.

Magnetic declination for the centre of N.T.S. Map 82 F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 6A

AGINCOURT EXPLORATIONS INC.

COPPER IN SOILS:
FERN R4175(6) and FERN 3 R4201(6)

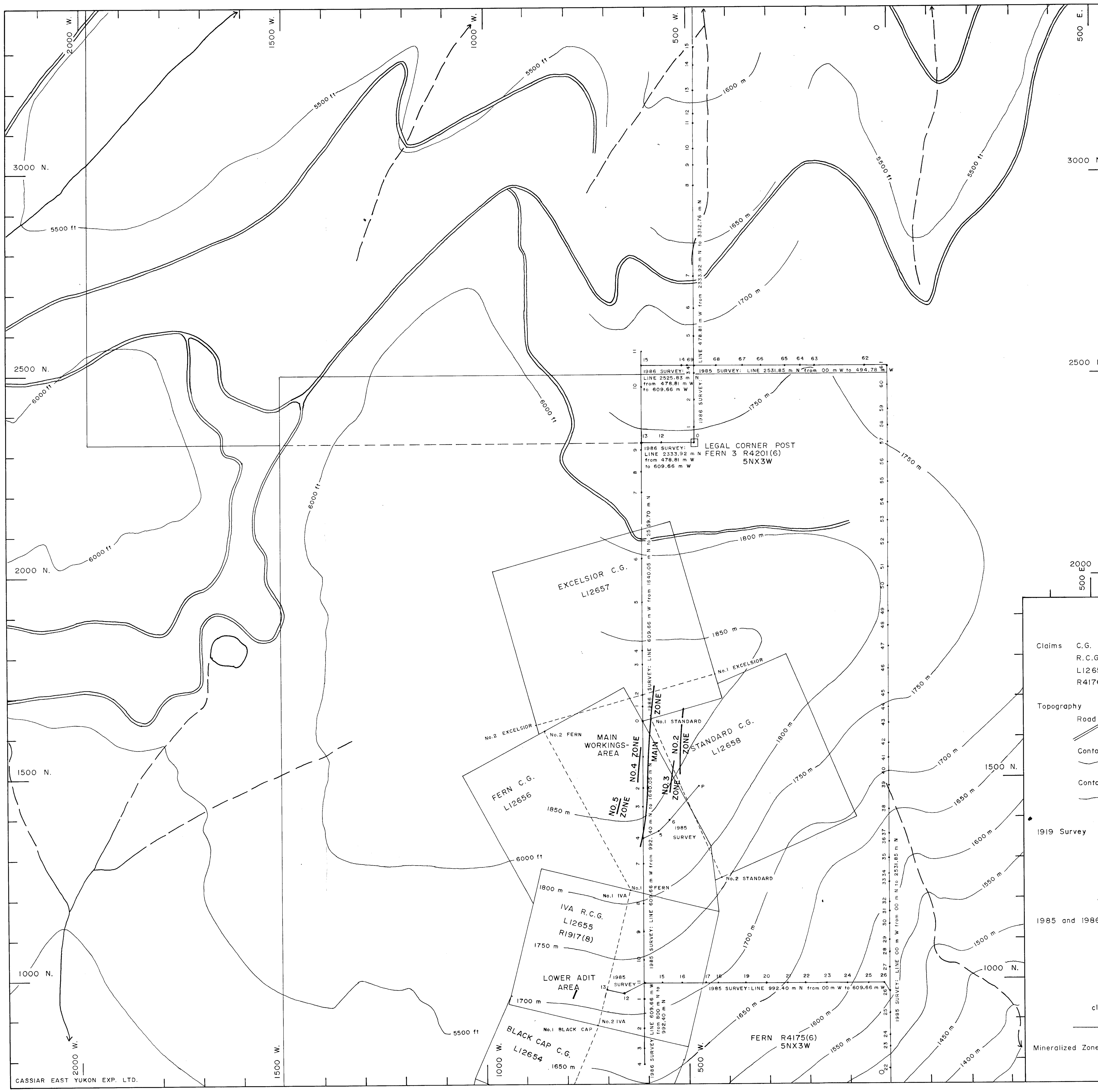
IVA-FERN PROPERTY

49°18.5'N., 116°55.5'W.

