85-992

CREAM SILVER MINES LTD.

12/86

GEOPHYSICAL REPORT

ON THE

RUBY MOUNTAIN PROPERTY

ATLIN MINING DIVISION, B.C.

LAT.59°40'N, LONG.133°22'W, NTS 104N/11W

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DATE OF REPORT: NOVEMBER 13, 1985

CLAIMS WORKED ON

Claim	Units	Record No.	Anniversary Date
BEFORE	20	2502	June 20
B-2	20	1375	July 29
B-5	12	2501	June 20
B-6	9	2494	June 20
B-7	4	2504	August 7
B-8	1	2506	August 7
GDC-2	18	2177	February 8

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

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SUMMARY

The Ruby Mountain property is a precious and base metal prospect located near Atlin in northwestern British Columbia. Atlin is the centre of a historic placer mining camp which was started in the late 1800's and is still presently active. Cream Silver Mines Ltd. staked the **B1** to **B3** and **R1** claims in 1981 and have been adding to their holdings as land becomes available for staking. The property is easily accessible by road from Atlin which is connected by a good road to the Alaska Highway.

In 1984 and 1985, Mark Management Ltd. carried out an exploration program on the Ruby Mountain Property on behalf of Cream Silver Mines Ltd. Results of the program indicated that the geologic environment is similar to that hosting known precious and base metal showings in the area and therefore, it has a strong potential for lode gold, silver and base metals mineralization.

In 1985, White Geophysical Inc. was contracted to carry out two induced polarization surveys on the property. A multipole survey was conducted over the Ruby Mountain Area and a dipole-dipole survey was conducted over the Lakeview Area.

Several extensive zones of anomalously high chargeabilities were detected in the Ruby Mountain area. Some of these are coincident with favourable geologic environments and anomalous metal values in soils suggesting they may be detecting sulphide mineralization. Detailed geologic mapping, trenching and diamond drilling are recommended to investigate these zones further.

In the Lakeview area zones of anomalously high chargeabilities correlate with zones of low apparent resistivity. These zones parallel the Lakeview shears, some of the VLF-EM conductors and anomalous metal values in soils outlined by Mark Management in 1984. These zones may be sourced in mineralized shear zones. Investigation by detailed geological mapping, soil sampling, trenching and/or diamond drilling has been recommended.

1. INTRODUCTION

The Ruby Mountain Property, owned by Cream Silver Mines Ltd., is located in northwestern British Columbia, 20 kilometres east of the town of Atlin. The claim group is situated in the historic placer gold mining camp strategically between the three richest placer streams: Birch, Boulder and Ruby Creeks. The original claims, the **B1** to **B3** and **R1**, were staked in 1981 following the report of a large tonnage - low grade gold discovery (near Ruby Mountain) by Yukon Revenue Mines Ltd. More claims have been staked by Cream Silver as ground has become available.

In 1985, White Geophysical conducted two induced polarization surveys on the property. In the Ruby Mountain Area a multipole survey was carried out and in the Lakeview Area a dipole-dipole survey was carried out. A crew of four men worked out of the town of Atlin from Sept. 5 to Sept. 24 and Oct. 15 to Oct. 26.

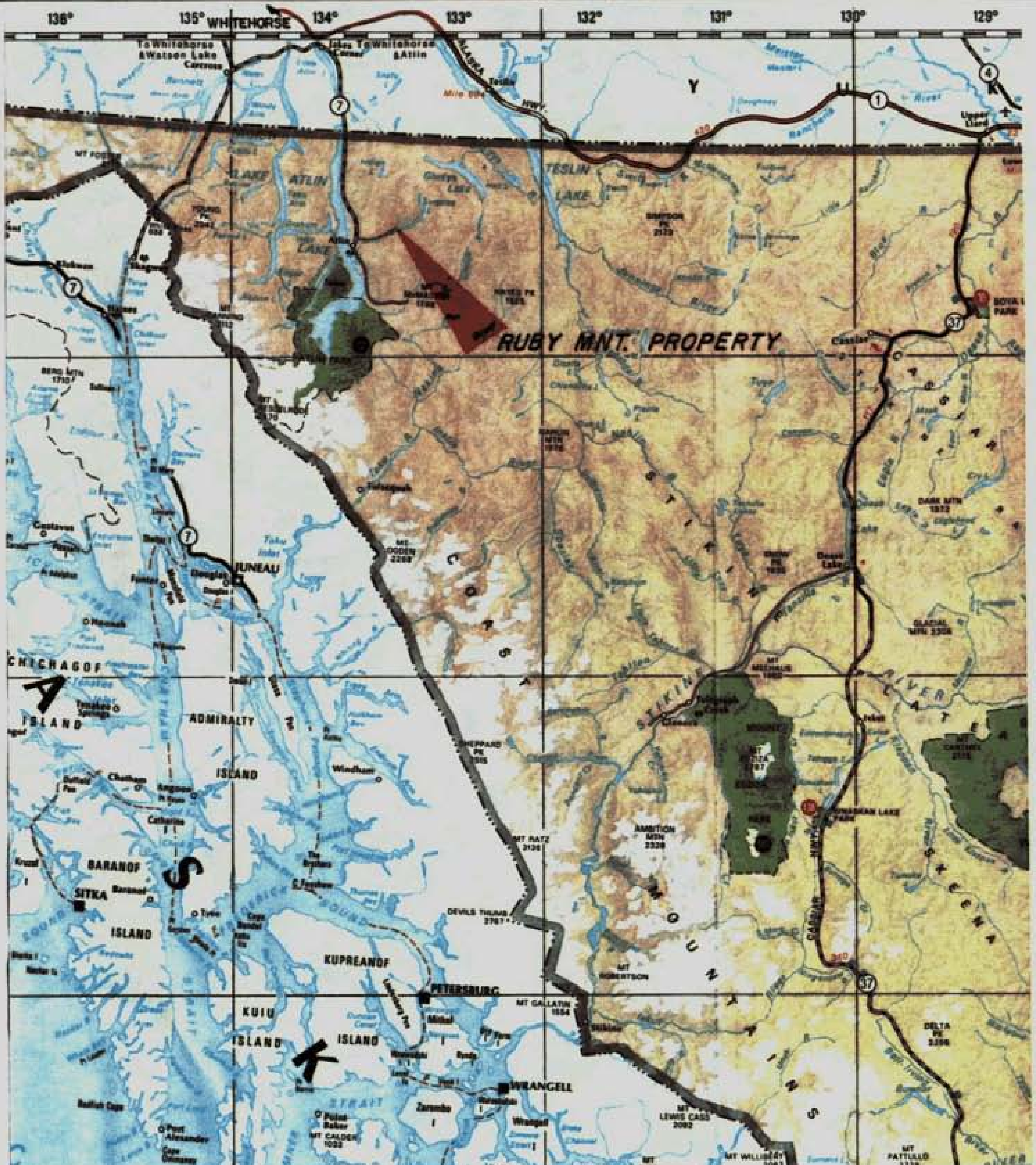
1.1 Location and Access

The Ruby Mountain Property is situated 20 kilometres northeast of the town of Atlin, which is 150 kilometres south of Whitehorse, Yukon Territory. The claims cover 60 square kilometres over the north shore of Suprise Lake in the Atlin Mining Division.

The town of Atlin is accessible from Jakes Corner on the Alaska Highway via a good road which is open all year except during extreme winter conditions. The Alaska Highway extends from Dawson Creek, B.C. to Alaska and is open all year. The closest city to Jakes Corner is Whitehorse, Yukon Territory. This city provides most necessary services for mining and exploration including a public airport with scheduled flights to Vancouver, B.C. and Edmonton, Alberta.

A railway line exists between Whitehorse and the port at Skagway, U.S.A., but it is not presently in operation. Trucking is now the main transport method, either from Skagway or from the east along the Alaska Highway. Charter aircraft, including helicopters, are available in Atlin, Whitehorse and Lower Post on the Dease River.

From Atlin, good gravel roads servicing placer operations along Birch, Boulder and Ruby Creeks provide excellent access to the property. The Ruby Mountain area is accessed by rough gravel roads that run adjacent to Boulder and Ruby Creeks. The Lakeview Mine area is accessed via a four-wheel drive road that leaves the Birch Creek road near the 3,100 foot elevation, leads northeast towards Star Mountain and ends near the 5,425 foot elevation.



SCALE 1 : 2 500 000

kilometres 20 0 20 40 60 80 100 120 140 160 180 200 kilometres

1 INCH EQUALS APPROXIMATELY 40 MILES ELEVATIONS IN METRES ABOVE SEA LEVEL

LOCATION MAP

WHITE GEOPHYSICAL INC.

FIGURE 1·1

1.2 Physiography, Climate and Vegetation

The Ruby Mountain property is in a climatic zone with moderate summers and severe winters. Mean daily temperature in July is less than 14 degrees Celsius and in January is -15 to -20 degrees Celsius. Average annual precipitation is 50 to 75 centimetres. Snowfall can occur during all months of the year but generally occurs from October to April.

The topography of the property is moderately rugged, lying on the Teslin Plateau just east of the Coast Mountains. Slopes are steep to moderate with elevations ranging from 910 metres (2,935 feet) at Surprise Lake to 1880 metres (6,166 feet) on Ruby Mountain. Vegetation consists of white spruce, western white spruce, lodgepole pine, black spruce, alpine fir, balsam, poplar, aspen and dwarf birch in the valleys below 1220 m (4,000 feet) on north facing slopes and below 1525 m (5,000 feet) on south facing slopes. Above these elevations (tree line) mountain alder and willow grow adjacent to creeks and stunted buckbrush covers the hills.

The property is drained by Ruby Creek and Boulder Creek which flow southward into Surprise Lake and by Birch Creek which flows southward into Pine Creek. Suprise Lake flows westward into Pine Creek which continues westward into Atlin Lake.

Glacial till occurs as a thin or non-existent cover over low elevations. Felsenmeer and outcrop are exposed at higher elevations. North-south trending creek valleys were caused by Pleistocene valley glaciation.

1.3 Claim Information

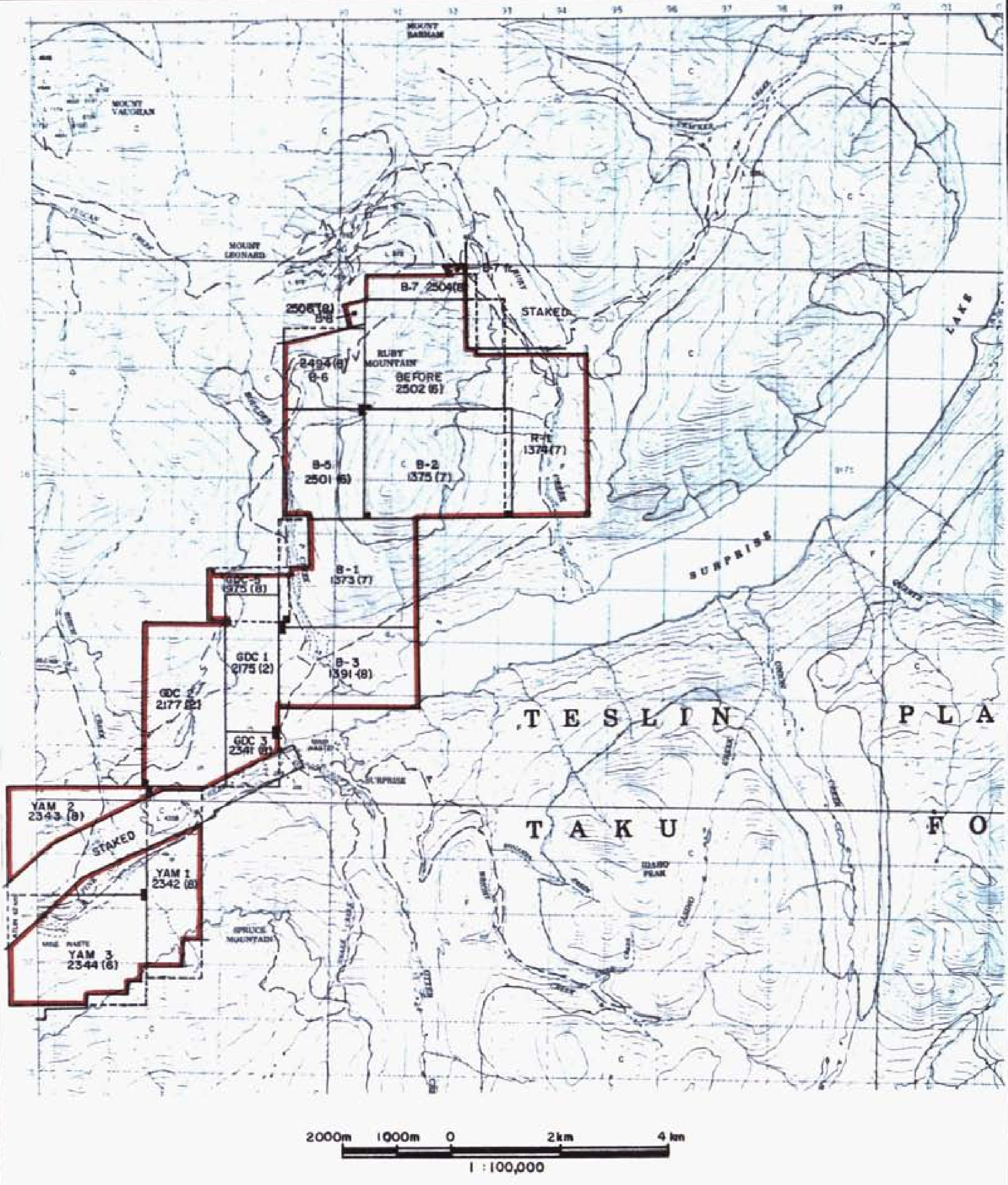
The Ruby Mountain property is comprised of 17 modified grid claims totalling 240 units. The claims are centred at latitude 59°40'N and 133°22'W on NTS map sheet 104N/11W (Figure 1.3). Claim information is given on the table below.

TABLE 1.3

CLAIM STATUS

Claim Name	Units	Record No.	Expiry Date	Year Staked
B-1	20	1373	July 29, 1989	1981
B-2	20	1375	July 29, 1988	1981
B-3	15	1391	July 29, 1989	1981
BEFORE	20	2502	June 20, 1986	1985
B-5	12	2501	June 20, 1986	1985
B-6	9	2494	June 20, 1986	1985
B-7	4	2504	Aug. 7, 1986	1985
B-7 FR.	1	2505	Aug. 7, 1986	1985
B-8	1	2506	Aug. 7, 1986	1985
GDC 1	10	2176	Feb. 8, 1988	1984
GDC 2	18	2177	Feb. 8, 1988	1984
GDC 3	4*	2341	Aug. 10, 1989	1984
GDC 5	6	1975	Aug. 2, 1989	1983
R-1	18	1374	July 29, 1988	1981
YAM 1	14*	2342	Aug. 10, 1989	1984
YAM 2	20*	2343	Aug. 10, 1989	1984
YAM 3	20*	2344	Aug. 10, 1989	1984

* less fractions previously staked as illustrated on Figure 1.3.



CLAIM MAP

NT.S. 104 N / 11 W – ATLIN MINING DIVISION, B.C.

WHITE GEOPHYSICAL INC.

FIGURE 1-3

1.4 History

The Atlin placer mining camp was started around 1897. Ranchers and prospectors on their way to the Klondike discovered gold on Pine Creek, according to the B.C. Dept. of Mines annual reports researched by Gonzales and Wong (1984). By the end of 1898 more than 3,000 people were camped in the Atlin area. Gold was produced from twenty nine creeks but only Spruce, Pine, Birch, Boulder, Ruby, Otter, Wright and McKee were important producers.

Gonzales and Wong (1984) give a production estimate of one million ounces of gold since 1898, 40% of which was from Spruce Creek. Table 1.4 shows the gold production from the main creeks up to 1946.

TABLE 1.4

(Compiled by Gonzales and Wong, 1984
from Holland, 1950 and Black, 1953.)

GOLD RECOVERY FROM PRODUCTIVE CREEKS, ATLIN AREA, 1898-1946

Stream Name	Ounces of Gold Produced
Spruce Creek	262,603
Pine Creek	138,144
Boulder Creek	67,811
Ruby Creek	55,272
McKee Creek	46,953
Otter Creek	20,113
Wright Creek	14,729
Birch Creek	12,898
All Others (21 creeks)	15,624
Total Production	633,147

It should be noted that the B.C. Dept. of Mines records show 705,229 ounces of gold sold from the Atlin area during this same period suggesting not all gold production was reported (Gonzales and Wong, 1984).

The increase in the price of gold in the late 1970's created a renewed interest in the placer operations which currently run for five months a year.

Most of the known lode mineralization showings, gold bearing quartz veins, were discovered by 1905 and no regional exploration for such was recorded after that time (Gonzales and Wong, 1984).

Low-grade gold values over a stockwork of carbonated and silicified andesite adjacent to a serpentinite in the old Lakeview Mine area were discovered in 1981 by Yukon Revenue Mines Ltd. This discovery sparked renewed interest in the lode mineralization in the Atlin area. Cream Silver staked the "B" and "R" claims in 1981. As more ground became available over the years, more claims were added including those covering the Lakeview Mine area. Additional lode - gold discoveries have been made by other companies within a similar geologic environment since 1981.

Other lode mineralization discoveries have been made in the Atlin area. These include: The Adanac - Adera, molybdenum and tungsten deposit on Ruby Creek and the Black Diamond tungsten, tin, lead zinc, silver deposit on Boulder Creek. Undocumented reports indicate gold mineralization was also found at the Black Diamond Mine.

In 1984, Mark Management Ltd. carried out geological mapping, geochemical sampling, airborne and ground electromagnetometer and magnetometer surveys, and trenching in order to evaluate the claims for Cream Silver Mines Ltd. Geologic mapping showed that the area is underlain by Cache Creek Group volcanics and metasediments intruded by Late Paleozoic talc-bearing ultramafics and a Cretaceous alaskite body. In the Ruby Mountain area these rocks are covered by a Tertiary olivine basalt and scoria ejected from a larger cindercone that forms Ruby Mountain. Old showings mapped in the area include uranium mineralization in the alaskite, wolframite-cassiterite-galena-gold associated with quartz veins in the alaskite, molybdenite and chalcopyrite in the alaskite and copper-lead-zinc-tungsten mineralization in skarn zones at the alaskite-carbonate contact. The airborne geophysical survey outlined areas of weak magnetic response which are apparently caused by intensely altered ultramafics. Trenching exposed quartz veins occurring in the metasediments which carry anomalous tin and tungsten values and minor lead and zinc values. This mineralization occurs adjacent to a limestone pod in an actinolite bearing skarn. Soil sampling outlined anomalous tungsten-tin (± lead-zinc) values in the Ruby Mountain area and anomalous gold values in the Lakeview area.

In 1985, Archean Engineering carried out detailed geologic mapping and soil sampling in the Ruby Mountain area. (See 1985 Assessment Report by Archean Engineering.)

1.5 Program Conducted by White Geophysical Inc. in 1985

In 1985, field work was carried out by White Geophysical from September 5 to September 24 and from October 15 to October 26. During this period the following surveys were completed:

1) A multipole induced polarization survey covering ten lines on the Ruby Mountain grid.

2) A dipole-dipole induced polarization survey covering four lines on the Lakeview grid.

2. GEOLOGY

2.1 General Geology

The geology of topographic sheet 104N/11W was mapped and compiled from 1951 to 1955 by J.D. Aitken of the Geological Survey of Canada (GSC) on Map 1082A and in Memoir 307. J.W.H. Monger, also of the GSC, mapped the Atlin area in 1966-68 and published his work in GSC Paper 74-47.

The Atlin Terrane is part of the oceanic sequence of the Intermontane (tectonic) Belt. Rocks belonging to the Atlin Terrane are the upper Paleozoic Cache Creek Group of cherts, argillites, conglomerates, volcanics and carbonates; the upper Paleozoic Atlin (ultramafic) Intrusions; Late Cretaceous Nisling Range Alaskite Intrusions and the Tertiary olivine basalt and scoria.

Faults bounding the Atlin Terrane make it a tectonic entity. The Teslin (vertical) Fault bounds the terrane to the northeast and the Nahlin Salmon (reverse) Fault bounds it to the southwest. Monger (1975) describes the terrane as being structurally characterized by compressional deformation which is similar in style and trend to the southwest bounding faults. Minor fold axes generally strike northwest or trend southwest (Gonzales and Wong, 1984).

