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> GEOPHYSICAL REPORT AW CLAIMS CLINTON MINING DISTRICT, B.C., NTS 92P/3W FOR TILAVA MINING CORPORATION BY DELTA GEOSCIENCE LTD

OCT. 22, 2000.

**GRANT A. HENDRICKSON, P.GEO.** 





## **GEOPHYSICAL REPORT**

AW CLAIMS,

# CLINTON MINING DISTRICT, B.C.

NTS 92P/3W

FOR

## **TILAVA MINING CORPORATION**

BY

### **DELTA GEOSCIENCE LTD**

**OCTOBER 22, 2000.** 

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G.A. HENDRICKSON, P.GEO.

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### **INTRODUCTION**

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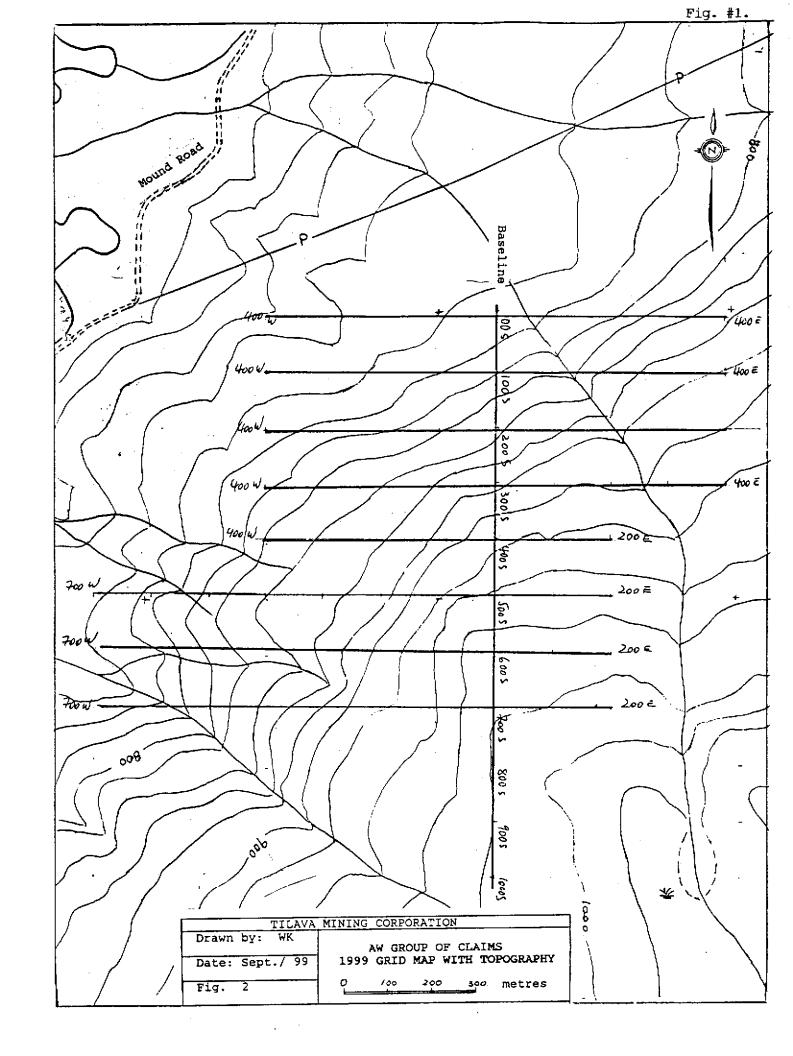
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At the request of the Tilava Mining Corporation, Delta Geoscience Ltd has conducted ground geophysical surveys over a portion of the AW claims. These claims are owned by Tilava and located within the Clinton Mining Division. Road access to the claims is possible by taking the Mound Road, which leaves Highway #97 (to the east) approximately two kilometers north of Clinton, B.C. The survey area is approximately 7 kilometers east of Highway #97. The enclosed location map shows the grid relative to Mound Road and the local topography. Fortunately vehicles can be driven into the centre of the survey area.