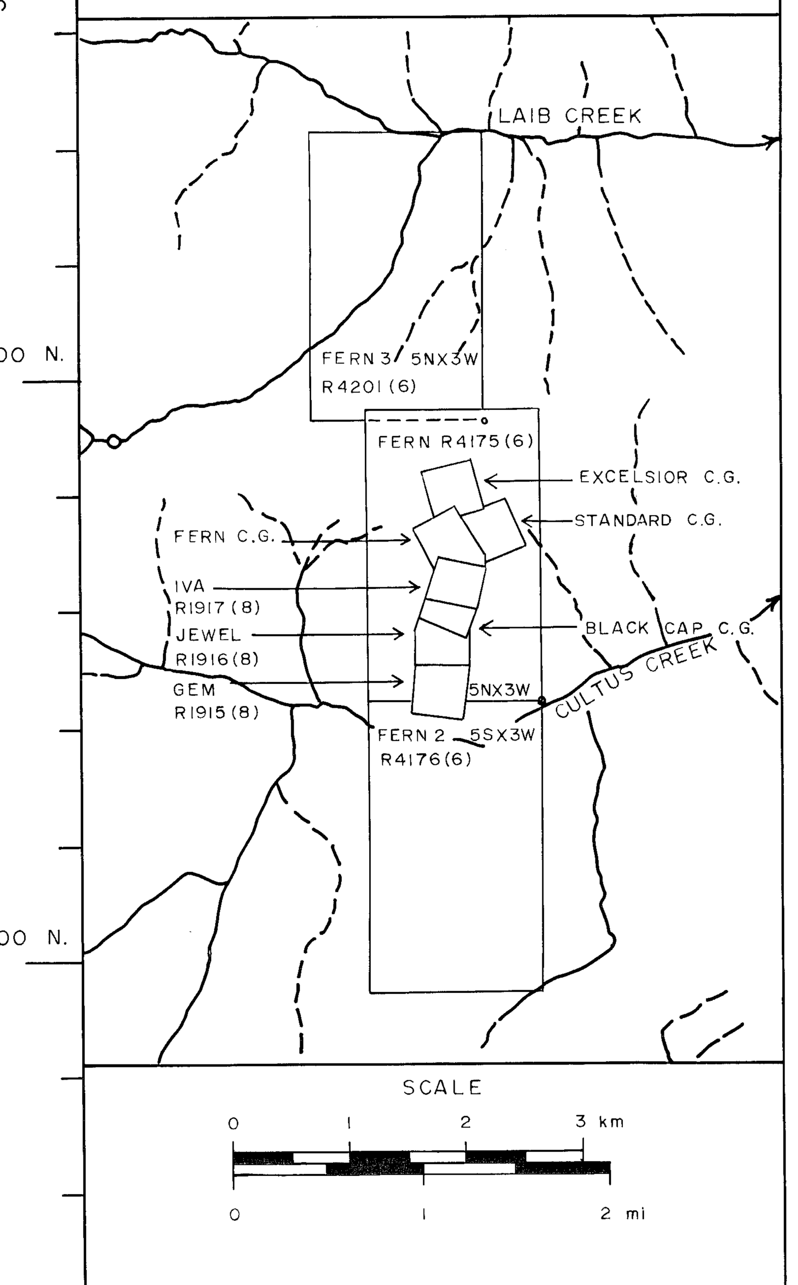
NELSON MINING DIVISION BRITISH COLUMBIA

L.R. SOLKOSKI, B.Sc.
C.G. SPEARING, B.Sc.(Eng.)

DECEMBER, 1986



LOCATION ON PROPERTY



1986 SURVEY: HUB LOCATIONS

EXTENSION OF LINE 609.66 m N FROM 992.40 m N TO 792.29 m N

SURVEY HUB NUMBER	LATITUDE IN METRES	LONGITUDE IN METRES	ELEVATION m A.S.L.	NOTES
1	955.30 N.	609.66	1712.82	
2	882.60 N.	"	1685.91	
3	830.41 N.	"	1666.81	
4	792.29 N.	"	1654.70	