According to Aitken (1959), Pleistocene glaciers covered the area at least, if not more than, twice. The topography was strongly affected by the glaciers and extensive, locally thick, till was deposited.

2.2 Property Geology and Mineralization

The property was mapped and described by C. Wong of Mark Management Ltd. and R. Gonzales of Archean Engineering Ltd. in 1984 and 1985. The following description is taken from their 1984 report.

> "Outcrop exposure accounts for 5 per cent of the surface area on this property. Felsenmeer is present in areas of no outcrop and is assumed to be close to outcrop. Till covers the valleys below 1370 m (4,500 feet) elevation.
>
> The property is underlain by Cache Creek Group metasediments and volcanics intruded by Pennsylvanian and Permian talc-bearing ultramafics and a Cretaceous alaskite stock (Figure 2.2). Locally, especially in the eastern portion of the claims, older rocks are capped by Tertiary olivine basalt flows and scoria ejected from a large cinder cone that forms Ruby Mountain. In topographically lower areas the Cache

GEOLOGY

G.S.C. MAP 1082 A, N.T.S. 104 N / 11 W

WHITE GEOPHYSICAL INC.

FIGURE 2·1

LEGEND

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT

17 *Glacial drift; alluvium*

TERTIARY AND QUATERNARY

16 *Olivine basalt and scoria;* **16a**, *Tertiary;* **16b**, *Pleistocene*

TERTIARY (?)

15 **15a**, *quartz monzonite;* **15b**, *granophyre;* **15c**, *gabbro and diorite*

CRETACEOUS OR TERTIARY
SLOKO GROUP

14 *Andesite, basalt; albite trachyte, albite rhyolite, dacite, and related pyroclastic rocks; conglomerate, sandstone*

CRETACEOUS

13 **13a**, *alaskite,* **13b**, *quartz monzonite*

JURASSIC *(May be in part older and younger)*
COAST INTRUSIONS

12 *Undifferentiated granitic rocks;* **12a**, *Black Mountain body,* **12b**, *Fourth of July Creek body;* **12c**, *pink granite;* **12d**, *Mount McMaster body;* **12e**, *diorite;* **12f**, *alkaline granite*

JURASSIC
LABERGE GROUP

11 *Volcanic greywacke, siltstone, mudstone, shale, conglomerate; minor concretionary sandy limestone*

TRIASSIC (?)

10 *Greywacke, chert, argillite, conglomerate, tuff, slate, greenstone, impure limestone, jasper*

PALÆOZOIC

PENNSYLVANIAN AND PERMIAN
ATLIN INTRUSIONS

9 *Peridotite; meta-diorite and meta-gabbro;* **9a**, *serpentinite;* **9b**, *carbonitized serpentinite;* **9c**, *talc-bearing (steatitized) ultramafic rocks*

CACHE CREEK GROUP

6 7 8
6. *Chert, argillite, chert-pebble conglomerate and chert breccia; derived quartzite and schist; minor 7 and 8*
7. *Greenstone and volcanic greywacke; derived amphibolite; minor 6 and 8*
8. *Limestone and limestone breccia*

PENNSYLVANIAN AND/OR PERMIAN

4 5
4. *Andesite, basalt, and related pyroclastic rocks; conglomerate, sandstone, shale*
5. *Limestone*
May be in part or wholly equivalent to 6, 7, 8

MISSISSIPPIAN AND/OR EARLIER
SYLVESTER GROUP

3 **3a**, *greenstone, chlorite schist, greywacke, quartzite, quartz-biotite schist;* **3b**, *impure crystalline limestone*

PRECAMBRIAN OR PALÆOZOIC

PRE-PERMIAN

2 *Quartz monzonite*

YUKON GROUP

1 *Hornblende-quartz-feldspar schist and gneiss; quartzite, crystalline limestone. May be in part equivalent to 3*

A *Undifferentiated, mainly volcanic rocks of uncertain, possibly several, ages. Andesite, basalt, agglomerate, tuff, breccia; diorite and quartz diorite porphyries; rhyolite. In part probably Triassic, probably equivalent to 10*

FIGURE

Creek and the intrusive rocks are capped by unconsolidated auriferous gravels and minor glacial till. The stratigraphic sequence exposed on the claims is as follows:

Recent	Glacial till and fluvial gravel
Pleistocene and Recent	Olivine basalt flows and scoria
Pleistocene (Late?)	Glacial fluvial sediments
Cretaceous	Alaskite and skarn rocks
Pennsylvanian and Permian	Cache Creek Group: metasediments, including chert, argillite, impure siliceous carbonates, and amphibolite and time equivalent metavolcanics.

The Cache Creek Group rocks consist of limestone, argillite, chert, and andesite. Monger (1975) classifies the limestone, argillite, and chert as forming part of the Kedaheda Formation and the andesite as part of the Nakina Formation. The massive limestone is ash grey in colour. The chert is typically dark grey to black in colour and locally is interlayered with argillite containing beds of graphite. The andesite is typically drab grey-green in colour, siliceous, sometimes weakly carbonatized and contains 1% primary pyrite.

The Pennsylvanian and Permian ultramafics are part of the Atlin Intrusions and consist of peridotite and serpentinite. The rock is usually dark green to dull waxy green in colour and locally talcose. Alteration of the ultramafic is extensive, and most of the rocks have been subject to varying intensities of serpentinization (20 to 100%) or carbonatization. The carbonatized ultramafics are characterized by rusty-orange brown weathering and its topographically recessive nature.

The R-1 Claim Block is partly underlain by a Cretaceous alaskite body that represents a portion of the Surprise Lake Batholith. This rock unit is light coloured and varies in texture from coarse-grained to the more common fine-grained variety. In the Ruby Mountain area a skarn occurs where the alaskite has intruded the Cache Creek limestone unit. Analysis of rock chip samples of metasediments and quartz veins from this area detected highly anomalous values of silver, lead, zinc, tin and tungsten.

Because of the limited outcrop exposures it is difficult to obtain specific structural information, however, it appears that the metasediments have northeasterly strikes and dip steeply to the northwest. There is no evidence of isoclinal folding in the area and it is assumed that the exposed rock sequence is a normal one. Faulting is not uncommon and several shears have been recorded although their extent is limited by poor exposures. At the west end of Surprise Lake, a fault striking approximately 015° marks the contact between the Cache Creek Group metasediments and the talcose ultramafic rocks of the Atlin Intrusions. At the Lakeview Adit a 4 m wide vein/shear striking 205° (025°) and dipping 060° northwest has parallel fractures extending up to 100 m into the wall rock."

3. GEOPHYSICS

3.1 Ruby Mountain Multipole Induced Polarization Survey

A multipole induced polarization survey was conducted over ten lines of the Ruby Mountain grid. The purpose of the survey was to extend known mineralized zones, to determine the source of anomalous silver, copper, lead, zinc, tin and tungsten values found in soils by Archean Engineering and to outline lithologic contacts and potential mineralization covered by the Tertiary basalt and scoria.

A four man crew conducted the survey while based in the town of Atlin, from September 5 to September 24 and October 22 to October 25.

3.1.1 Survey Method

The multipole induced polarization method is a technique which exploits the rapid signal acquisition and processing capabilities available with current micro computer technology. With this technique the potential field information is obtained through a multiconductor cable having 36 takeouts at 25 metre intervals. The cable is presently configured as up to six end and position interchangeable cables of 150 metre length. The takeouts are addressed by the 40 channel multiplexer assembly in a specially configured HP-3497A data acquisition system as 25 metre to 275 metre dipoles. The data acquisition system is driven by a HP-85 computer, allowing the data to be stacked in the computer for a number of cycles at full precision until a criteria is reached. Ten windows on the secondary voltage are compiled, as well as the primary voltage information. Time zero is sensed by direct reference to the transmitter timing circuitry. The cable is scanned simultaneously in groups of five dipoles and the decay curves presented graphically for acceptance and logging or rejection and rescan by the operator. The data is logged on digital tape cartridges and is readily accessed in the field in order to produce pseudo-sections. These tapes are read by a HP-9845 computer for further processing and production of final report ready sections.

The primary field power is provided by a Huntec MK IV 2.5 kw transmitter operated in time domain mode which is driven by a 400 Hz, 120 volt three phase motor generator. The transmitted signal is an alternate cycle reversing current pulse of two second on and two second off time. The current is introduced into the ground through two current electrodes for each scan of the potential cable. By scanning the cable for each of several current stake positions both along the cable and off the ends of the cable a strong measure of redundancy of coverage of a given depth point is assured. The stacking of this multiple scan information in the computer results in an improved determination of the geoelectric section.

The apparent resistivity is obtained from the ratio of the primary voltage measured on the potential dipole during the current on part of the cycle to the current flowing through the current electrodes. A geometric factor is computed from the electrode locations to arrive at the apparent resistivity, measured in ohm-metres.

The apparent chargeability is calculated from the ten secondary voltage windows as the area under the secondary decay curve and is measured in milliseconds.

3.1.2 Discussion of Results Ruby Mountain Project

The multipole induced polarization data is illusrated in pseudo section form on Figures 3.1.1 to 3.1.12. The anomalous responses are illustrated in plan form on Map 3.1. The survey was undertaken in mountainous terrain and included numerous areas of scree and talus where difficulties were encountered in obtaining ground contact. This was particularly present in the northeastern portion of the grid where volcanic scoria is present. Through careful electrode siting and preparation, sufficient current and (received) voltage levels were achieved to allow useful, although somewhat noisy, data to be gathered.

Lines 1800N, 1600N, and 1400N traversed the scoria cover. The pseudo sections show the presence of numerous weak chargeability highs. See Figures 3.1.2 to 3.1.5. Some of the isolated single dipole responses may be noise, caused by poor ground contact. A substantial multiseparation chargeability high occurs at approximately 850E on lines 1800 and 1600N. This anomaly is labelled A on the Interpretation Map 3.1. The geochemical survey was not carried out over this area because the scoria acts as a geochemical barrier. The thickness of the scoria is not evident in the apparent resistivity data suggesting that there is little resistivity contrast between the scoria and the underlying rock units. A noticeable increase in apparent resistivity (from a 300 to 800 ohm-metre background to a 1000 to 1700 ohm-metre background) occurs at approximately 700E on lines 1600N and 1400N. This may be a lithologic contact in the rock beneath the scoria cover.

Several continuous trends of anomalous chargeabilities are evident south of line 1400N. Trends B and C are compact anomalies, occurring in the shallow separations only, and may be related to narrow sources such as shear zone mineralization. Compact apparent resistivity lows correlate with these chargeability highs. Trend B strikes northeasterly from 1400N to 650N but is best established on line 1200N at 300W. Trend C parallels B, extending from 800N to 1000N. Trend B occurs entirely within the alaskite and is slightly coincident with anomalous metal values in soils. An anomalous silver zone crosscuts Trend B; anomalous tungsten values flank both sides of Trend B and some anomalous copper values occur in soils both coincident with and downhill from Trend B. Trend C occurs along the alaskite-chert contact which may be evident in the apparent resistivity data which exhibits an increase just east of Trend C. Anomalous metal values were found in soils covering part of Trend C. Anomalous tin, tungsten and silver values were obtained from soils at the northeast end (downhill) of this trend. Anomalous copper and zinc values occur in soils flanking this trend to the east (uphill).

A distinct break in character and strike in the anomalous chargeability data occurs between the line 1400N to 800N area and 650N to the south. Several chargeability highs (D,E and F) occur on line 650N and correlate with highs on line 400N. These trends exhibit a north-south strike whereas Trends B and C strike northeasterly. However, some correlation between the two areas is evident. The apparent resistivity contrast exhibited adjacent to Trend C extends from line 800N to 650N. High chargeability Trend B correlates well with a high at 600W on line 650N.

The anomalous chargeability responses labelled D,E and F are more complex and extended than B and C and are evident in deeper separations. The best expressed of these zones are Trends D and E which represent polarizable zones possessing substantial width and depth extent. The responses are slightly weaker on line 400N than on line 650N. Apparent resistivity is generally high over Trends D and E, however, a distinct and narrow low occurs at the eastern edge of Trend D. Responses D, E and F were detected over a skarn similar to those hosting copper-lead-zinc-tungsten mineralization in the Atlin area. Anomalous silver, lead, zinc, tin and tungsten values were also detected in rock chip samples of metasediments and quartz veins adjacent to a skarn on the Ruby Mountain Property.

Trend D coincides with anomalous metal values of 1500 ppm copper, 725 ppm lead, >1000 ppm tin and 1100 ppm tungsten in soils collected at 250W on line 650N. Anomalous copper values in soils extend to 250 and 300W on line 400N which correlates with Trend D. Anomalous tungsten values were found in soils over the southeast (uphill) of Trend E and anomalous copper values occur in soils at the north end (downhill). Anomalous tin values were found in soils downhill from Trend E on line 400N. A massive sulphide vein is mapped off the end of and along strike with Trend E. A four separation chargeability high also occurs on line 00N along the same strike. The 400 metre separation between line 400N and 00N is too great for direct correlation of anomalies, however, it is worthy of follow-up.

A distinct chargeability low and apparent resistivity contrast is evident on line 650N at 25E. This may represent a geologic contact.

Two lines, 00N and 200S (Figures 3.1.11 to 3.1.12) were run to the south to traverse the extensive zone of anomalous copper-lead-zinc-tin-tungsten-silver values detected in soils. Unfortunately, the intermediate line 200N, which would be of great utlity in correlating Responses D,E and F across to the southern area, was not surveyable due to extreme talus conditions. The responses obtained on lines 00N and 200S were somewhat weaker than those observed on lines 650N and 400N. A high chargeability response, labelled G, on line 00N at 100 to 200W correlates well with a similar response on line 200S. This response is evident in four separations on both lines 00N and 200S.

Trends in apparent resistivity highs on these lines seem to crosscut the high chargeability Trend G. The high chargeability trend coincides with a distinct apparent resistivity high on line 200S but lies 100 metres east of a similar zone on line 00N. A highly resistive zone is present in shallow separations on line 200S between 100W and 75E. The larger separations in this area show the presence of several chargeability highs beneath the resistive zone. The data suggests that very large geoelectric property changes are present in the lithology between the two lines.

Trend G occurs within a large zone of anomalous copper-lead-zinc-tin-tungsten-silver values found in soils. Values of up to 185 ppm copper, 1650 ppm lead, 1300 ppm zinc, 130 ppm tin, and 8.9 ppm silver occur in soils collected over Trend G. Anomalous tungsten values occur in soils flanking Trend G.

3.2 Lakeview Dipole - Dipole Induced Polarization Survey

A dipole-dipole survey was conducted over four lines on the Lakeview Grid. The purpose of the survey was to extend known mineralized zones and to determine the source of anomalous gold, silver, lead, zinc and copper values found in soils by Mark Management Ltd.

A four man crew conducted the survey while based in the town of Atlin from October 15 to October 21.

3.2.1 Survey Method

The equipment used on this survey was the Huntec pulse-type unit and Mark IV receiver. Power was obtained from a Briggs and Stratton motor coupled to a 2.5 Kw 400 cycle, three phase generator, providing a maximum of 2.5 Kw D.C. to the ground. The cycling rate is 2.0 seconds "current on" and 2.0 seconds "current off", the pulse reversing continuously in polarity. Power was transmitted to the ground through two potential electrodes, P1 and P2, which were deployed in the dipole-dipole electrode array.

The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes P1 and P2 during the "current on" part of the cycle, and the secondary voltage (Vs) appearing between electrodes P1 and P2 during the "current off" part of the cycle. A 100 millisecond delay (Td) was used with 100 millisecond window widths (Tp).

The apparent chargeability (M') in milliseconds, is returned by the Mark IV receiver. M0, M1, M2, M3, M4, M5, M6, M7, M8 and M9 are the chargeability effects at various times on the voltage decay curve following switch off of the transmitter, measured as a percentage of the primary voltage, Vp recorded during the "current on" time. By the use of these factors, one can gain an estimate of the decay curve in terms of chargeability for the given time Tp. This gives a quantitative value to the data measured.

The apparent resistivity, in ohm-meters is proportional to the ratio of the primary voltage to the measured current, the proportionality factor depending on the geometry of the electrode array used. The chargeability and resistivity obtained are called "apparent" as they are values which that portion of the earth sampled by the array would have if it were homogeneous. As the earth sample is usually inhomogeneous, the calculated apparent chargeability and apparent resistivity are functions of the actual chargeabilities and resistivities of the rocks sampled and of the geometry of the rocks.

3.2.2 Discussion of Results

The data is illustrated in pseudo section form on Figures 3.2.3 to 3.2.6. The n=1 data was chosen as representative of the plan behaviour of the data set and has been contoured on Maps 3.2.1 and 3.2.2. The data shows the development of strong trends in both the chargeability and apparent resistivity data. These trends follow a north-northeast strike. It should be noted that data collected every 50 metres on lines spaced 200 metres apart leaves room for interpolation when contouring. Ground contact conditions were favourable over most of the property.

The apparent resistivity data, Figure 3.2.2, shows two, parallel, clearly defined lows trending north-northeasterly. The more pronounced of the two, on the west side, is well correlated with a strong chargeability high and remains open to the south. The eastern trend is also correlated with a chargeability high. This chargeability anomaly weakens in the first separation to the south of line 00N, but is well supported in the deeper separations, for example on line 00N (Figure 3.2.4).

A third chargeability anomaly exists near 325W on line 200N (Figure 3.2.3). The peak occurs within a broad high, possibly representative of a formational polarizable source. Well fractured andesites have been mapped just west of this area. One of the fracture orientations, as well as bedding, appear to parallel the chargeability trend.

The Lakeview adit is situated along the transition zone between an apparent resistivity high and a pronounced apparent resistivity low. Mark Management Ltd. mapped a four metre wide vein/shear striking 025°/60° NW at the adit as well as parallel fractures extending up to 100 m into the wall rock. The shear zone appears to be manifested as an apparent resistivity low. The width of this low suggests that it is most likely sourced in the aggregate effect of numerous shears. Alternately, the zone of silicification may be represented by the apparent resistivity high detected to the east of the adit where silicification has been observed in the andesites. The chargeability and apparent resistivity contrasts are representative of somewhat repetitous features suggesting, a third possibility, that their source is formational. Chargeability anomalies are, however, much higher than expected for unmineralized bedrock.

Seven VLF-EM conductors were outlined on the Lakeview grid by Mark Management Ltd. in 1984. Archean Engineering interpreted these conductors as sourced in shear zones. Two different trends are evident in the VLF-EM data. In the southern half of the grid the conductors, labelled A to D on Map 2.3, show a north-northwesterly strike. This strike crosscuts the north-northeasterly trend exhibited in the chargeability and apparent resistivity data. Conductor A, however, changes direction towards the south end and nearly parallels the induced polarization data. In the northern part of the grid conductors E,F and G (Map 2.3) nearly parallel the north-northeasterly trend exhibited in the chargeability and apparent resistivity data.

Conductor F occurs over the Lakeview adit on the edge of an apparent resistivity high which may represent a zone of silicification. Conductor D and E are found within the same highly resistive zone. Conductors B and C appear to be the faulted extensions of D towards the southeast. Conductor B occurs mostly within another zone of high apparent resistivity which correlates with high chargeability at depth. Conductor C occurs within a moderately low apparent resistivity zone. Conductor G, which may be a faulted extension of F, also occurs within a zone of low apparent resistivity, however, it is also just off the northeast end of a zone of high chargeability.

Soil sampling was also carried out by Mark Management Ltd. over the VLF-EM conductors. Where anomalous gold, silver, copper and zinc values were found on more than one line, the contoured zones follow a north-northeasterly trend. Some of these zones occur within areas of high apparent resistivity. These zones include: anomalous gold-zinc-lead-copper values in soils just southwest of Conductor A; anomalous gold-copper-silver values in soils southwest of Conductor B; and anomalous gold-lead-silver values southwest of Conductor E. Over the Lakeview adit and Conductor F anomalous gold-silver-lead-copper and zinc values occur in soils.

Other zones of anomalous metal values detected in soils appear to be associated with zones of low apparent resistivity and VLF-EM conductors suggesting this mineralization may be related to shear zones. Anomalous gold-copper-silver and zinc values were detected in soils from the northwestern edge of Conductor A. Soils from the west of Conductor G were found to have anomalous gold-lead-silver values.

Anomalous silver and gold values occur in soils within a zone of low apparent resistivity at 375W and 325S. There are no conductors proximal to this zone.

It should be noted that the soil sampling was carried out selectively over the VLF conductors and has not fully tested the induced polarization coverage.