The survey area is underlain by a serpentized Peridotite. The area is currently considered prospective for deposits of Chromite, cryptocrystalline Magnesite, Talc and the related clay alteration products, particularly Montmorillonite. Magnetite, Ilmenite and Garnet also frequently occur within Peridotites. It's important to note that Platinum can, in some instances, be associated with Chromite in some Peridotites, usually Dunites.

The survey area is a northwest facing, moderately steep hillside, lightly forested with large pine trees. Overburden thickness is generally negligible, however it does increase rapidly to the grid north.

During the period August 13 to August 16, 2000, 3.2 kms of Induced Polarization/Resistivity surveying was completed, plus 5.8 kms of magnetic field strength and VLF-EM measurements.

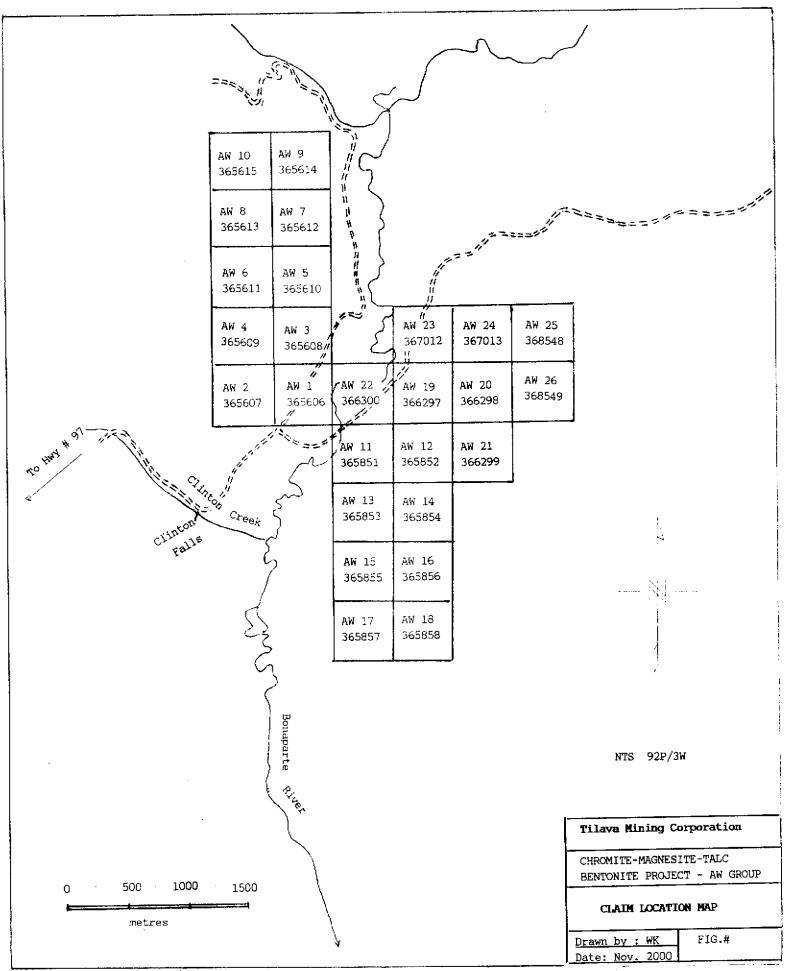


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FIG. # 1. A



## **PERSONNEL**

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Grant Hendrickson - Senior Geophysicist/Supervisor Will Markham - Technician Willy Kovacevic - Field Assistant/Owner

# EQUIPMENT

1	-	Iris Instruments IP-10 Receiver
1	-	Iris Instruments VIP-4000 Transmitter
5	-	Motorola HT1000 VHF Radios
1	-	Toshiba T1950CT Field Computer
4	-	Reels of I.P. wire
8	-	Porous Pot Potential Electrodes
10	-	Stainless Steel Current Electrodes
1	-	4x4 Dodge Durango Vehicle
1	-	GEM GSM19 Portable Magnetometer/VLF
1	-	GEM GSM19 Base Station Magnetometer

### **DATE PRESENTATION**

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- a) Colour contour plans (Figs. #2, 3, 4, 5). Note that separate reports containing black and white contour plans have also been produced in the event they are required for assessment reports.
- b) Posted raw data plans (Figs. #6, 7, 8), containing combined I.P/Resistivity data, plus magnetic field strength and VLF-EM.