EXTENSION OF LINE 609.66 m N FROM 1640.05 m N TO 2559.70 m N

SURVEY HUB NUMBER	LATITUDE IN METRES	LONGITUDE IN METRES	ELEVATION m A.S.L.	NOTES
1	1680.05 N.	609.66 W.	1895.31	
2	1707.61 N.	"	1889.95	
3	1781.83 N.	"	1865.00	
4	1816.27 N.	"	1855.40	
5	1938.42 N.	"	1821.34	
6	2044.39 N.	"	1800.49	
7	2209.07 N.	"	1778.81	
8	2260.57 N.	"	1773.99	
9	2313.89 N.	"	1764.83	
10	2468.98 N.	"	1738.88	
11	2559.70 N.	"	1717.10	
12	2333.92 N.	558.99 W.	1754.74	TIE LINE TO FERN 3 L.C.P.
13	"	609.66 W.	1764.83	
14	2525.83 N.	509.64 W.	1721.02	TIE LINE TO 1985 SURVEY
15	"	609.66 W.	1722.19	

SURVEY ALONG THE EASTERN BOUNDARY OF FERN 3 R4201(6) FROM ITS LEGAL CORNER POST NORTHWARD TO 3312.76 m N.

SURVEY HUB NUMBER	LATITUDE IN METRES	LONGITUDE IN METRES	ELEVATION m A.S.L.	NOTES
L.C.P.	2333.92 N.	478.81 W.	1753.72	FERN 3 L.C.P.
1	2373.39 N.	"	1746.62	
2	2440.89 N.	"	1733.29	
3	2508.39 N.	"	1719.00	
4	2525.83 N.	"	1715.68	
5	2597.09 N.	"	1705.03	
6	2664.32 N.	"	1694.18	
7	2746.69 N.	"	1677.99	
8	2971.72 N.	"	1638.29	
9	3021.92 N.	"	1632.79	
10	3062.32 N.	"	1627.85	
11	3124.04 N.	"	1616.28	
12	3148.33 N.	"	1613.08	
13	3205.73 N.	"	1597.70	
14	3268.36 N.	"	1578.58	
15	3312.76 N.	"	1564.50	

LEGEND

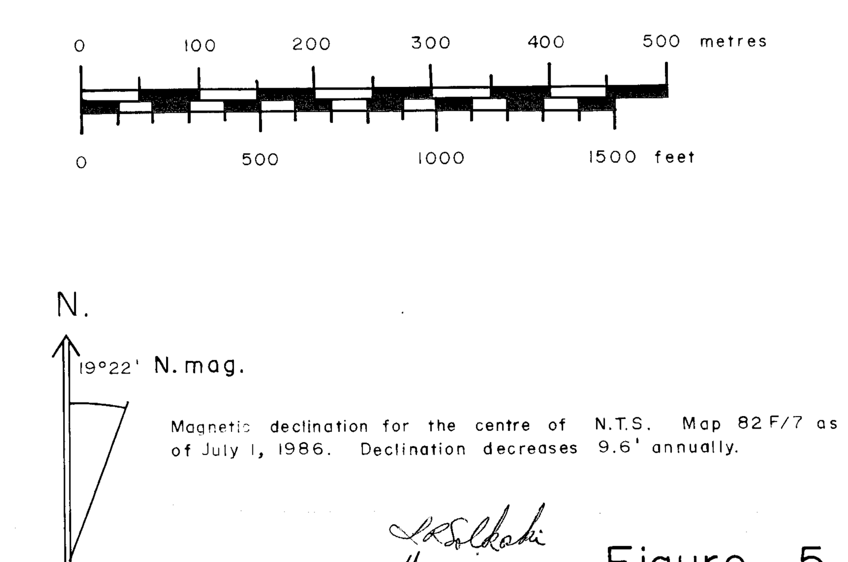
Claims
- C.G. Crown granted mineral claim
- R.C.G. Reverted crown granted mineral claim
- L12657 Lot number from legal survey
- R4176(6) Mineral claim record number

Topography
- Road
- River
- Creek
- Intermittent creek
- Contour in feet, from 1:50,000 scale N.T.S. map sheet 82F/7 — 5500 ft
- Contour in metres, from 1985 and 1986 transit survey data — 1700 m

1919 Survey
- location line
- claim post
- claim line
- turning point

1985 and 1986 Surveys
- survey hub
- surveyed line
- claim line
- overlapped claim line
- legal corner post

Mineralized Zone, defined by surface showings



Magnetic declination for the centre of N.T.S. Map 82F/7 as of July 1, 1986. Declination decreases 9.6' annually.

Figure 5

AGINCOURT EXPLORATIONS INC.

1986 TRANSIT SURVEY

IVA-FERN PROPERTY

49° 18.5'N., 116° 55.5'W.

NELSON MINING DIVISION — BRITISH COLUMBIA

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