4. CONCLUSIONS

White Geophysical Inc. conducted a program of multipole induced polarization surveying on the Ruby Mountain Property and a brief program of dipole-dipole induced polarization surveying on the Lakeview Property.

Ruby Mountain Project

This survey delineated a number of anomalously high chargeability zones. In the northernmost area of coverage a substantial multiseparation chargeability high (A) was detected on two lines. The coverage was quite noisy in this area, due to poor ground contact afforded by a basalt and scoria cover.

In the western area of the coverage, the survey delineated northeasterly trending chargeability highs (B and C) along the chert-alaskite contact and within the alaskite. These compact anomalies may be sourced in shear zones in this area.

South of this area, three highly anomalous zones (D, E and F) correlate well between line 650N and line 400N. These chargeability highs show greater widths than previous anomalies and are evident in several separations suggesting more extensive polarizable sources. The underlying rocks are limestones and metasediments of the Cache Creek Group into which the alaskite has been intruded. Some of the limestones have been altered to a skarn similar to those known to host copper-lead-zinc-tungsten mineralization in the Atlin area. Analysis of rock chip samples of the metasediments and crosscutting quartz veins adjacent to a skarn, taken by Mark Management Ltd., detected highly anomalous values of silver, lead, zinc, tin and tungsten.

This evidence suggests that these extensive polarizable sources may be sulphide mineralization.

Ground contact conditions force a gap in coverage south of line 400N to line 00N. In the area between line 00N and 200S chargeability amplitudes are much reduced with a single zone (G) correlated between lines. This is a high chargeability response evident in four separations. Changes in apparent resistivity character between the two lines and the presence of chargeability highs beneath the resistive zone are evident as well. These suggest that very large geoelectric property changes are present in the lithology between line 00N and 200S. Zone G was detected within an extensive area in which highly anomalous copper-lead-zinc-tin-tungsten values were detected in soils.

The Lakeview Project

The most prominent feature evident in this survey is the repetitious nature of both the chargeability and apparent resistivity data. This feature alone suggests that the responses are a function of formational properties of the bedrock. However, the anomalous chargeabilities recorded are much higher than would be expected for nonmineralized bedrock.

Chargeability highs correlate well with apparent resistivity lows. The survey outlined two clearly defined apparent resistivity low trends which may be caused by aggregates of shear zones. The chargeability highs along these shear zones may be caused by either sulphide mineralization and/or graphite and/or clay.

Prior to 1905, lode gold mining was carried out via the Lakeview adit which is situated along a four metre wide vein/shear within a 100 m wide zone of parallel shears. This adit is situated on the transition zone between an apparent resistivity low trend and a high trend which parallel the Lakeview shears. The low zone is most likely the manifestation of the aggregate of shear zones while the high may be sourced in the silicification evident in the andesites in this area. (See Map 2.3).

A VLF-EM survey carried out by Mark Management Ltd. in 1984, outlined several VLF conductors which were interpreted as shear zones by Archean Engineering. Approximately half of these VLF conductors exist within chargeability highs and resistivity lows. These conductors most likely represent shear zones along which either sulphide mineralization and/or graphite and/or clay occurs.

Anomalous metal values found in soil samples by Mark Management parallel the north-northeasterly trend of the chargeability and apparent resistivity zones and the Lakeview shears. Due to the selectivity of the sampling carried out the survey delineated several anomalies of interest but did not fully test the induced polarization coverage.

Correlations between the induced polarization data, the VLF-EM survey and the soil sampling survey suggest that Conductors B and G are the most significant.

5. RECOMMENDATIONS

As a result of the conclusions given the following is recommended:

In the Ruby Mountain Area:

1. High chargeability Zones D, E and F should be followed up by geological mapping, trenching and/or diamond drilling.

2. High chargeability Zone G should be followed up by geological mapping, trenching and/or diamond drilling.

3. High chargeability Zones A, B and C should be followed up by geological mapping.

In the Lakeview Area:

1. The apparent resistivity low - chargeability high trends should be followed up by detailed geological mapping and soil sampling.

2. The intermediate apparent resistivity low and high trend along which the Lakeview shears are located should be followed up by geological mapping, soil sampling and possibly trenching or diamond drilling.

3. VLF-EM conductors, B and G, should be followed up by geological mapping and possibly trenching or diamond drilling.

Respectfully submitted,

Cliff Candy

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Geophysicist

GEOLOGICAL ASSOCIATION OF CANADA
J.C. FREEZE
FELLOW

Joanne C. Freeze, B.Sc.,
F.G.A.C., Geologist

REFERENCES

AITKEN, J.D., 1960; Atlin Map Area, British Columbia: Geological Survey of Canada, Memoir 307 and Map 1082 A.

GONZALES, R.A. and WONG, C., 1984; Assessment Report For Geological, Geochemical, Geophysical, And Trenching On The Ruby Mountain Property, Atlin Mining Division, B.C.

MONGER, J.W.H., 1975; Upper Paleozoic Rocks of The Atlin Terrane, Northwestern British Columbia and South-Central Yukon, Geological Survey of Canada, Paper 74-47, 63 p. and maps.

COST STATEMENT

Sept. 5 to 24 and Oct. 15 to 23

Personnel	Days	Rate/Day	Total
D. Roberts	12	$250	$ 3,000.00
M. Seywerd	10	250	2,500.00
B. Acheson	22	175	3,850.00
B. Goldbeck	22	150	3,300.00
D. Odenwald	22	150	3,300.00
Instrument Rental	22	250	5,500.00
Food and Accommodation	31	100	3,100.00
Vehicle	31	123	3,813.00
Helicopter			2,304.60
Mobilization - Equipment			1,254.00
Airfares			1,107.00
Road Work			1,200.00
Drafting			750.00
Computer Plotting			750.00
Report Writing			1,000.00
		TOTAL	$36,728.60

STATEMENT OF QUALIFICATIONS

NAME:	CANDY, Clifford E.
PROFESSION:	Geophysicist
EDUCATION:	University of British Columbia B.Sc., Geophysics
PROFESSIONAL ASSOCIATIONS:	Society of Exploration Geophysicists British Columbia Geophysical Society.
EXPERIENCE:	Eight years Geophysicist with White Geophysical Inc., with work in British Columbia, Quebec, Saskatchewan, South-western U.S.A. and Ireland.

STATEMENT OF QUALIFICATIONS

NAME: Freeze, J.C., (nee Ridley), B.Sc., F.G.A.C.

PROFESSION: Geologist

EDUCATION: 1981 B.Sc. Geology - University of British Columbia

1978 B.A. Geography - University of Western Ontario

PROFESSIONAL ASSOCIATIONS: Fellow of the Geological Association of Canada

EXPERIENCE: 1985 - Present: Project Co-ordinator - Geologist with White Geophysical Inc. Coordinating mineral exploration projects involving geology, geochemistry, geophysics and diamond drilling in B.C. and Yukon.

1981 - 1985: Project Geologist with Mark Management Ltd. Hughes-Lang Group. Responsible for precious metals exploration programmes involving geology, geochemistry, geophysics and diamond drilling in Western Canada.

1979 - 1981: Summer and part-time Geologist involved with coal exploration in N.E. B.C. with Utah Mines Ltd.

APPENDIX I

INSTRUMENT SPECIFICATIONS - MARK IV RECEIVER

Inputs

SIGNAL CHANNEL

Range	5 x 10 to 10 volts. Automatic gain ranging. Overload indication above 10 volts.
Resistance	Greater than 10 Ohms differential (i.e. between + and - terminals).
Capicatance	Less than 3 x 10 Farads
Bias Current	Less than 10 Amperes
Bandwidth	Basic bandwidth is 100 Hz. A 12 Hz digital lowpass filter is selectable via a switch on the programming panel.
SP Cancellation Range	-5 to +5 volts (automatic)
Protection	Low leakage diode clamps, gas discharge surge arresters, field replaceable fuses.
Terminals	Two colour-coded (red and black) signal inputs plain chassis ground terminal. Push posts: 120 volt insulation, accepts maximum 1.5 mm diameter wire.

REFERENCE CHANNEL

Maximum Overload Indication	5 volts peak Operates above approximately 5 volts peak
Resistance	2 x 10 Ohms differential
Capacitance	Less than 3 x 10 Farads
Input Connector	Four pin female (includes battery and ground, for operating reference isolation amplifiers)

Battery

10 Nickel-Cadmium "F" cells in series. Nominal 12.5 volts. 8 hours continuous operation in RUN or STANDBY mode. LOW BATTERY indicator operates at a nominal 11.5 volts. Automatic shut-down occurs at approximately 10 volts to prevent battery damage and/or bad data. Battery voltage is available on digital display via keypad.

Functional Specifications

Electrical

MEMORY

Random Access Memory (RAM)	4k, expandable to 8k
Erasable Programmable Read Only Memory (EPROM)	6k, expandable to 8k

SIGNAL CHANNEL

Automatic Gain Ranging Amplifier	x1 to 4096 in increments of 2n
Aliasing polynomial, 24	100 hz low pass fourth order MURROMAF Filter db/octave roll off
Sample and Hold A/D Converter	12-bit, signal aperture 125 x 10 seconds
Sampling Rate	Frequency domain mode 512 Hz Time domain mode 256 Hz
Synchronization	Determined by phase locked loop. Frequency of input signal should be within 0.01% of frequency setting on sub-panel for minimum synchronization delay.
Rejection filters	Greater than 40 db at rejection frequency, auto tuned at start of reading.
Self Calibration	Compensates for drift in analogue circuitry to improve accuracy of amplitude and phase measurements.

MECHANICAL

M-4 Receiver with Battery Pack	45 cm x 33 cm x 14 cm, 9.1 kg
M-4 Receiver (with battery pack and cassette DataLogger)	Same dimensions, 10.1 kg

Replaceable battery pack	3.3 cm x 11 cm x 45 cm, 3 kg

ENVIRONMENTAL

Temperature	Operation: -20°C to +55°C Storage: -40°C to +70°C
Humidity	Moisture proof, operable in light drizzle. Splash-proof switches, keypad protected by rubber boots, gasket seals on programming panel cover, main chassis and cassette loader
Altitude	-1525 m to 4775 m
Shock and Vibration	Suitable for transport in bush vehicles

DISPLAYS AND INDICATORS

Analogue Meter	Ohms scale for receiver electrode resistance measurements and indication of instrument activity, which facilitates qualitative judgments of signal and noise levels.
LCD, 3 1/2 digits	Provides the operator with numeric indication of measurement results, and of instrument faults discovered during execution of diagnostic routines. An over-range arrow indicates that the display reading is to be multiplied by 1000.
Signal Overload	Blinks red when the peak signal at either input with respect to the ground terminal exceeds about 10 volts.

REF Overload	Blinks red when the reference input level should be reduced (active only during the reference "ON" time).
Low Battery	Blinks red when the battery voltage falls below 11.5 volts.
Power	Steady red indicates power is on.

HP-85A Specifications

OPERATING SYSTEM

ROM .... 32K bytes

USER READ/WRITE MEMORY

Standard .... 16K bytes
Expansion memory module .... 16K bytes

DYNAMIC RANGE

Real precision: -9.99999999999E499 to -1E-499, 0 and 1E-499 to 9.99999999999E499
Short precision: -9.9999E99 to -1E-99, 0, 1E-99 to 9.9999E99
Integer precision: -99999 to 99999

BUILT-IN FUNCTIONS

Mathematical and trigonometric functions are included in the following table with average execution times in msec.

Absolute (ABS)	0.83
Fractional part (FP)	1.01
Integer part (IP)	2.56
Maximum (MAX)	6.42
Minimum (MIN)	6.19
Modules (MOD)	2.21
ln (LOG)	32.11
log (LGT)	26.63
e^x (EXP)	24.54
Raise to power (Y↑X)	43.92
Random number (RND)	3.54
Sign (SGN)	0.90
Square root (SQR)	8.74
Sine (SIN)	45.62
Cosine (COS)	45.69
Tangent (TAN)	27.27
Arcsine (ASN)	43.23
Arccosine (ACS)	43.98
Arctangent (ATN)	22.76
Cosecant (CSC)	51.68
Secant (SEC)	51.72
Cotangent (COT)	27.29
+	1.08
−	1.12
÷	5.92
•	2.85
Ceiling (CEIL)	2.91
Floor (FLOOR)	3.33

Built-in Operators
Logic: AND, OR, NOT, EXOR
Relational: =, >, <, <=, >=, <> (or #)

CRT DISPLAY

Size .... 127 mm (5 in.) diagonal
Capacity:
Alphanumeric ...... 16 lines × 32 characters
Graphics .... 192 × 256 dots
Scrolling capacity ..... 64 lines
Character set .... 256 characters; set of 128 + same set underscored
Character font .... 5 × 7-dot matrix
Intensity .... adjustable to 32 ft-lamberts
Cursor .... underline

CLOCK AND TIMERS

Time is maintained as seconds since midnight, along with year and day in year. Three timers can be programmed to generate individual interrupts periodically, at intervals from 0.5 msec to 99,999,999 msec (1.16 days).

BEEPER

The beeper is programmable with parameters for duration and tone. The frequency range is approximately 0 to 4,575 Hz.

OPERATING REQUIREMENTS

Source .... 115 Vac nominal (90-127 Vac)
230 Vac nominal (200-254 Vac)
Line frequency .... 50-60 Hz
Consumption ..... 40 watts nominal
HP-85A operating temperature .... 5° to 40°C (40° to 105°F)
HP-85A storage temperature .... -40° to 65°C (-40° to 150°F)
HP-83A operating temperature .... 0° to 55°C (32° to 131°F)
HP-83A storage temperature .... -40° to 75°C (-40° to 167°F)
Ambient humidity ...... 5% to 80% at 40°C

SIZE AND WEIGHT

Height .... 15.9 cm (6.3 in.)
Width .... 41.9 cm (16.5 in.)
Depth .... 45.2 cm (17.8 in.)
HP-85A Weight:
net .... 9.1 kg (20 lbs)
shipping .... 16.8 kg (37 lbs)
HP-83A Weight:
net .... 7.3 kg (16 lbs)
shipping .... 15.0 kg (33 lbs)

BASIC FUNCTIONS AND STATEMENTS

System Functions

ABS—Absolute value of the numeric expression.
ACS—Principal value (1st or 2nd quadrant) of the arccosine of the numeric expression in the current angular units.
ASN—Principal value (1st or 4th quadrant) of the arcsine of the numeric expression in the current angular units.
ATN—Principal value (1st or 4th quadrant) of the arctangent of the numeric expression in the current angular units.
ATN2—Arctangent of Y/X in proper quadrant.
CEIL—Smallest integer greater than or equal to the numeric expression.
COS—Cosine.
COT—Cotangent.
CSC—Cosecant.
DATE—Julian date in the format YYDDD, assuming system timer was set.
DTR—Converts the value of the numeric expression from degrees to radians.
EPS—A constant equal to the smallest positive real precision number, 1E-499.
ERRL—Line number of latest error.
ERRN—Error number of latest error.
EXP—Value of Napierian e raised to the power of the computed expression.
FLOOR—Largest integer less than or equal to the evaluated expression.
FP—Fractional part of the evaluated expression.
INF—A constant equal to the largest real number possible, 9.99999999999E499.
INT—Largest integer less than or equal to the evaluated expression (equivalent to FLOOR).
IP—Integer part of the numeric expression.
LGT—Common logarithm (base 10) of a positive numeric expression.
LOG—Natural logarithm (base e) of a positive numeric expression.
MAX—Larger of two values.
MIN—Smaller of two values.
PI—Numerical value of pi.
RMD—Remainder resulting from a division operation according to X-(Y*IP(X/Y)).
RND—Generates a number that is greater than or equal to zero and less than one, using a predetermined, pseudo-random sequence.
RTD—Converts the value of the numeric expression from radians to degrees.
SEC—Secant.
SGN—Returns a 1 if the expression is positive, -1 if negative, and 0 if exactly 0.
SIN—Sine.
SQR—Square root of a positive numeric expression.
TAN—Tangent.
TIME—Returns the time in seconds since midnight if the timer is set, or since machine turn-on otherwise, resetting automatically after 24 hours.

String Functions

CHR$—Converts a numeric value between 0 and 255 into a character corresponding to that value.
LEN—Returns the number of characters in a string.
NUM—Returns the decimal value corresponding to the first character of the string expression.
POS—Returns the position of the first character of a substring within another string or 0 if the substring is not found.
UPC$—Converts all lowercase letters in a string to uppercase letters.
VAL—Returns as a numeric value, including exponent, a string of digits so that the value may be used in calculations.
VAL$—Returns the value of a numeric expression as a string of digits.

General Statements and Programmable Commands

BEEP—Outputs a tone of specified frequency for a specified duration.
CLEAR—Clears the CRT.
COM—Dimensions and reserves memory so chained programs can access the same data.
CRT IS—Allows the definition of either a printer or the actual CRT as the current CRT.
DATA—Provides constants and text characters for use with READ statements.
DEFAULT ON—Makes numeric overflows, underflows, and the use of uninitialized variables non-fatal by substituting an appropriate approximate value.
DEFAULT OFF—Makes numeric overflows, underflows, and the use of uninitialized variables fatal.
DEF FN—Defines a single- or multiple-line function.
DEG—Sets degree mode for evaluation and output of the arguments and results of trigonometric functions.
DIM—Declares the size and dimensions of array and string variables.
DISP—Outputs the values or text on the current CRT.
DISP USING—Displays values and text according to format specified by IMAGE statement or literal IMAGE.
END—Terminates program execution (same as STOP).
FLIP—Changes the keyboard from BASIC mode to typewriter mode or vice versa.
FN END—Terminates a multiple-line function.
FOR/NEXT—Defines a program loop and the number of iterations.
GOSUB—Transfers program control to a subroutine and allows subsequent return of control.
GOTO—Transfers program execution to the specified line.
GRAD—Sets grad mode for evaluation and output of the arguments and results of trigonometric functions.
IF...THEN...ELSE—Allows statements to be either executed or bypassed depending on the outcome of a logical expression.
IMAGE—Specifies the format used with PRINT USING or DISP USING statements.
INPUT—Allows entry of values or text from the keyboard during program execution.
INTEGER—Declares variables as integers as well as the size and dimensions of integer arrays.
KEY LABEL—Displays in the lower portion of the CRT, an eight-character prompt for each Special Function Key defined by an ON KEY statement. Also returns cursor to upper left corner of the CRT.
LET—Assigns a value to a variable or array element.
LIST—Lists the program on the CRT IS device. Also outputs bytes remaining at the end of a program.
NORMAL—Cancels the effect of the PRINT ALL, AUTO, or TRACE statements.
ON ERROR—Sets up a branch to the specified line or subroutine anytime an error occurs.
OFF ERROR—Cancels any ON ERROR statement previously executed.
ON KEY #—Sets up a branch to the specified line or subroutine each time the Special Function Key is pressed.

SPECIFICATIONS TABLES

SYSTEM ACCURACY SPECIFICATIONS

These system specifications combine individual accuracy specifications to result in a total measurement accuracy specification. For example, the resistance specifications combine the DVM, current source and acquisition assembly error terms.

Voltage Measured Through Acquisition Assembly

3497A Configuration:
DVM: 5½ digit, auto zero on
Relays Switches: Tree Switched

Accuracy: ±(% of reading + number of counts)

90 Days 23°C ± 5°C

Voltmeter Range	Digits Displayed 5½ digits	4½ digits	3½ digits
0.1V	0.007 + 5	0.01 + 2	0.1 + 1
1.0V	0.006 + 1	0.01 + 1	0.1 + 1
10.0V	0.006 + 1	0.01 + 1	0.1 + 1
100.0V	0.006 + 1	0.01 + 1	0.1 + 1

Resistance Measured Through an Acquisition Assembly

3497A Configuration:
DVM: 5½ digit, auto zero on
Current Source: As indicated
Relay Switches: Configured for a 4-terminal resistance measurement

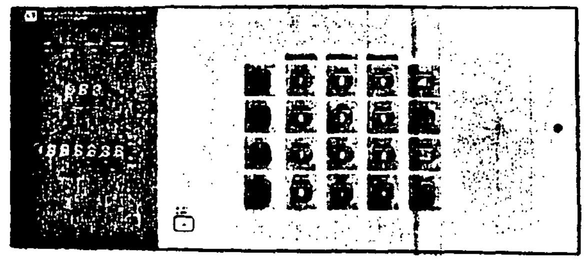
Characteristics

Effective Resistance Range	Effective Resistance Resolution	Current Source Range	Range
100 Ω	1 mΩ	1 mA	.100000
1 kΩ	10 mΩ	100 μA	1.00000
10 kΩ	100 mΩ	100 μA	10.0000
100 kΩ	1 Ω	10 μA	10.0000

Accuracy: ±(% of reading + number of counts)

90 Days 23°C ± 5°C

Range Relays (Opt. 010)	Digits Displayed 5½ digits	4½ digits	3½ digits
100 Ω	.032 + 5	.035 + 2	0.125 + 1
1 kΩ	.032 + 5	.035 + 2	0.125 + 1
10 kΩ	.032 + 5	.035 + 2	0.125 + 1
100 kΩ	.031 + 2	.035 + 2	0.125 + 1



System Noise Rejection

Normal Mode Rejection (NMR): (50 or 60 Hz + .09%)

DVM Digits Displayed	Rejection
5½	60 dB
4½	0 dB
3½	0 dB

NMR is a function of the 3497A DVM configuration only and is not affected by the number of channels in the system.