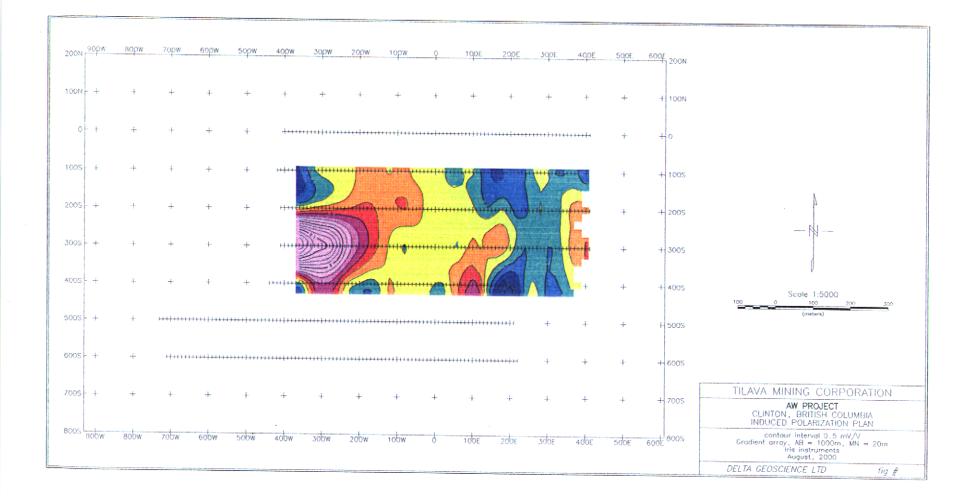
All of the above maps are appended to the back of this report and are at a scale of 1:5000.

Included in the test of this report are reduced scale (1:10,000) colour contour plans (Figs. #2R, 3R, 4R, 5R) for convenience in viewing all the data in a standard page-size format.

The gradient electrode array used to acquire all of the above data has an important advantage over other common electrode arrays in the horizontal resolution of anomalies, while maintaining an excellent depth of investigation. The gradient array also has operational advantages over the other arrays, which translate into survey cost savings.

A nine point Hanning filter (minor smoothing) was applied to the grid files prior to producing the contour plan maps.

The colour maps that accompany this report have been prepared so that low numerical values are displayed in blue, whereas the higher numerical values are in the red end of the spectrum.





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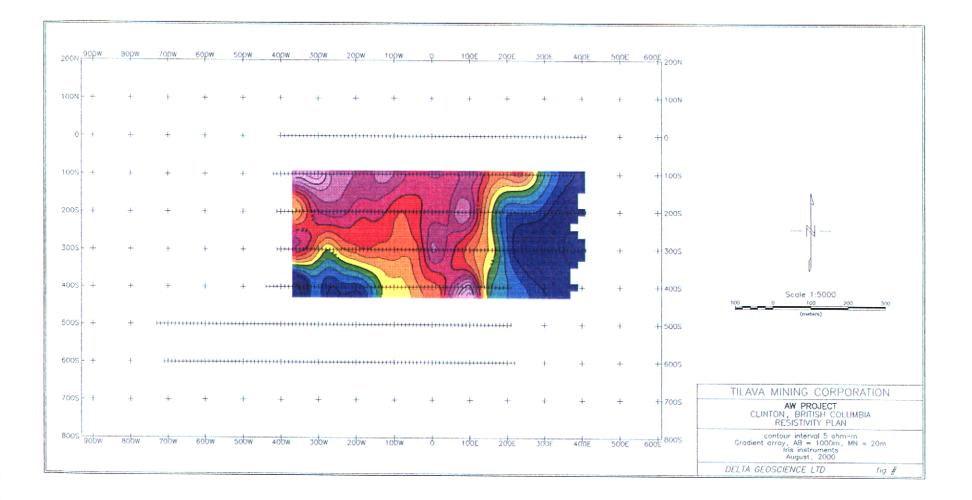


Fig. #3R.