Effective Common Mode Rejection (ECMR): The ECMR of a 3497A based system is a combination of the ECMR of the 3497A DVM and the effects of adding multiplexer assemblies and 3498A extenders.

ECMR: 1(kΩ imbalance in low lead, using tree switching, ac at 50 or 60 Hz, 25°C, <85% R.H.)

Voltmeter Configuration

Number of Acquisition Channels (Options 10,20)		5½ digits	4½ digits	3½ digits
0	AC	150 dB	90 dB	90 dB
	DC	120 dB	120 dB	120 dB
<100	AC	150 dB	90 dB	90 dB
	DC	104 dB	104 dB	104 dB
<400	AC	140 dB	80 dB	80 dB
	DC	92 dB	92 dB	92 dB
<1000	AC	130 dB	70 dB	70 dB
	DC	85 dB	85 dB	85 dB

Measurement Speeds

For the 3497A DVM and the relay multiplexer. Speeds are given for measurements on random channels (using software channel selection) and sequential channels (using external hardware increment). Speeds include I/O times to the indicated computers.

	Number of Digits Selected	Computer 85	9826*	1000L	1000E,F
Sequential Channels using external increment	5½ digits	39(33)**	39	39(25)	30(25)
	4½ digits	97(88)	103	108(79)	88(79)
	3½ digits	112(107)	123	127(99)	107(99)
Random Channels using software	5½ digits	13(15)	27	21(16)	22(16)
	4½ digits	14(21)	51	31(28)	35(30)
	3½ digits	14(23)	55	33(29)	35(32)

*9826 speeds for BASIC operating system
**50 Hz speeds in ( )

TIMER/REAL TIME CLOCK

Clock Format

Month:Day:Hours:Minutes:Seconds (Option 230)
Day:Month:Hours:Minutes:Seconds (Option 231)

	Maximum Time	Resolution	Accuracy	Output
Real Time Mode	1 year	1 second	±(.005% of time + .1s)	Display and HP-IB
Elapsed Time Mode	10^6 seconds	1 second	±(.005% of time + .1s)	Display and HP-IB
Time Alarm Mode	24 hours	1 second	±(.005% of time + .1s)	HP-IB SRQ
Time Interval Mode	24 hours	1 second	±(.005% of time + .1s)	50 μS TTL Pulse + HP-IB SRQ
Time Output Mode	1 second	100 μS	±(.02% of time)	16 μS TTL Pulse
Power Failure Protection: Battery back-up for >24 hours for time and elapsed time only				

3497A MAINFRAME AUXILIARY INPUTS/OUTPUTS

Ext Trig. Input: TTL Compatible
Minimum pulse width: 50 n seconds

Ext Incr. Input: TTL Compatible
Minimum pulse width: 50 μ seconds

BBM Sync: TTL Compatible
This terminal serves as a break before make synchronizing signal to the 3497A and other equipment. The terminal is both an-input and output with a low level indicating a channel is closed. The 3497A will not close any additional channels until the line is sensed high and the line will float high when all channels are open.

VM Complete Output: TTL Compatible
Pulse width = 500 n seconds

Channel Closed Output: TTL Compatible
Pulse width = 500 n seconds

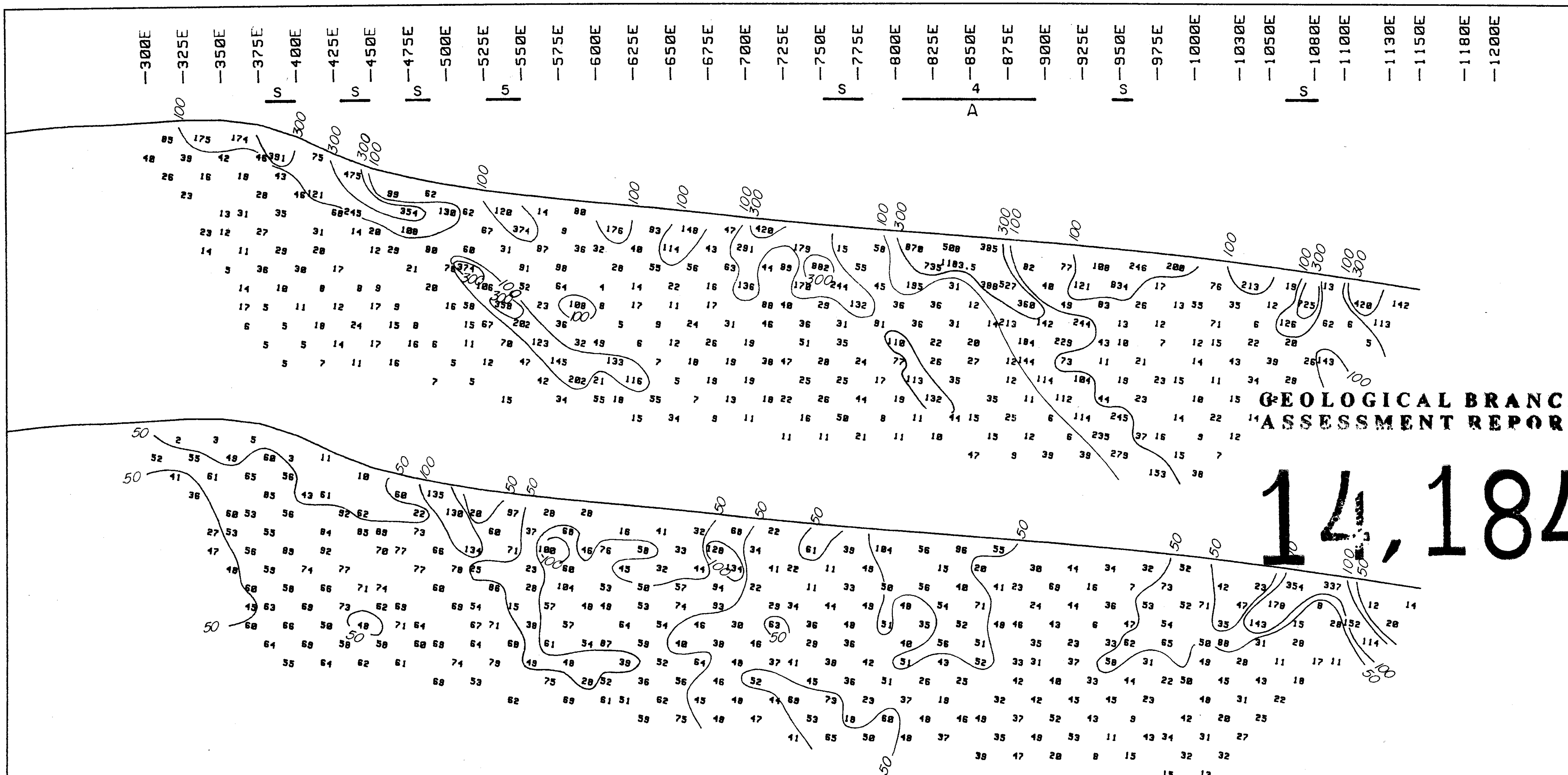
Timer Interval Output: TTL Compatible
Output port for the time interval and time output functions.

Physical Parameters

Size (3497A or 3498A): 190.5 mm (7½ in.) high
428.6 mm (16 7/8 in.) wide
520.7 mm (20½ in.) deep
An additional two inches in depth should be allowed for wiring.

Net Weight:

	3497A	3498A
Maximum (with assemblies in all slots)	20.4 kg (45 lbs.)	20.4 kg (45 lbs.)



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

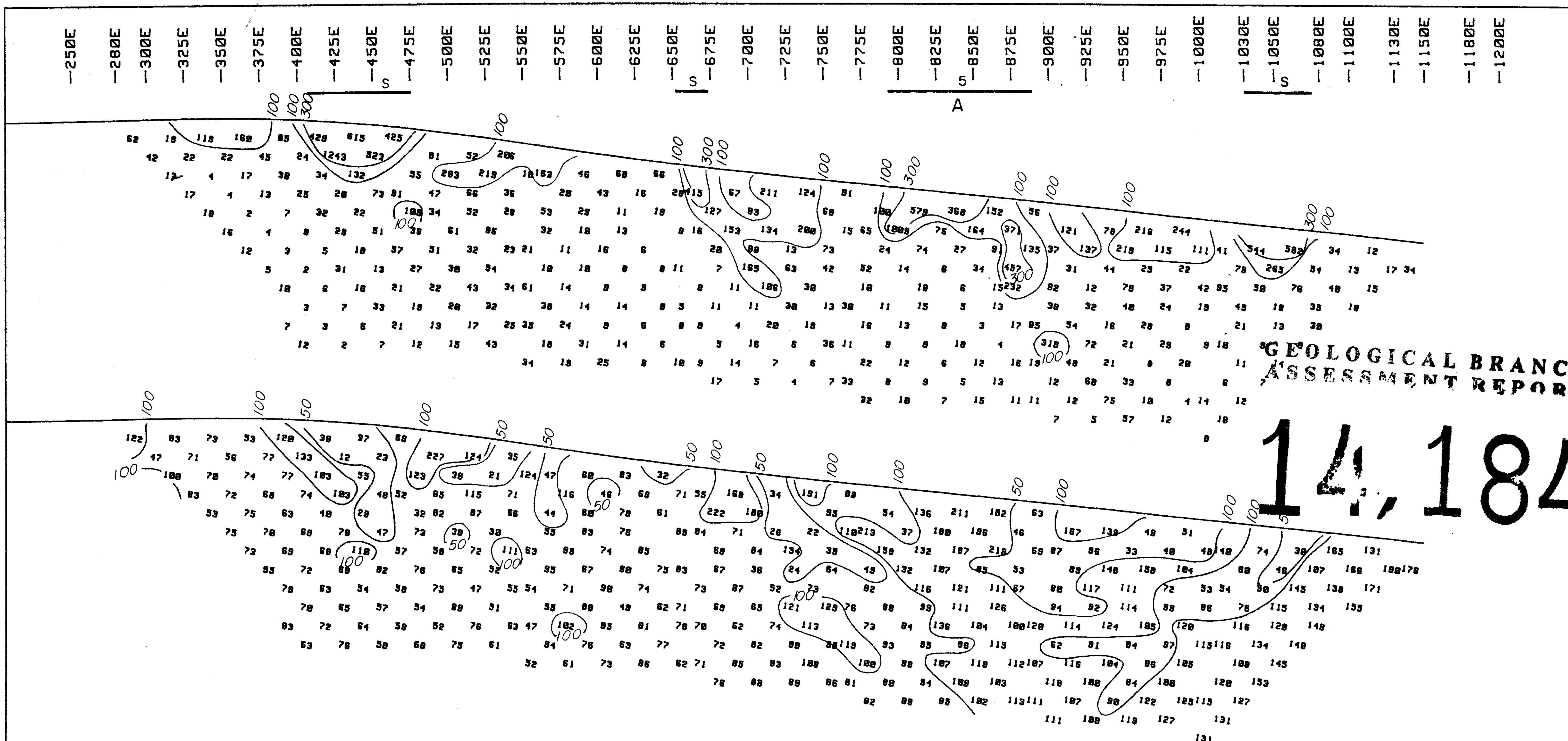
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1800N

DATE: SEPT/85

FIG.: 3·1·2



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

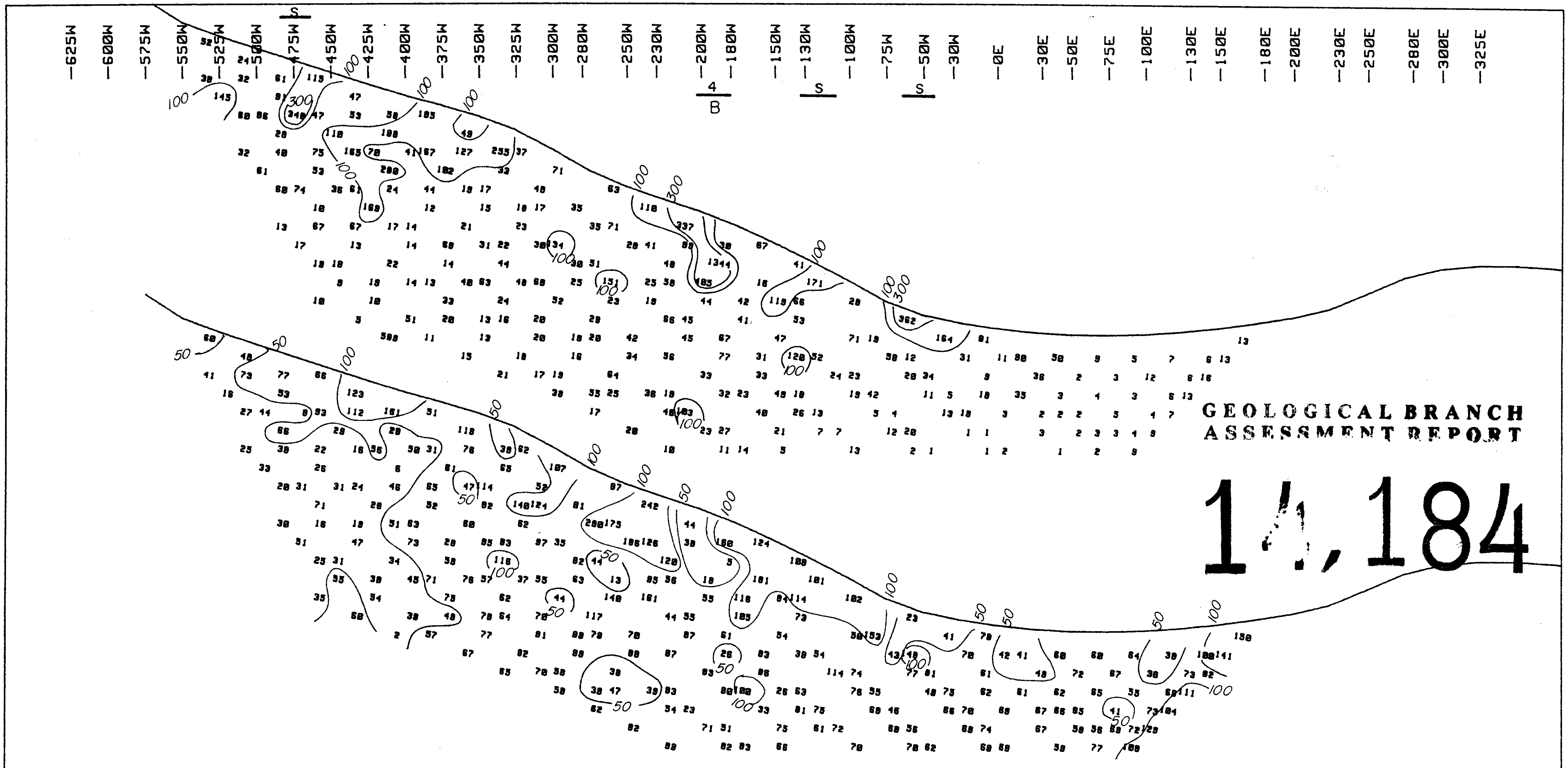
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1600N

DATE: SEPT/85

FIG.: 3·1·3



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

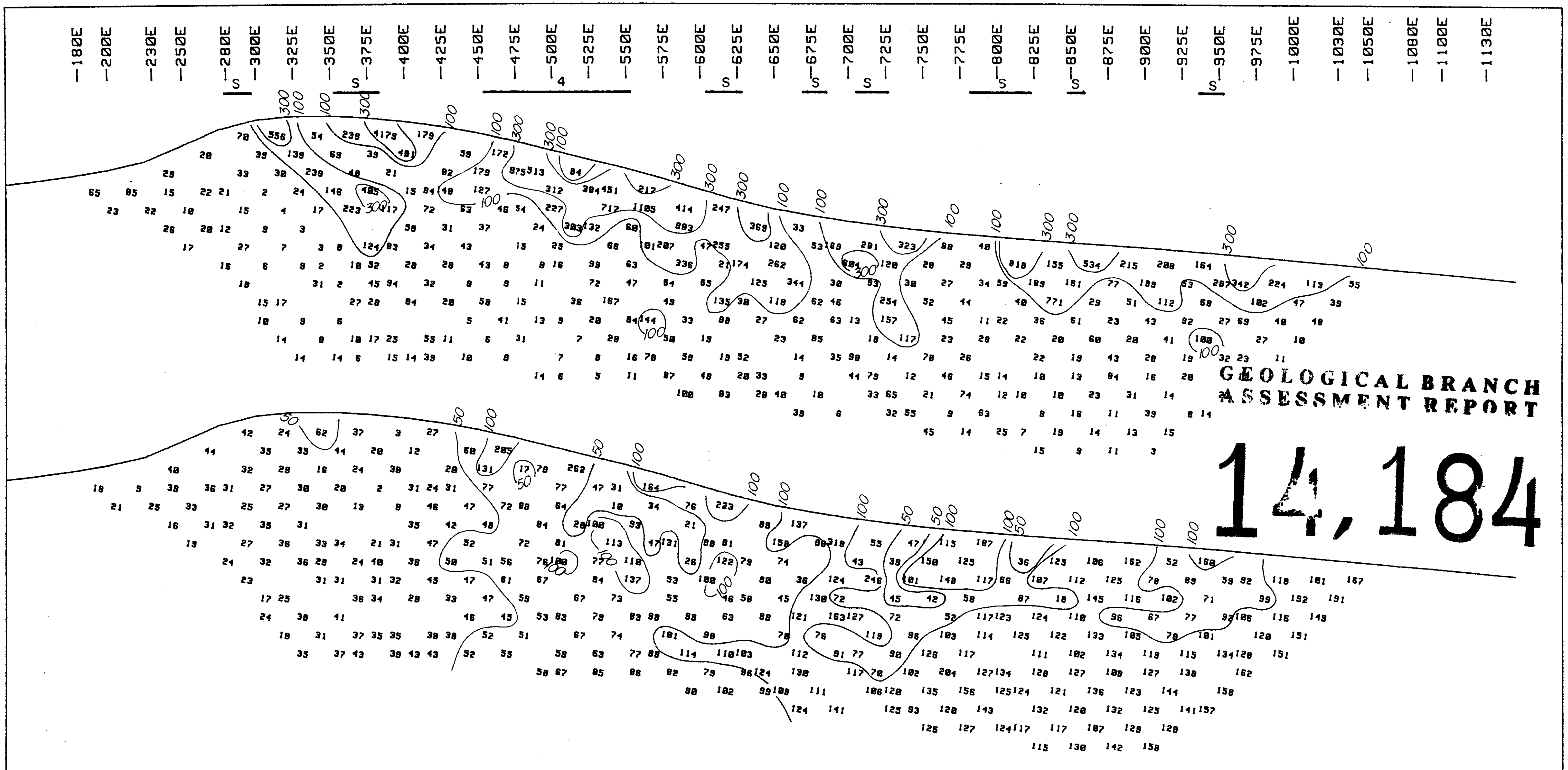
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1400N

DATE: SEPT/85

FIG.: 3·1·4



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

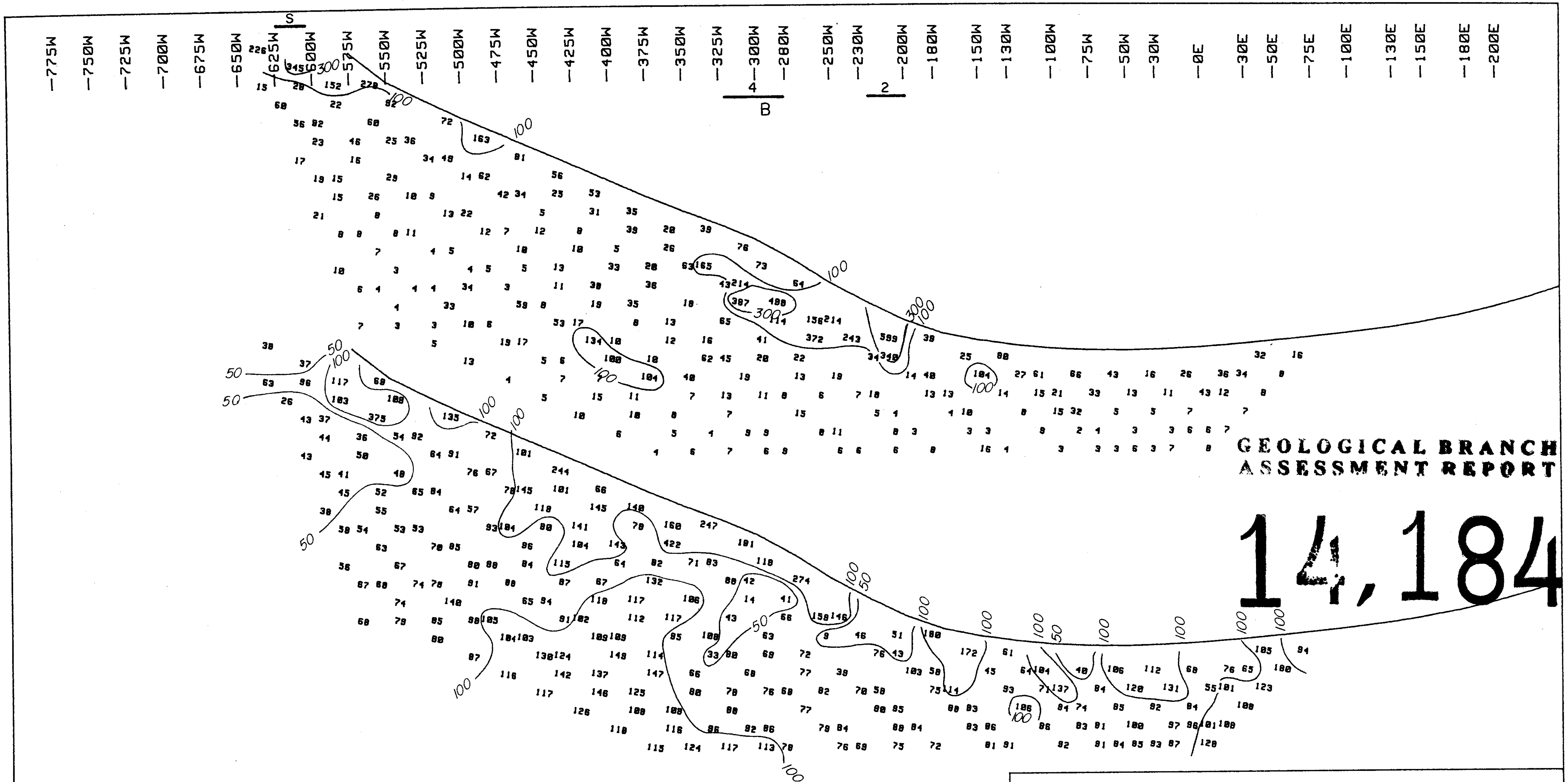
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1400N

DATE: SEPT/85

FIG.: 3·1·5



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

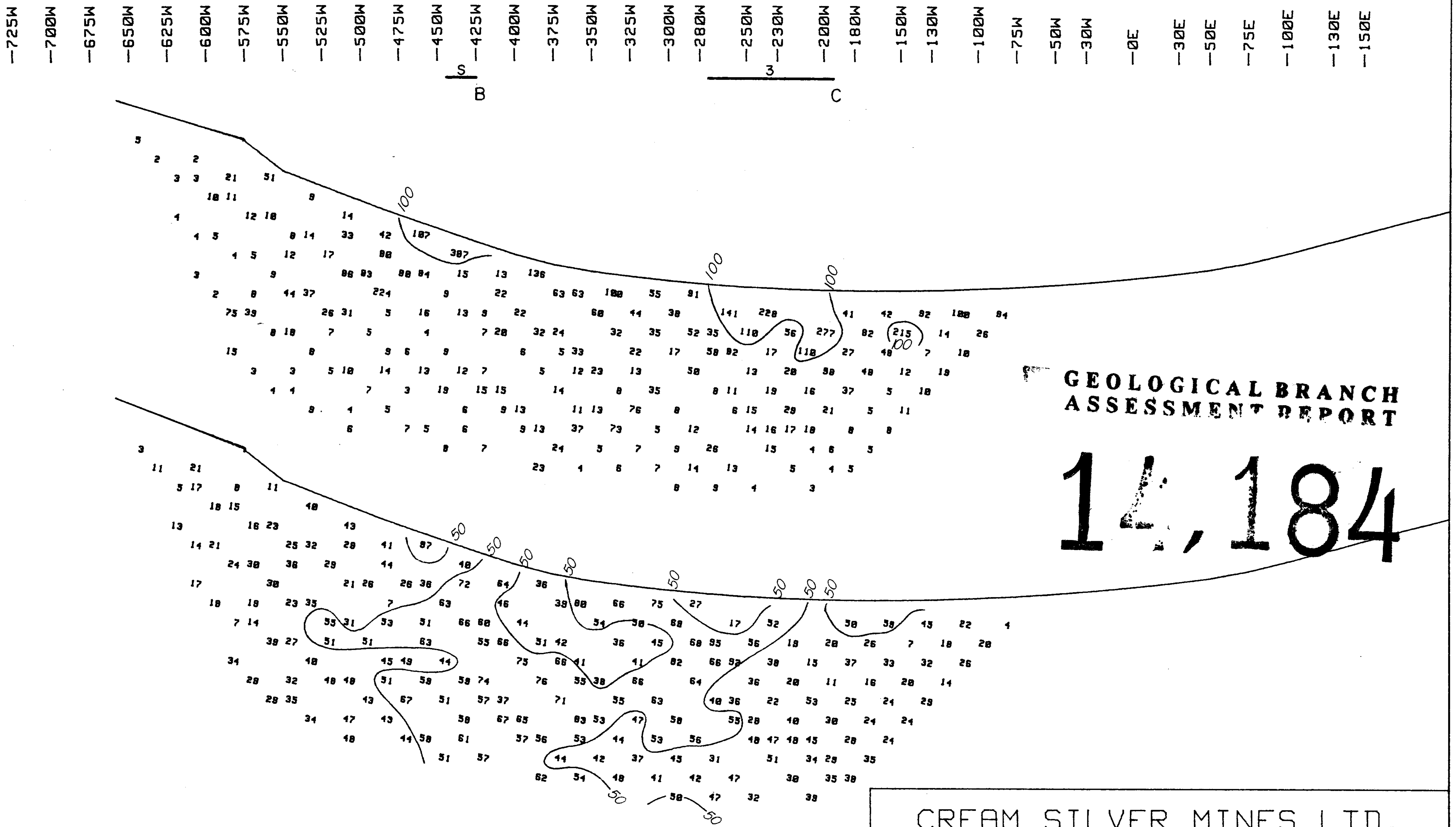
METRES
0 25 50 75 100

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1200N

DATE: SEPT/85

FIG.: 3·1·6

WHITE GEOPHYSICAL INC.



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

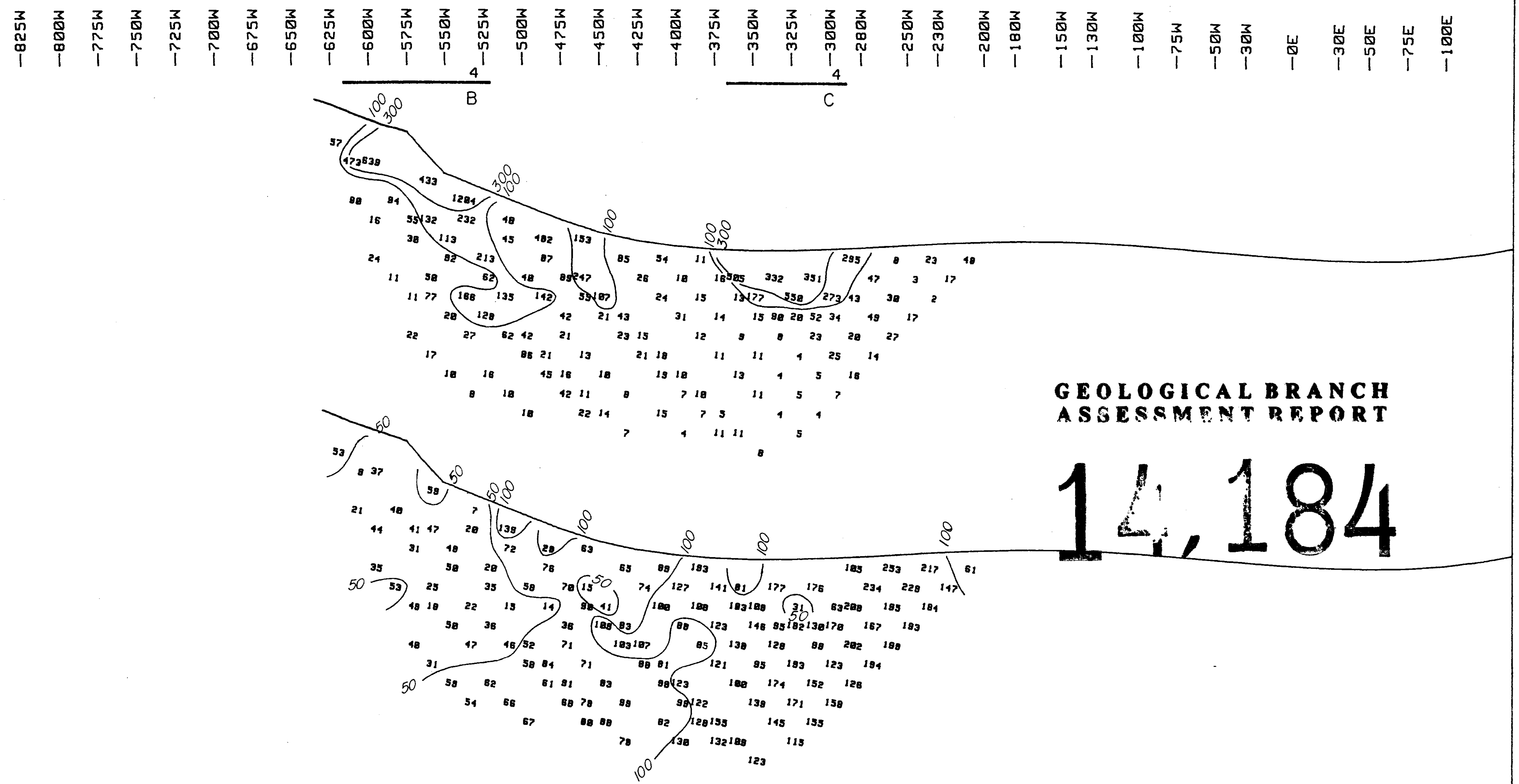
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 1000N

DATE: SEPT/85

FIG.: 3·1·7



GEOLOGICAL BRANCH ASSESSMENT REPORT

14,184

TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

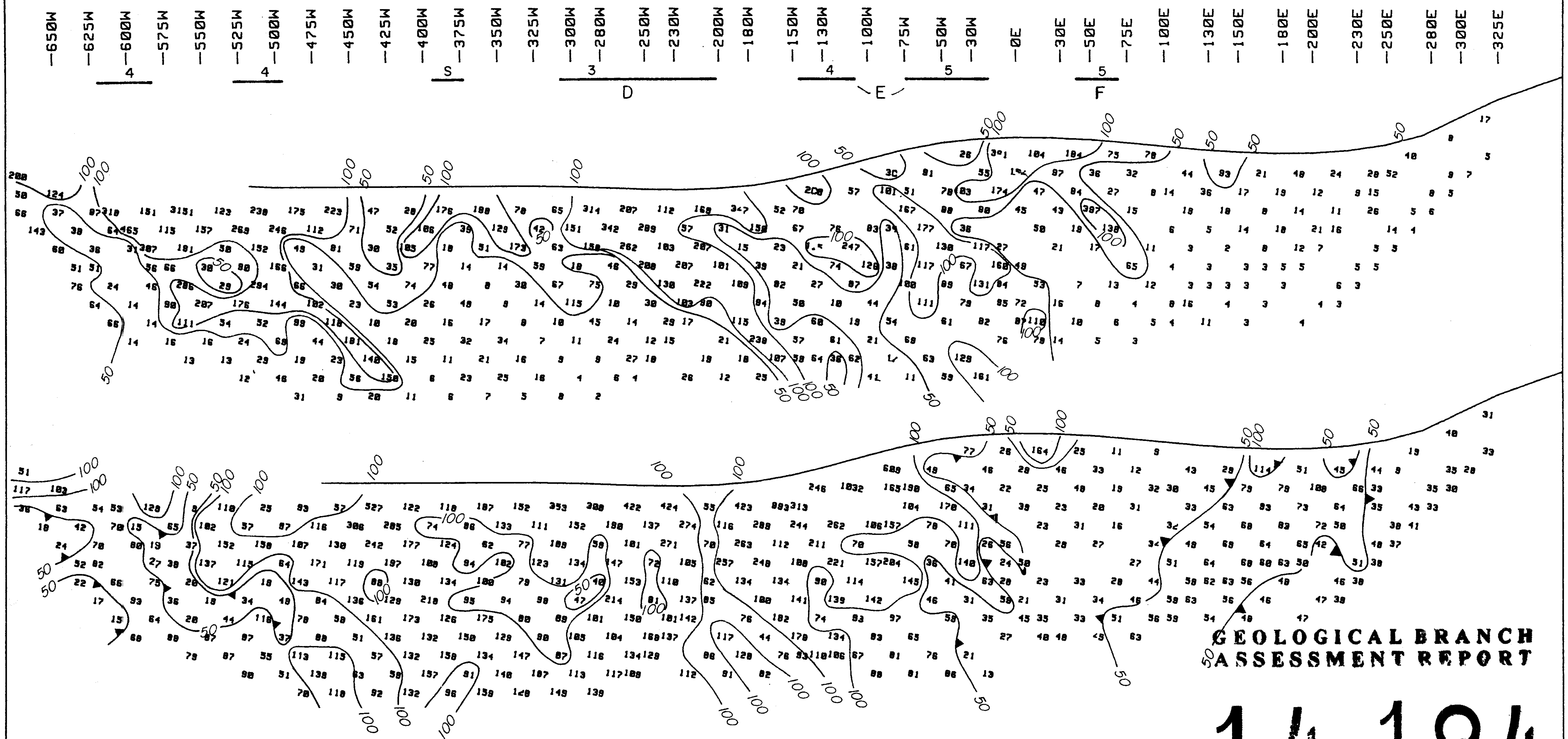
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 800N

DATE: SEPT/85

FIG.: 3·1·8



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

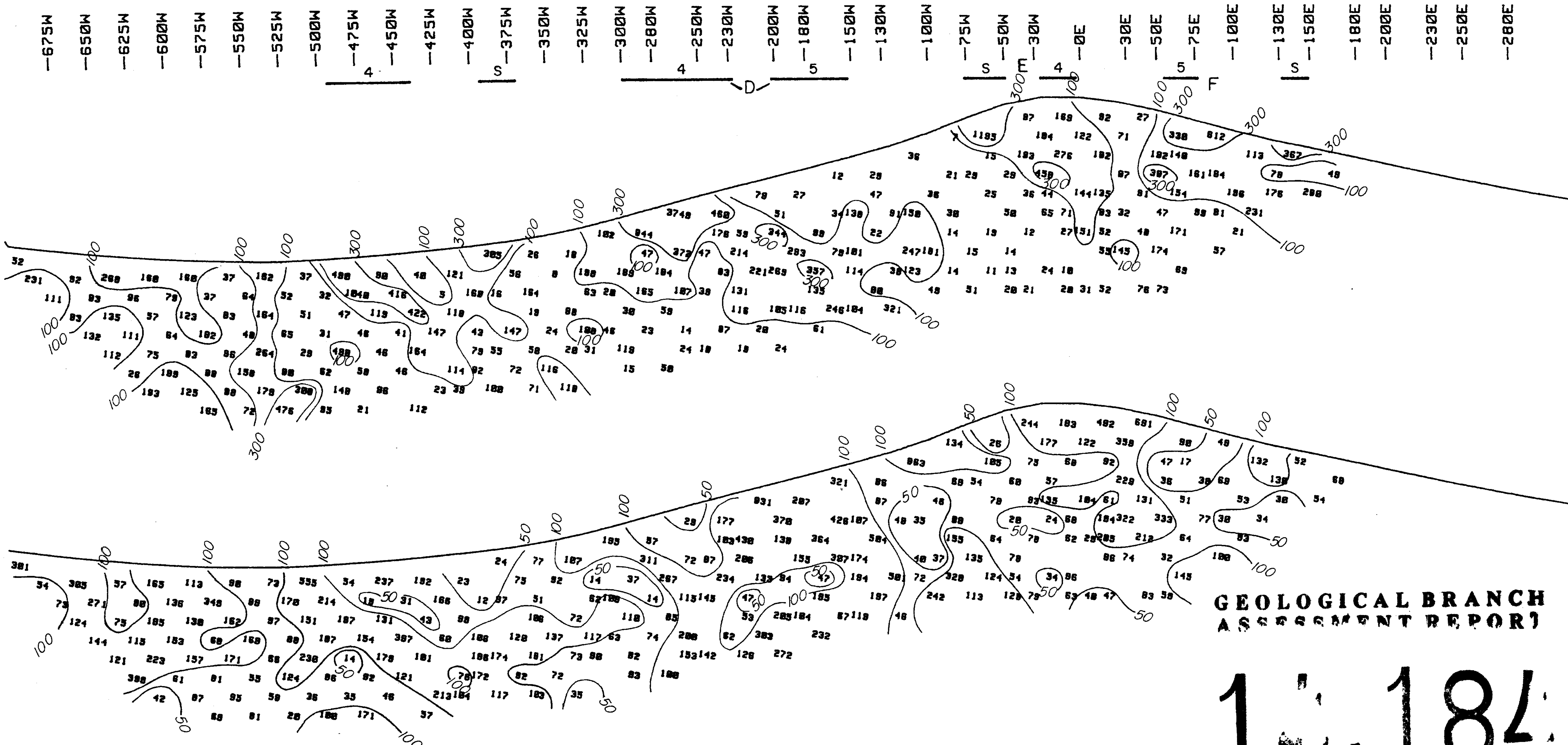
METRES
0 25 50 75 100

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 650N

WHITE GEOPHYSICAL INC.