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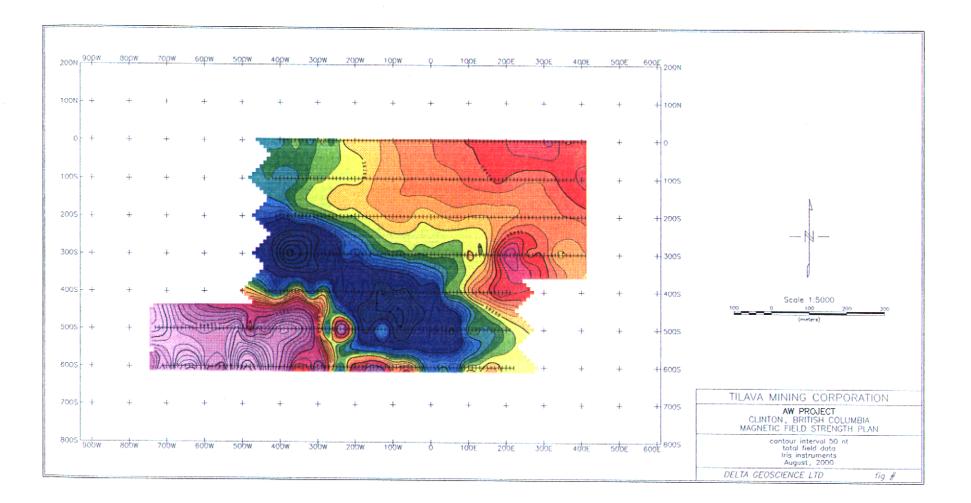
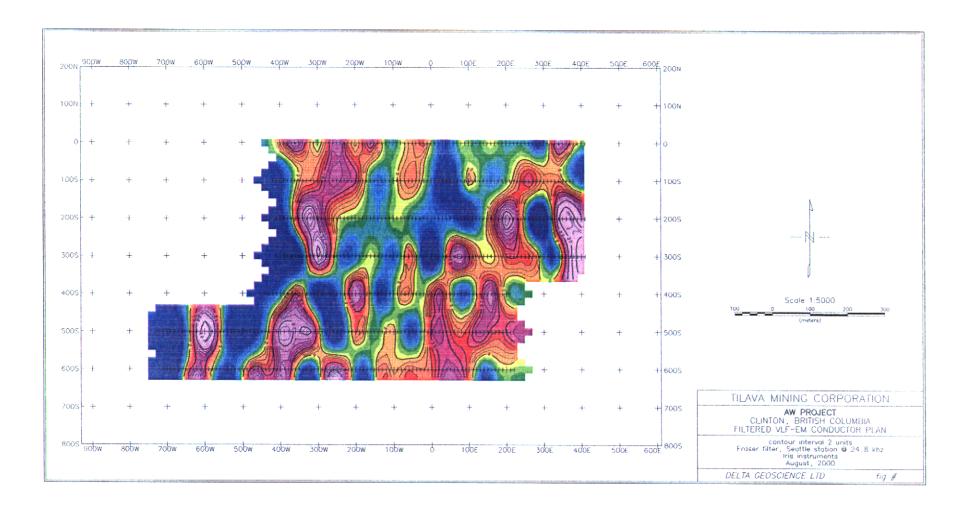


Fig. #4R.

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Fig. #5R

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### SURVEY PROCEDURE

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The exploration for narrow, small mineralized bodies requires techniques capable of high horizontal resolution.

Tilava had previously established a grid on its property. Survey lines were 100 meters apart and Delta Geoscience established survey stations every 10 meters for the magnetics and VLF-EM. For the Induced Polarization/Resistivity work survey, stations were every 20 meters. Budget restrains limited the survey work to four lines of I.P/Resistivity and seven lines of Mag/VLF. For the resolution of small targets, it would be better to have 50 meter line separations, however as this was a test survey and the budget was tight, we stayed with 100 meter line separations. All the survey lines bear east-west and are tied together by a baseline at 0+00.

The Seattle VLF-EM station transmitting at 24.8 khz was chosen for this survey, since its orientation and field strength was acceptable. The vertical in-phase component of the VLF-EM field was Fraser filtered to produce contourable values of shallow conductor strength. This data was resampled to 20m increments prior to filtering.

A base station magnetometer cycling every 30 seconds was employed to track and ultimately correct the magnetometer data for any diurnal variation in the magnetic field strength.