DATE: SEPT/85

FIG.: 3·1·9



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

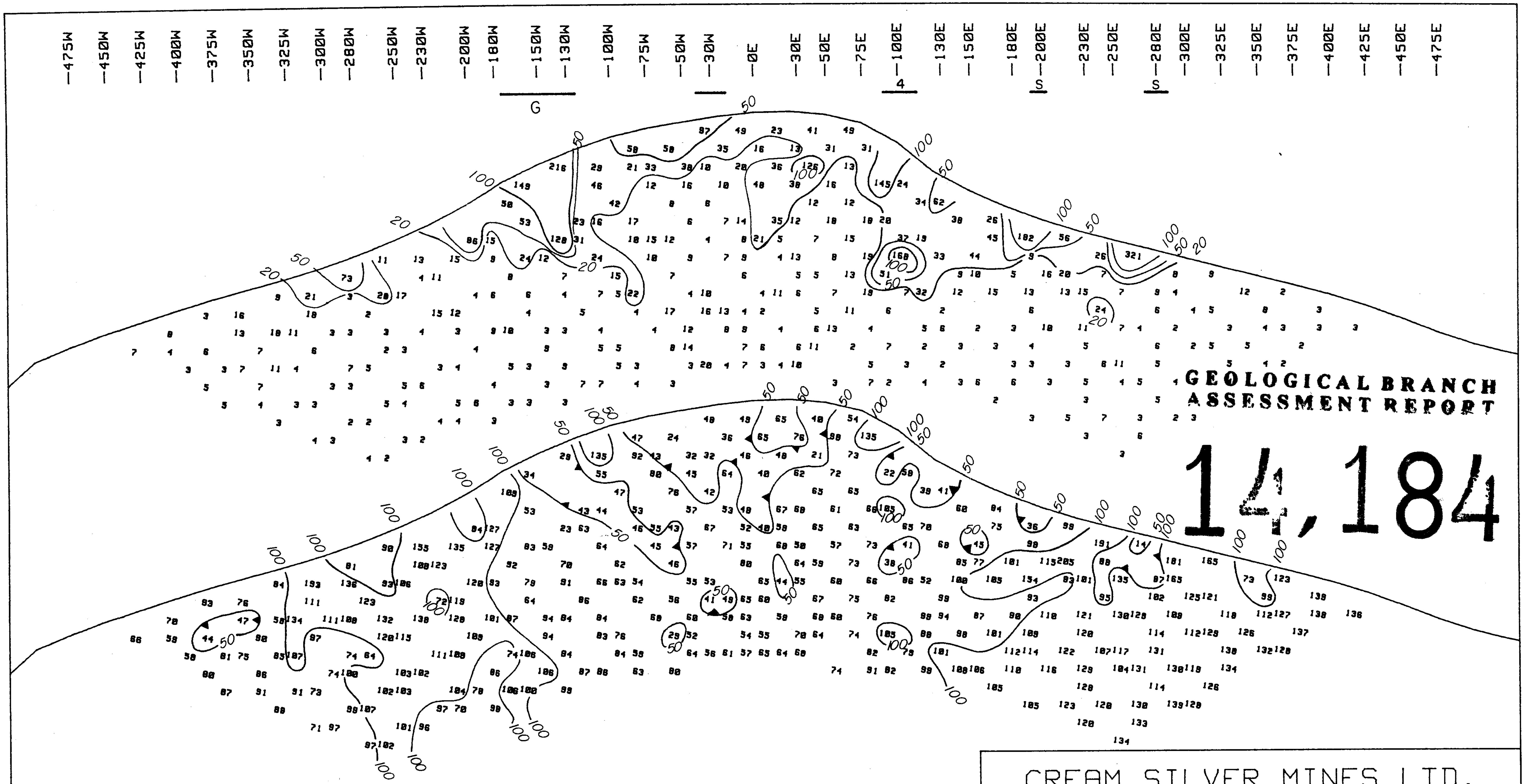
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 400N

DATE: SEPT/85

FIG.: 3·1·10



TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

METRES
0 25 50 75 100

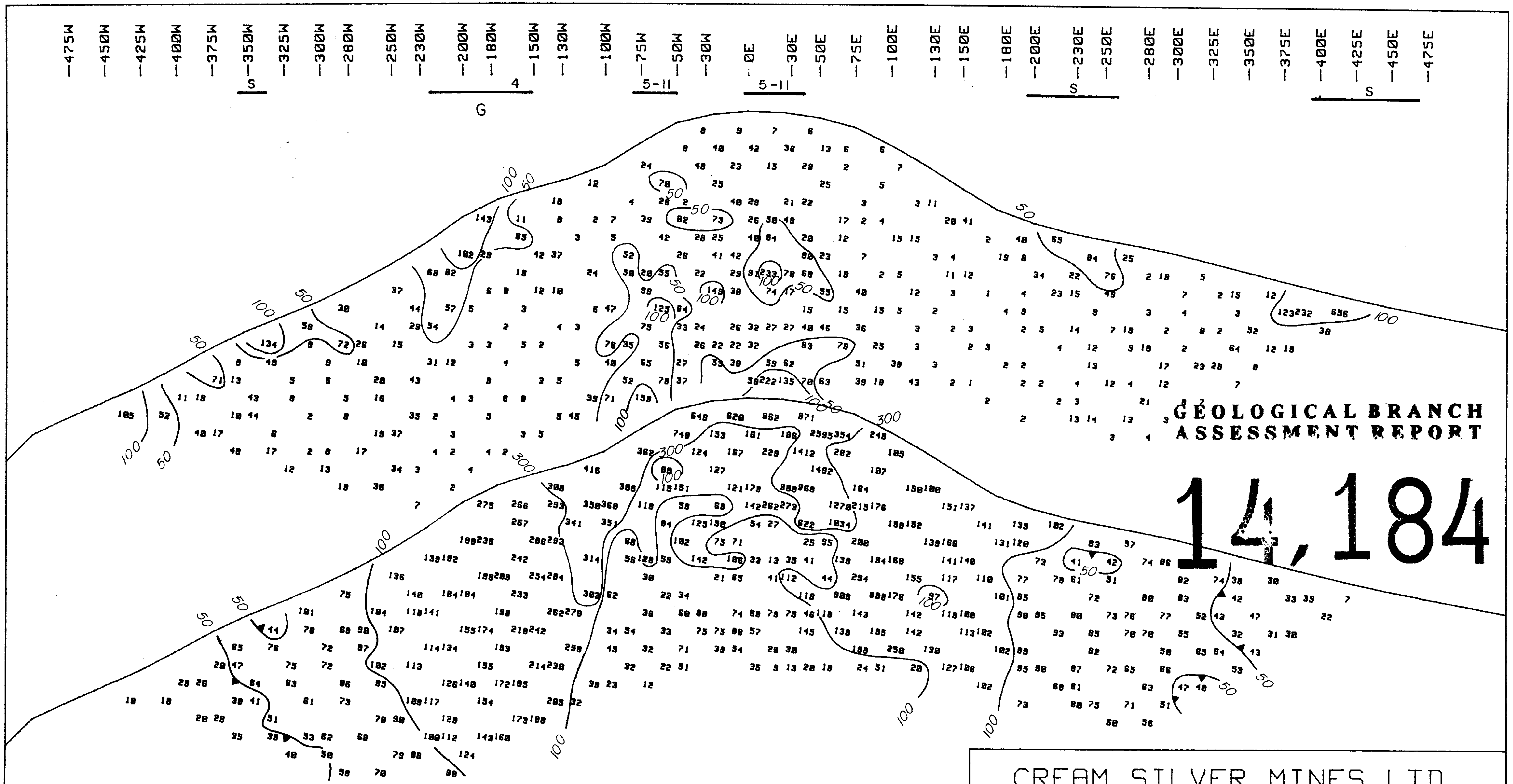
CREAM SILVER MINES LTD.

RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 00N

WHITE GEOPHYSICAL INC.

DATE: SEPT/85

FIG.: 3·1·11



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

TOP: CHARGEABILITY (MILLISECONDS)
BOTTOM: RESISTIVITY (OHM-METRES*10)
INSTRUMENT: 36 CHANNEL MULTIPOLE I.P.

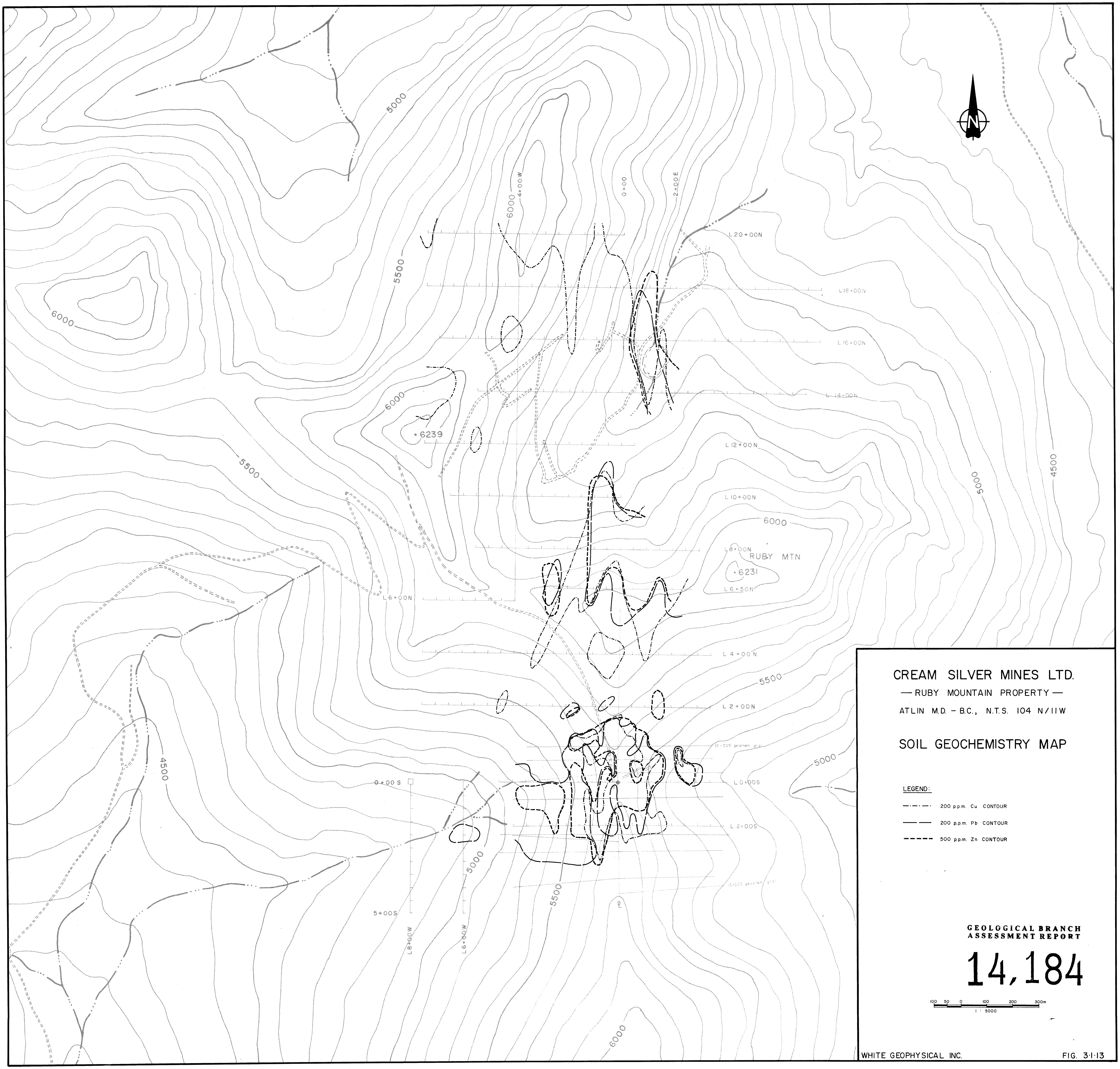
METRES
0 25 50 75 100

WHITE GEOPHYSICAL INC.

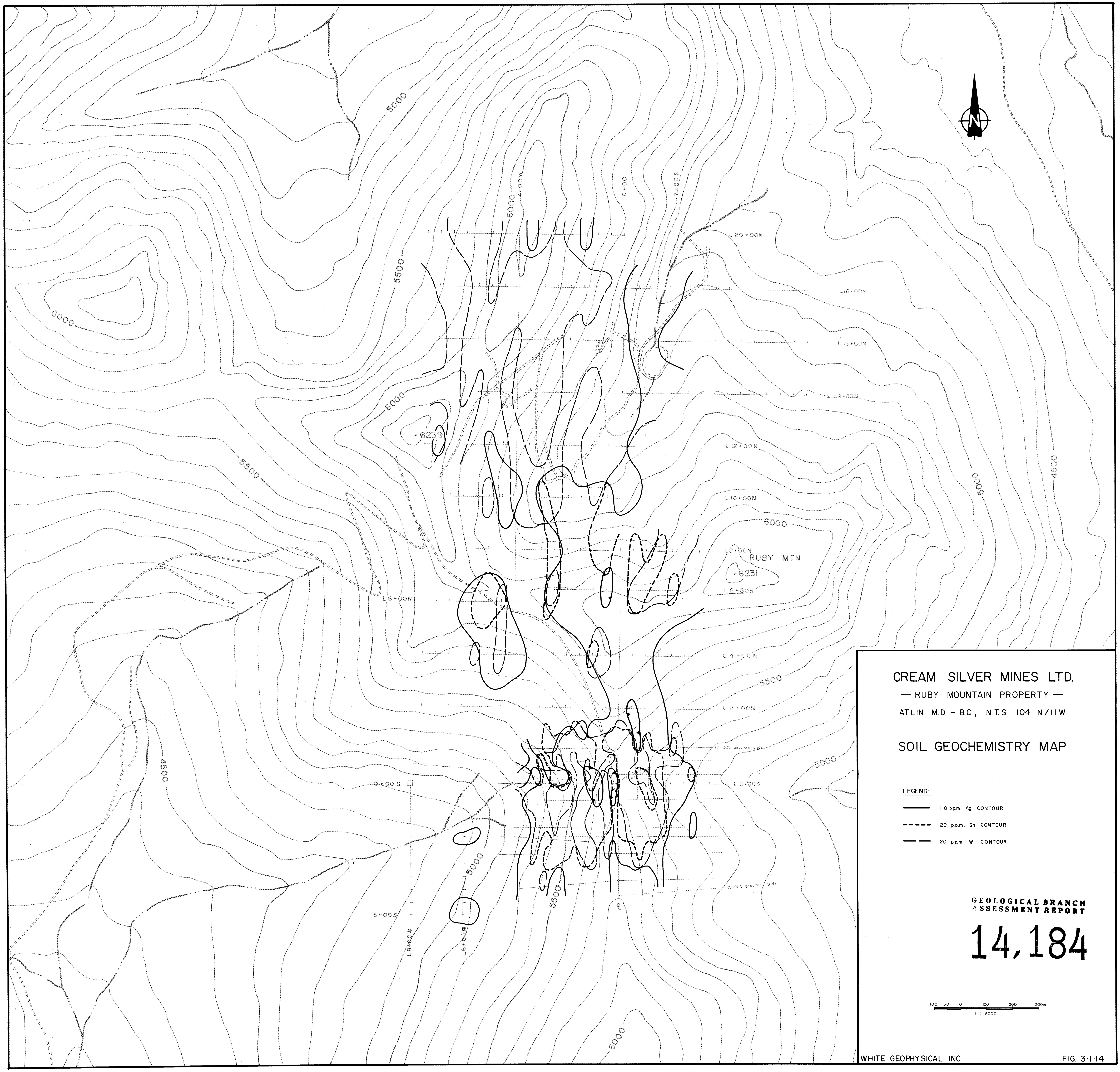
CREAM SILVER MINES LTD.
RUBY MTN. PROJECT
MULTIPOLE INDUCED POLARIZATION SURVEY
LINE 200S

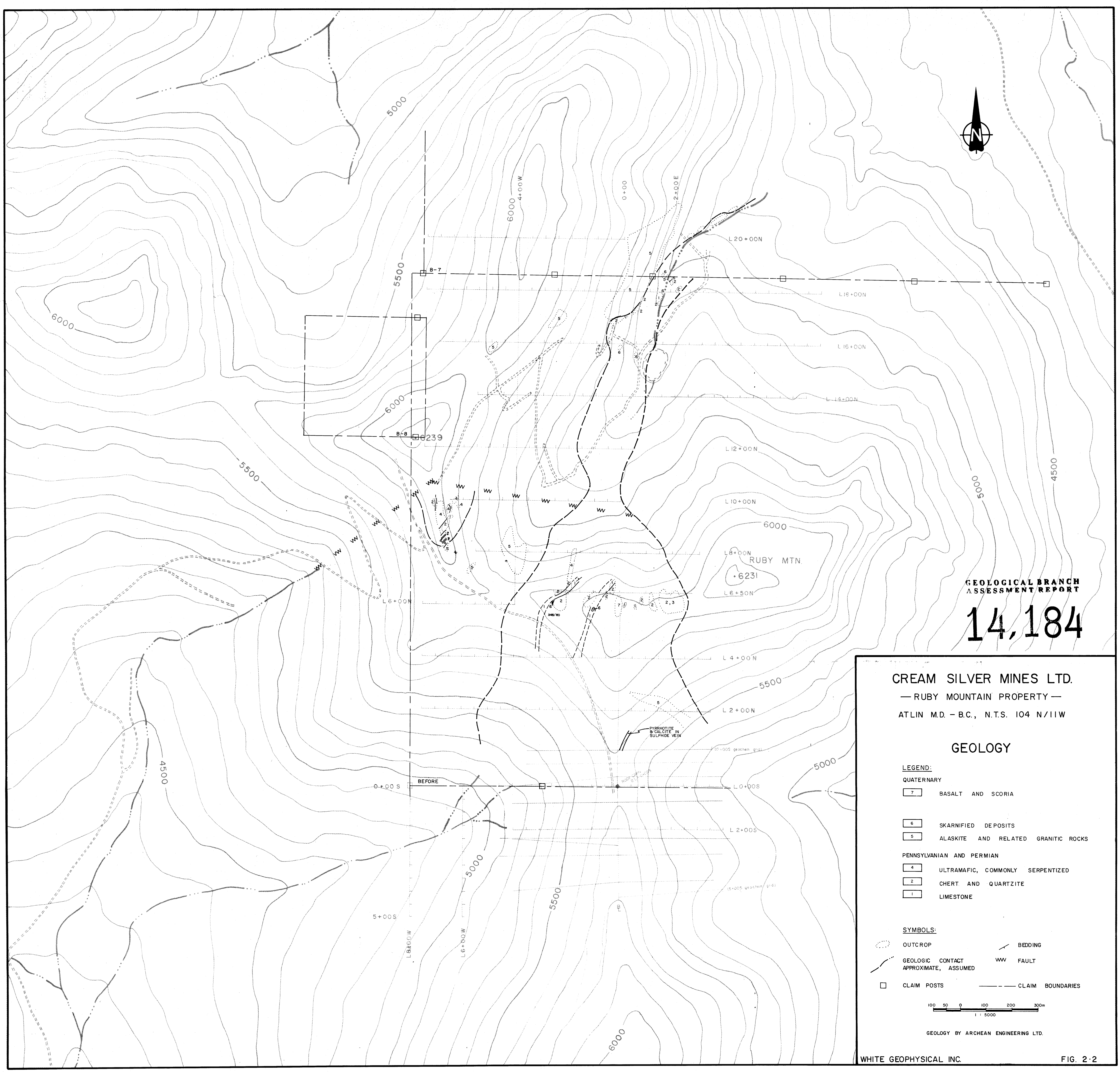
DATE: SEPT/85

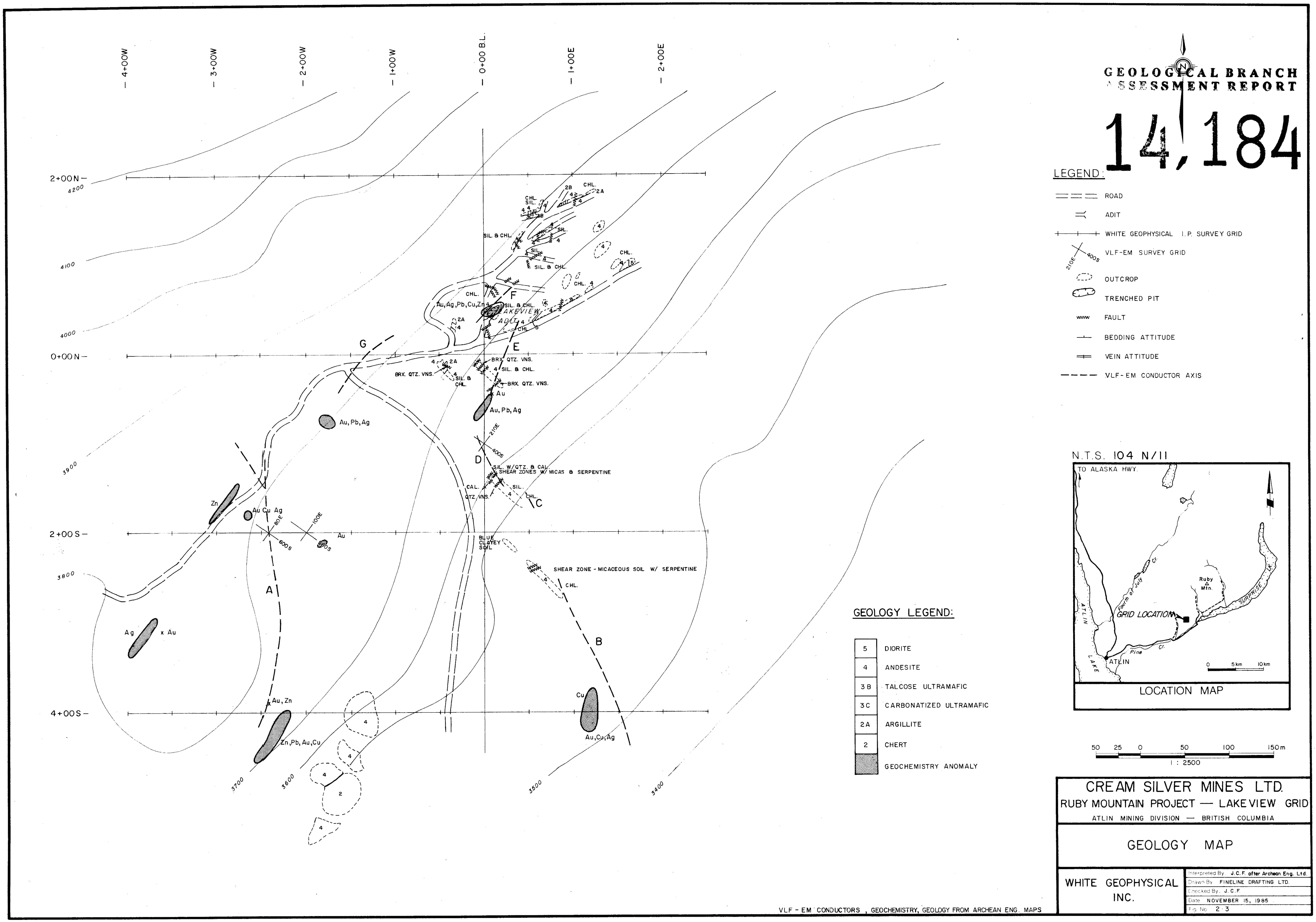
FIG.: 3·1·12

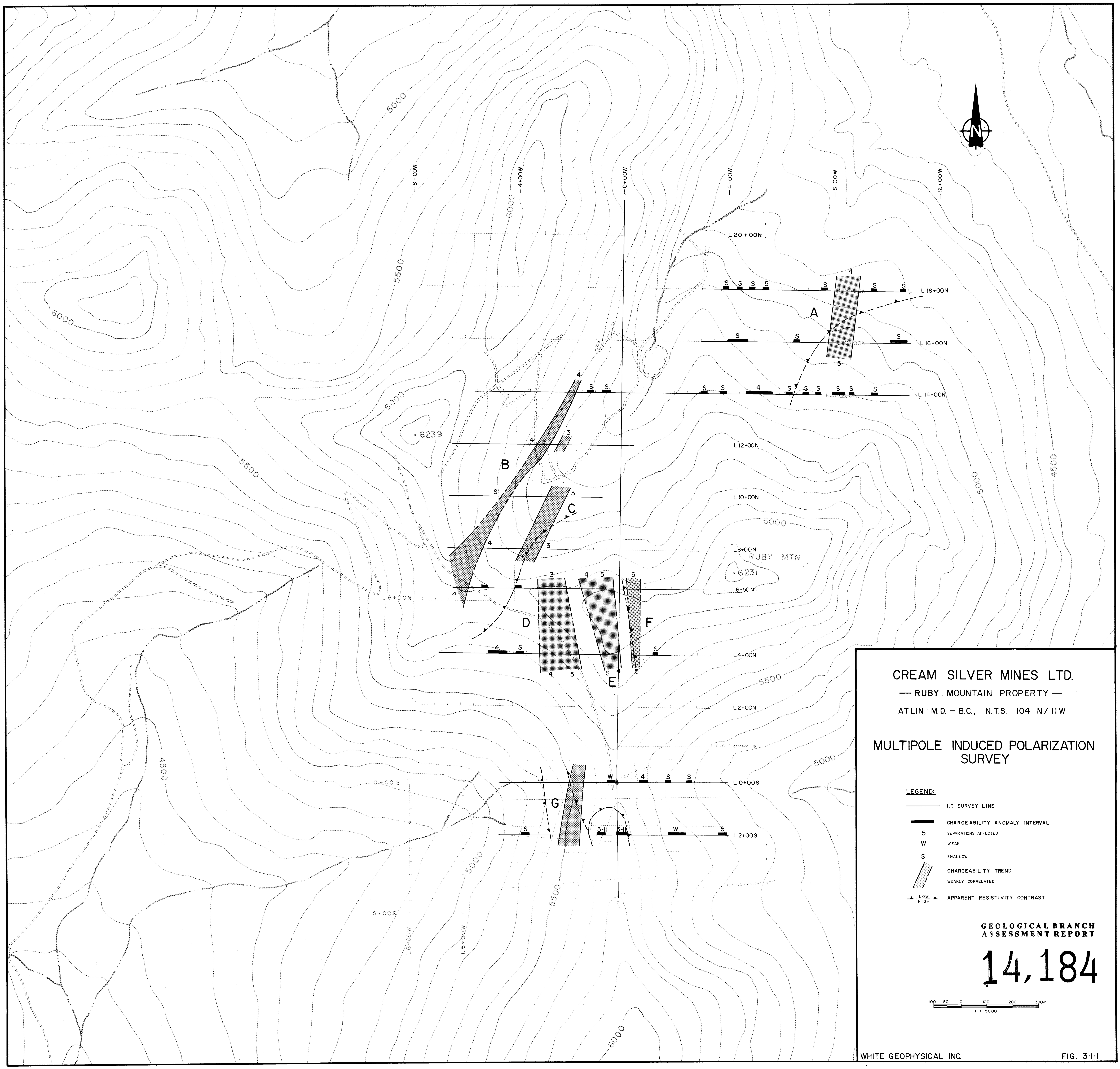


CREAM SILVER MINES LTD.
— RUBY MOUNTAIN PROPERTY —
ATLIN M.D. – B.C., N.T.S. 104 N/11W
SOIL GEOCHEMISTRY MAP
LEGEND:
200 p.p.m. Cu CONTOUR
200 p.p.m. Pb CONTOUR
500 p.p.m. Zn CONTOUR
GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,184
1 : 5000
WHITE GEOPHYSICAL INC.
FIG. 3·1·13
RUBY MTN
6231
6239
L20+00N
L18+00N
L16+00N
L14+00N
L12+00N
L10+00N
L8+00N
L6+50N
L6+00N
L4+00N
L2+00N
L0+00S
L2+00S
0+00S
5+00S
L8+00W
L6+00W
4+00W
0+00
2+00E
5000
5500
6000
4500


N
5000
5500
6000
6000
4+00W
0+00
2+00E
L20+00N
L18+00N
L16+00N
L14+00N
L12+00N
L10+00N
6239
5500
6000
RUBY MTN.
L8+00N
6231
L6+50N
L6+00N
L4+00N
L2+00N
5500
L0+00S
5000
4500
5000
4500
0+00S
5+00S
L8+00W
L6+00W
5000
5500
6000
CREAM SILVER MINES LTD.
— RUBY MOUNTAIN PROPERTY —
ATLIN M.D. – B.C., N.T.S. 104 N/11W
SOIL GEOCHEMISTRY MAP
LEGEND:
1.0 p.p.m. Ag CONTOUR
20 p.p.m. Sn CONTOUR
20 p.p.m. W CONTOUR
GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,184
100 50 0 100 200 300m
1 : 5000
WHITE GEOPHYSICAL INC.
FIG. 3·1·14

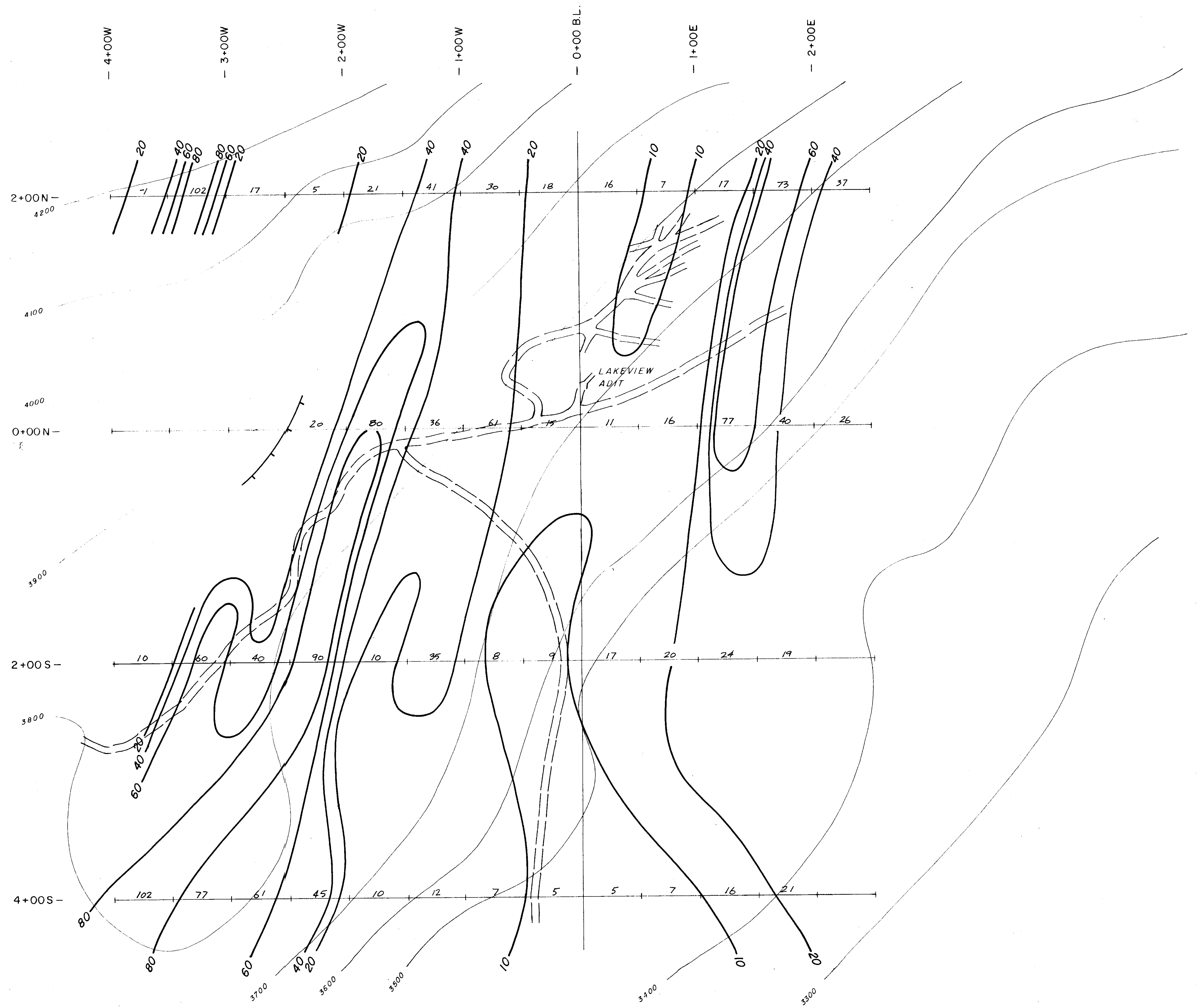

GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,184
N
L20+00N
L18+00N
L16+00N
L14+00N
L12+00N
L10+00N
L8+00N
L6+50N
L6+00N
L4+00N
L2+00N
L0+00S
L2+00S
0+00S
5+00S
L8+00W
L6+00W
4+00W
0+00
2+00E
B-7
B-8
6239
RUBY MTN.
6231
BEFORE
PYRRHOTITE & CALCITE IN SULPHIDE VEIN
4500
5000
5500
6000
CREAM SILVER MINES LTD.
— RUBY MOUNTAIN PROPERTY —
ATLIN M.D. - B.C., N.T.S. 104 N/11W
GEOLOGY
LEGEND:
QUATERNARY
7 BASALT AND SCORIA
6 SKARNIFIED DEPOSITS
5 ALASKITE AND RELATED GRANITIC ROCKS
PENNSYLVANIAN AND PERMIAN
4 ULTRAMAFIC, COMMONLY SERPENTIZED
2 CHERT AND QUARTZITE
1 LIMESTONE
SYMBOLS:
OUTCROP
BEDDING
GEOLOGIC CONTACT APPROXIMATE, ASSUMED
FAULT
CLAIM POSTS
CLAIM BOUNDARIES
100 50 0 100 200 300m
1 : 5000
GEOLOGY BY ARCHEAN ENGINEERING LTD.
WHITE GEOPHYSICAL INC.
FIG. 2·2


GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,184
LEGEND:
ROAD
ADIT
WHITE GEOPHYSICAL I.P. SURVEY GRID
VLF-EM SURVEY GRID
OUTCROP
TRENCHED PIT
FAULT
BEDDING ATTITUDE
VEIN ATTITUDE
VLF-EM CONDUCTOR AXIS
GEOLOGY LEGEND:
5 DIORITE
4 ANDESITE
3B TALCOSE ULTRAMAFIC
3C CARBONATIZED ULTRAMAFIC
2A ARGILLITE
2 CHERT
GEOCHEMISTRY ANOMALY
N.T.S. 104 N/11
TO ALASKA HWY.
Fourth of July Cr.
Ruby Mtn.
SURPRISE LK.
GRID LOCATION
Pine Cr.
ATLIN
ATLIN LAKE
0 5km 10km
LOCATION MAP
50 25 0 50 100 150m
1 : 2500
CREAM SILVER MINES LTD.
RUBY MOUNTAIN PROJECT — LAKEVIEW GRID
ATLIN MINING DIVISION — BRITISH COLUMBIA
GEOLOGY MAP
WHITE GEOPHYSICAL INC.
Interpreted By J.C.F. after Archean Eng. Ltd.
Drawn By FINELINE DRAFTING LTD.
Checked By J.C.F.
Date NOVEMBER 15, 1985
Fig. No. 2.3
VLF-EM CONDUCTORS, GEOCHEMISTRY, GEOLOGY FROM ARCHEAN ENG. MAPS
4+00W
3+00W
2+00W
1+00W
0+00 BL.
1+00E
2+00E
2+00N
0+00N
2+00S
4+00S
4200
4100
4000
3900
3800
3700
3600
3500
3400
LAKEVIEW ADIT
Au, Ag, Pb, Cu, Zn
Au, Pb, Ag
Au
Zn
Au Cu Ag
Ag
x Au
Au, Zn
Zn, Pb, Au, Cu
Cu
Au, Cu, Ag
SIL. & CHL.
CHL.
BRX. QTZ. VNS.
SIL. W/QTZ. & CAL. SHEAR ZONES W/ MICAS & SERPENTINE
CAL.
QTZ. VNS.
BLUE CLAYEY SOIL
SHEAR ZONE - MICACEOUS SOIL W/ SERPENTINE
A
B
C
D
E
F
G


CREAM SILVER MINES LTD.
— RUBY MOUNTAIN PROPERTY —
ATLIN M.D. – B.C., N.T.S. 104 N/11W
MULTIPOLE INDUCED POLARIZATION SURVEY
LEGEND:
I.P. SURVEY LINE
CHARGEABILITY ANOMALY INTERVAL
5 SEPARATIONS AFFECTED
W WEAK
S SHALLOW
CHARGEABILITY TREND
WEAKLY CORRELATED
APPARENT RESISTIVITY CONTRAST
LOW
HIGH
GEOLOGICAL BRANCH
ASSESSMENT REPORT
14,184
100 50 0 100 200 300m
1 : 5000
WHITE GEOPHYSICAL INC.
FIG. 3·1·1
N
L 20+00N
L 18+00N
L 16+00N
L 14+00N
L 12+00N
L 10+00N
L 8+00N
L 6+50N
L 6+00N
L 4+00N
L 2+00N
L 0+00S
L 2+00S
0+00S
5+00S
8+00W
4+00W
0+00W
12+00W
L 8+00W
L 6+00W
RUBY MTN
6231
6239
A
B
C
D
E
F
G
6000
5500
5000
4500

GEOLOGICAL BRANCH ASSESSMENT REPORT

14,184



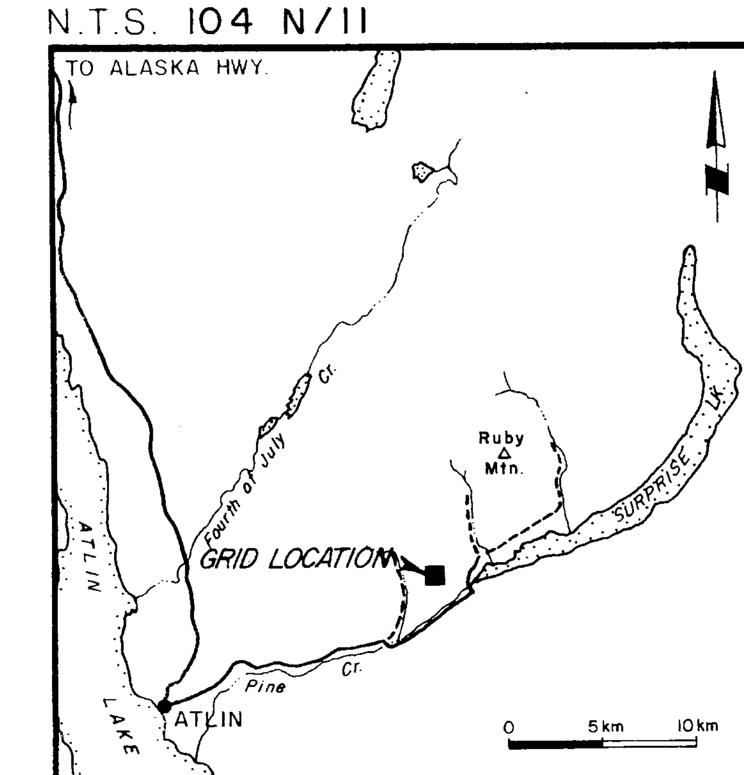
LEGEND:

═══	ROAD
⥼	ADIT
─┼─┼─	WHITE GEOPHYSICAL I.P. SURVEY GRID

80
60
40
20
10

MILLISECONDS

N.T.S. 104 N/11



LOCATION MAP

50 25 0 50 100 150m

1 : 2500

CREAM SILVER MINES LTD.

RUBY MOUNTAIN PROJECT — LAKEVIEW GRID

ATLIN MINING DIVISION — BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

CHARGEABILITY, n = 1

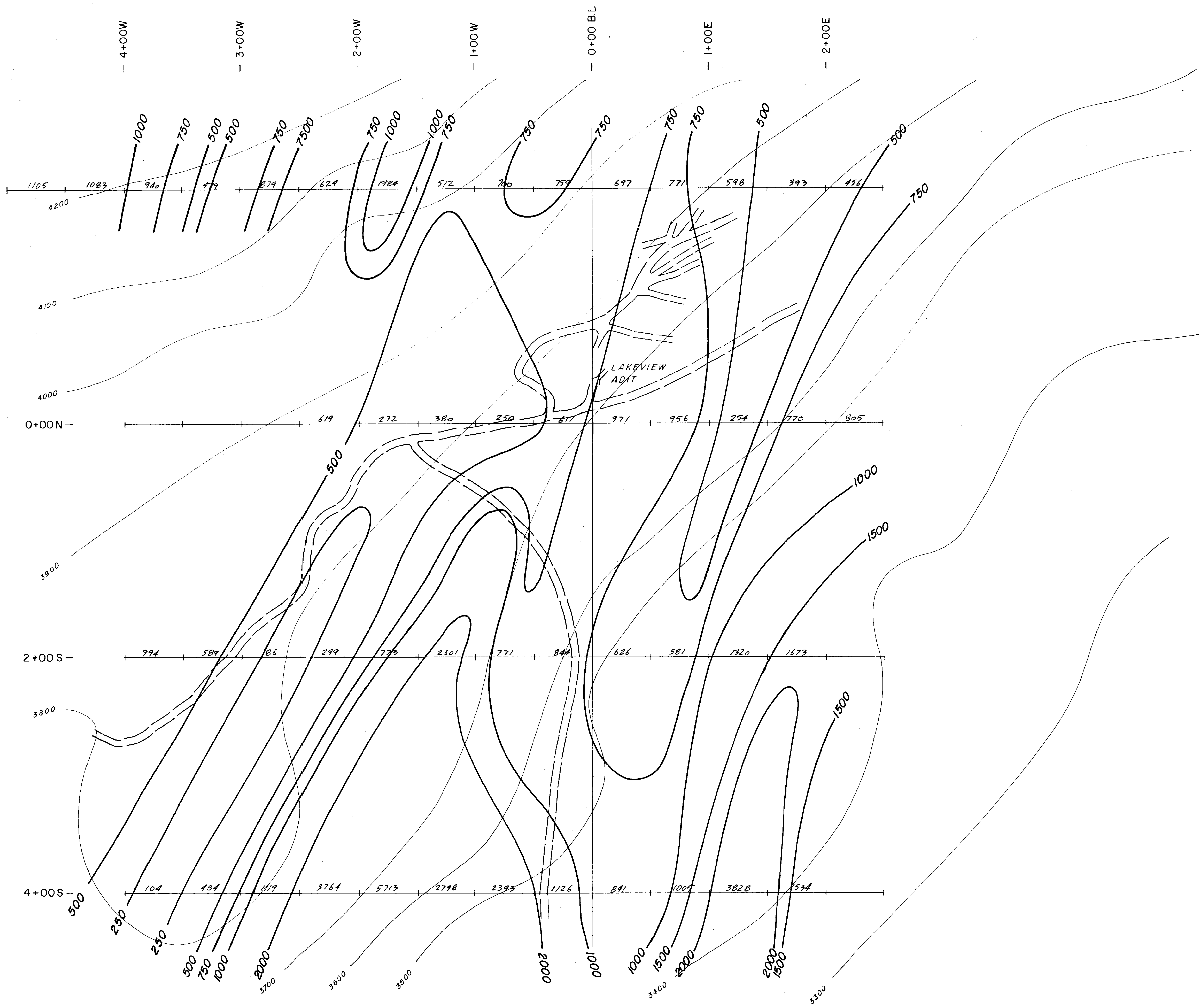
WHITE GEOPHYSICAL INC.

Interpreted By C.C.
Drawn By FINELINE DRAFTING LTD.
Checked By C.C.
Date NOVEMBER 15, 1985
Fig. No. 3-2-1

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

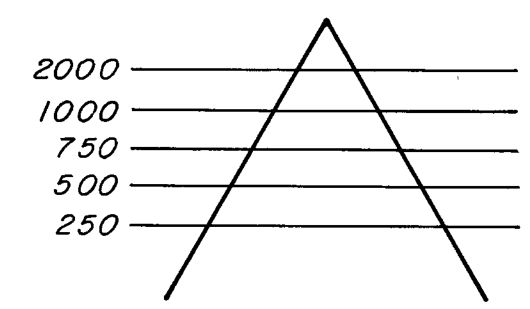


LEGEND:

ROAD

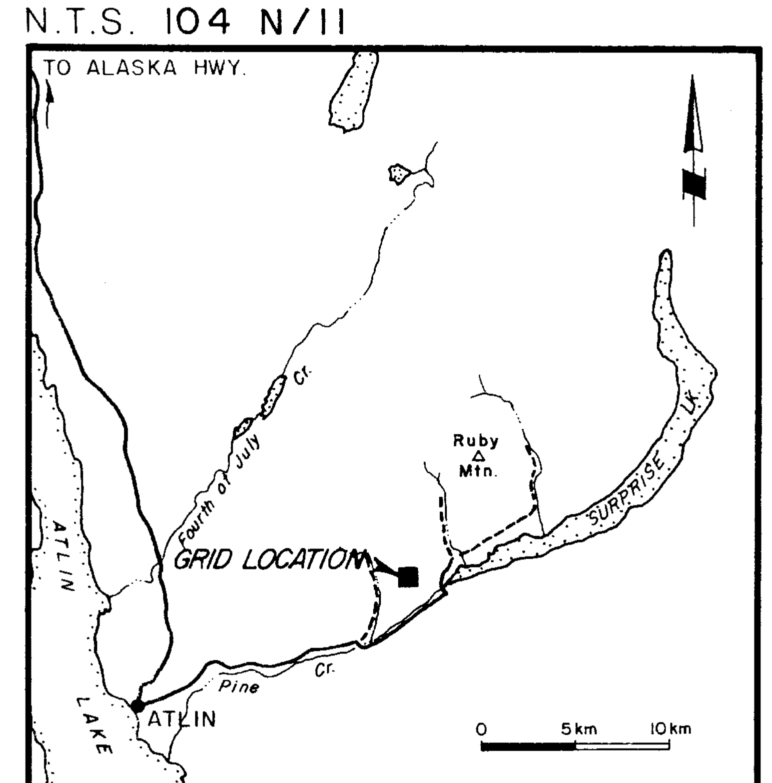
ADIT

WHITE GEOPHYSICAL I.P. SURVEY GRID



OHM-METRES

N.T.S. 104 N/11



LOCATION MAP

50 25 0 50 100 150m

1 : 2500

CREAM SILVER MINES LTD.

RUBY MOUNTAIN PROJECT — LAKEVIEW GRID

ATLIN MINING DIVISION — BRITISH COLUMBIA

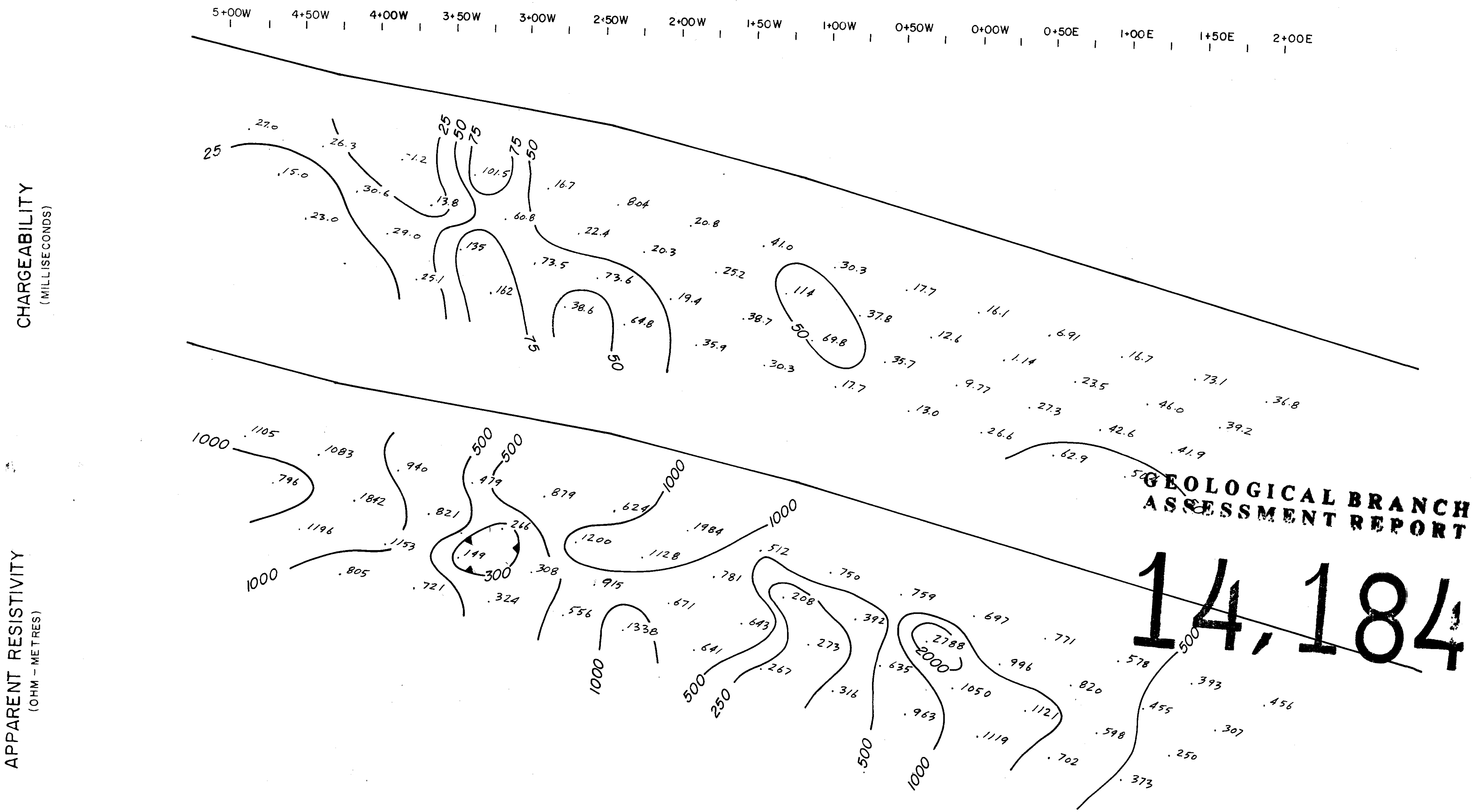
INDUCED POLARIZATION SURVEY

APPARENT RESISTIVITY, n = 1

WHITE GEOPHYSICAL INC.

Interpreted By C.C.
Drawn By FINELINE DRAFTING LTD.
Checked By C.C.
Date NOVEMBER 15, 1985
Fig. No. 3·2·2

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,184

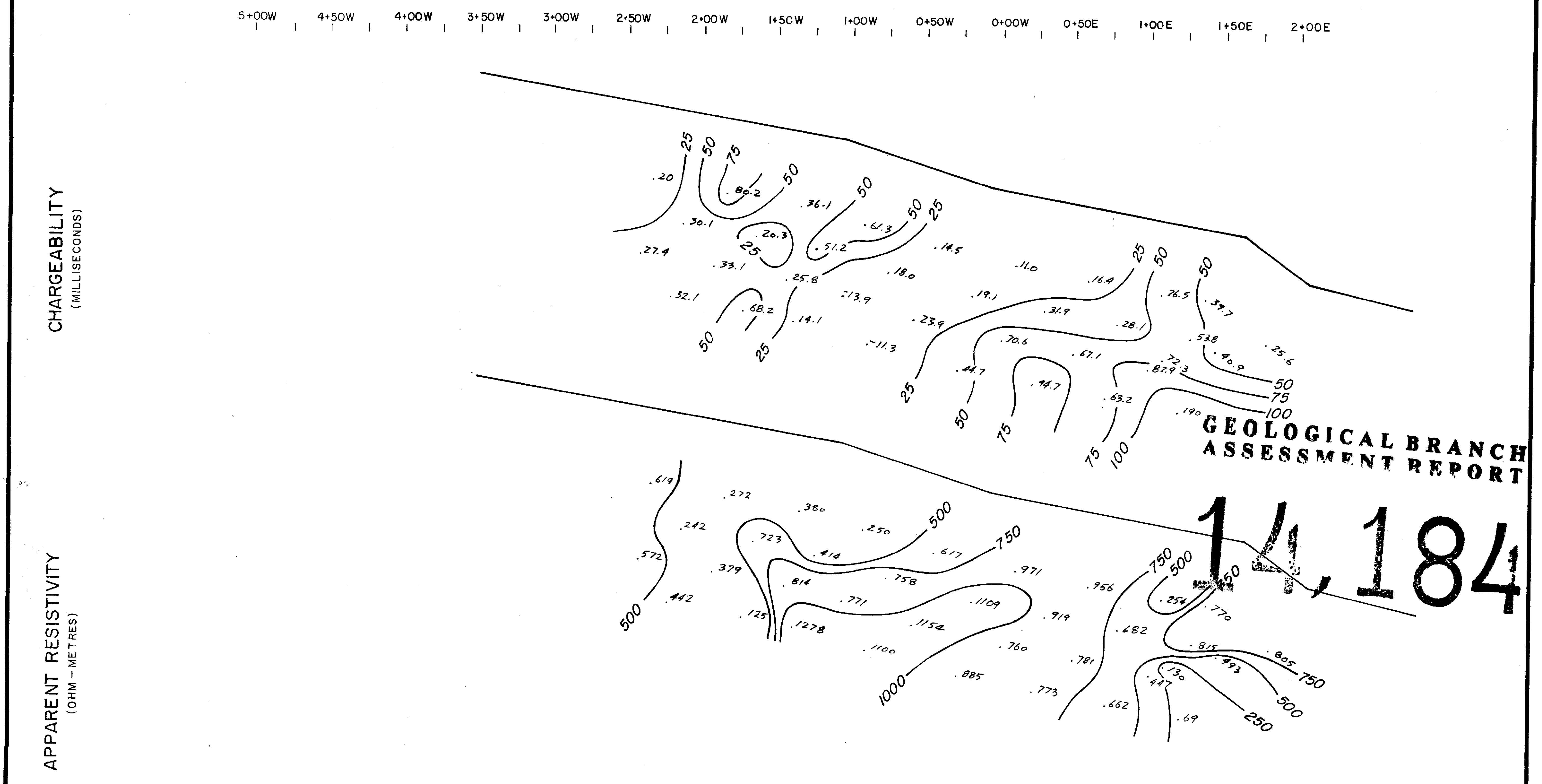
0 25 50 75 100 125
1 : 2500

CREAM SILVER MINES LTD.
— LAKEVIEW GRID —
INDUCED POLARIZATION PROFILE
LINE 2+00N

WHITE GEOPHYSICAL INC.

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION, n = 1 - 4

FIGURE 3.2.3

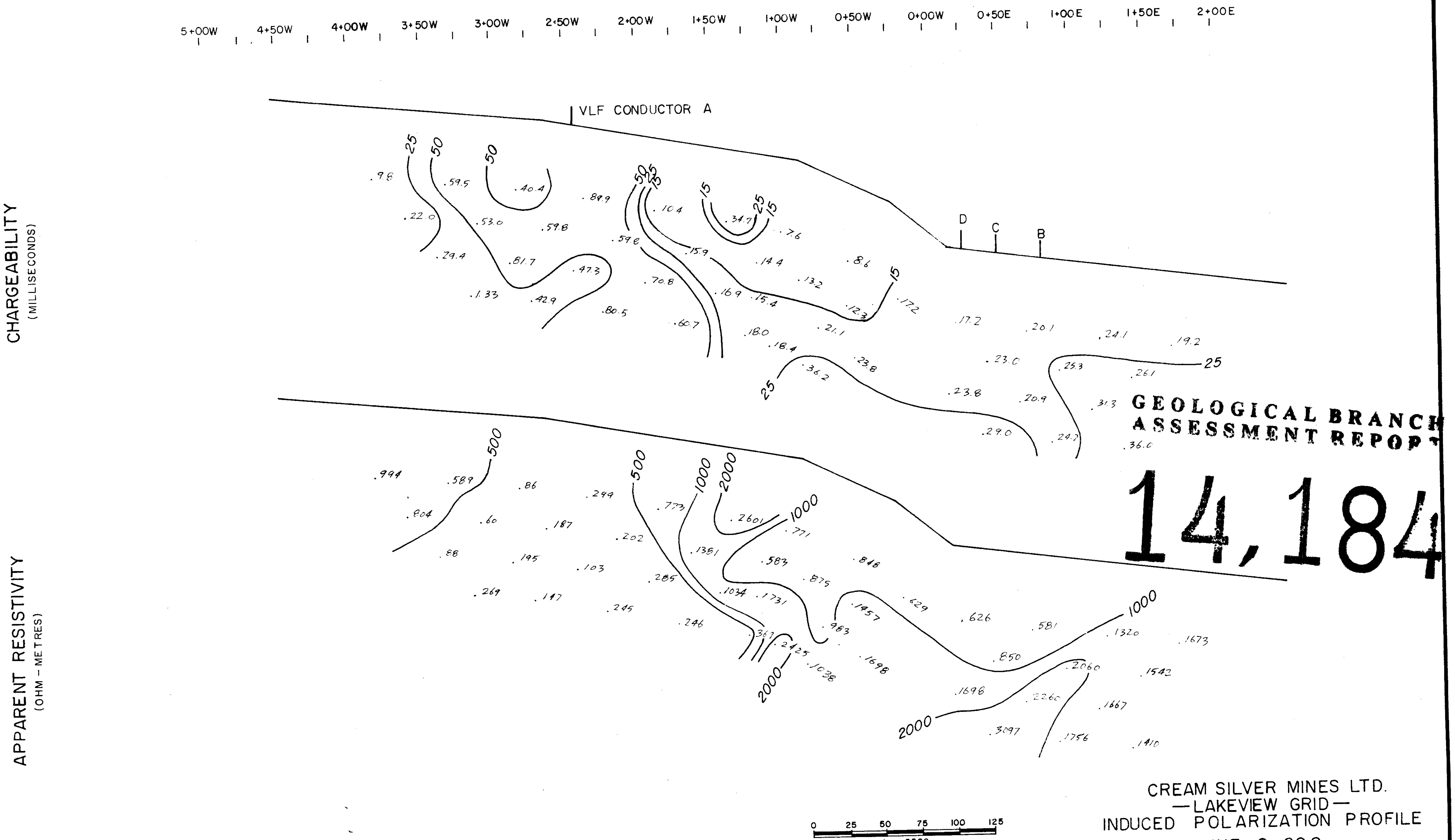


CREAM SILVER MINES LTD.
—LAKEVIEW GRID—
INDUCED POLARIZATION PROFILE
LINE 0+00N

WHITE GEOPHYSICAL INC.

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION, n = 1 – 4

FIGURE 3·2·4

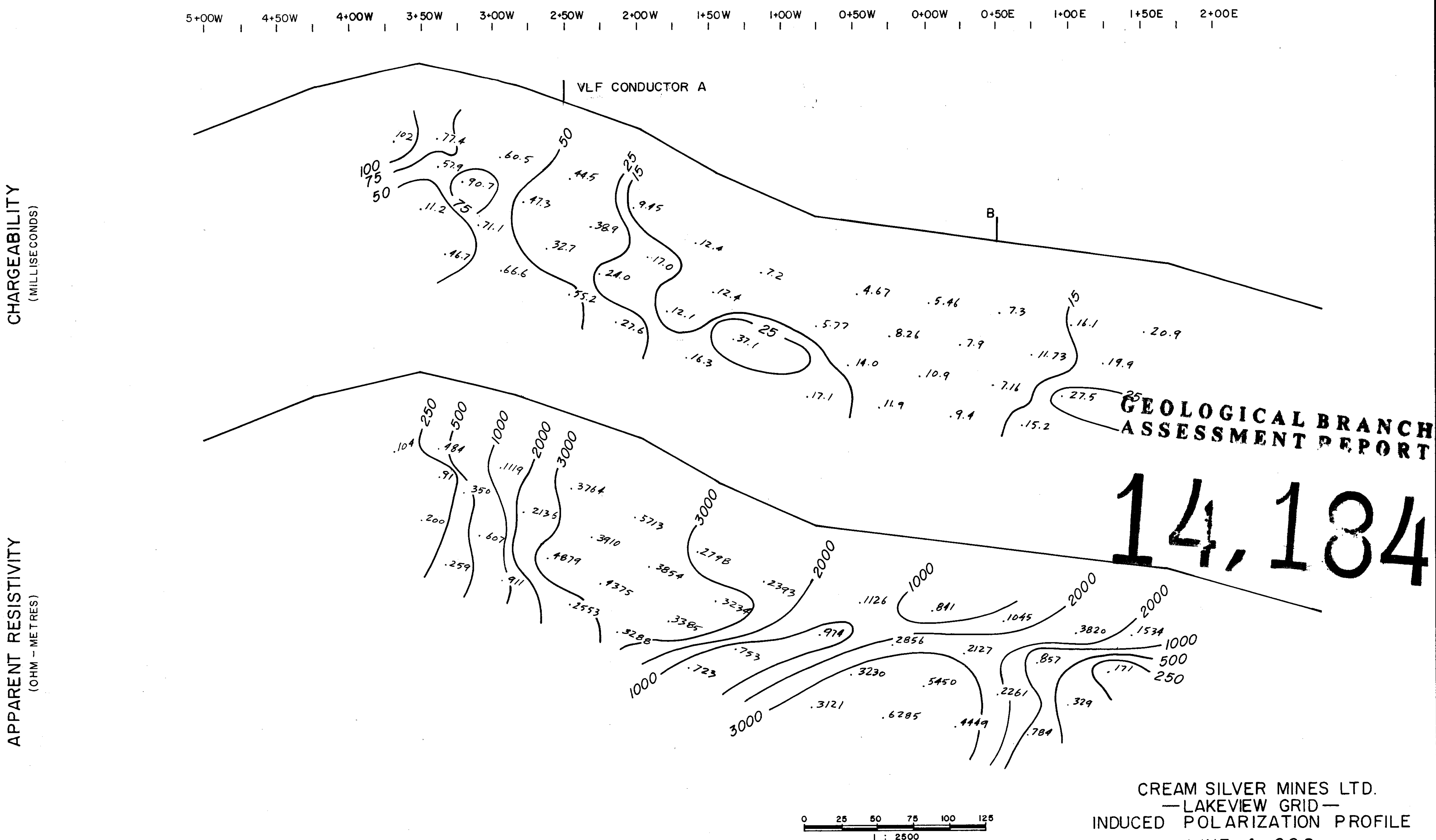


CREAM SILVER MINES LTD.
— LAKEVIEW GRID —
INDUCED POLARIZATION PROFILE
LINE 2+00S

FIGURE 3·2·5

WHITE GEOPHYSICAL INC.

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION, n = 1 – 4



CREAM SILVER MINES LTD.
—LAKEVIEW GRID—
INDUCED POLARIZATION PROFILE
LINE 4+00S

WHITE GEOPHYSICAL INC.

INSTRUMENT: HUNTEC MK. 4 TIME DOMAIN INDUCED POLARIZATION, n = 1 – 4

FIGURE 3.2.6