As mentioned earlier, the gradient electrode configuration was used for the I.P/Resistivity work. This work was completed with a set current electrode separation "AB" of 1000 meters and a potential electrode separation "MN" of 20 meters. It is generally preferable to keep the "MN" distance as small as signal levels and chaining accuracy will allow, in order to achieve the best possible horizontal resolution of anomalies.

Initially, we attempted to obtain the I.P. data at 10 meter increments (10m MN), however the anomalously low resistivities created significant signal to noise problems, which necessitated increasing the receiving dipole size to 20 meters.

With the electrode array as outlined above and the very low resistivities encountered, the depth of investigation is approximately 150 meters, with the array particularly focused in the 25-75 meter depth range.

The geophysical survey work so far described was designed to evaluate a small portion of the property in a cost-effective manner. The prime goals of this focused high resolution survey were as follows:

- a) spatial position and strength of minor sulphide mineralization that may have associated narrow zones of Chromite.
- b) narrow irregular high resistivity features, possibly related to veins or masses of magnesite derived from the alteration of the Serpentine.

- c) narrow zones of Magnetite mineralization that could occur in conjunction with bands of Chromite.
- d) assistance in geological mapping of the Peridotite and its alteration products.
- e) delineation of major structures, since these structures generally control the flow of the fluids necessary for intense alterations.

Magnesite mineralization is expected to have essentially no I.P. or Magnetic response, but would have a high resistivity expression. The relatively small expected size of Magnesite bodies is perhaps the main problem in their detection.

Chromite mineralization would probably occur closely associated with Magnetite and minor Nickel/Copper sulphide mineralization, thus a significant I.P. and Magnetic response was expected. No significant resistivity anomaly was expected.

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#### **DISCUSSION OF THE DATA**

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Overall, the geophysical data indicates that the large Peridotite body that underlies the claims is locally very intensely altered and deformed. While some alteration of Peridotite bodies is not so unusual, it is the intensity of the alteration within this grid that is very striking. This alteration is pervasive and extends deeply below the ground surface.

The very low resistivities encountered are indicating large areas of intense clay alteration, likely Montmorillonite. Within the overall low resistivity background are narrow zones or pods of higher resistivity, which might, in some cases, be indicative of cryptocrystalline Magnesite within north-trending fracture zones. It is however quite possible that these small resistivity anomalies are just related to silicified zones and/or younger dikes.

Five small, near surface pods of high resistivity (listed below) should be prospected for Magnesite:

POD 1, centered at 100E, 400S POD 2, centrered at 20E, 300S POD 3, centered at 90E, 200S POD 4, centered at 360W, 280S POD 5, centered at 320W, 100S

The isolated increase in the Induced Polarization response at 300S, 300W, correlates with a prominent magnetic low and an increase in resistivity. This area is probably, at this time, the best area to prospect for a highly altered remnant of the serpentized Peridotite that could have associated minor sulphide/Chromite mineralization. Other small remnants also appear to occur, i.e. at 400S, 100E.

The clay mineralization does not appear to have any noticeable contribution to the LP. response.

It's very likely that the strong magnetic field strength response seen in the southwest corner of the grid is related directly to quite variably disseminated magnetite mineralization within the serpentized Peridotite. The degree of alteration here, while still strong, is less than for the rest of the grid. The I.P. survey should at some point extend further south to evaluate this less altered Peridotite for discrete zones of sulphide/Chromite mineralization. Peridotites have a complex I.P. response, thus it's crucial to survey with techniques capable of high horizontal resolution.

The very intense northwest trending magnetic low that cuts through the centre of the grid is or prime interest, since it likely marks the location of a major northwest trending fault structure. This proposed structure disrupts the geology and very likely was the conduit for the hydrothermal fluids necessary for the widespread alteration. This magnetic low is also in small part related to the dipolar response of the very irregular, but intense magnetic anomaly situated in the southwest corner of the grid. This postulated broad northwest trending fault structure crosses through the grid from 400W, 200S to 100E, 550S and appears to have split the Peridotite body into two parts, with the northeast side down-dropped and more eroded. Overburden cover also increases substantially to the northeast and may in large part be related to slumping of the intensely altered rock (clay) from the steep hillside to the south.

Subsequent to the main structural event, a series of smaller north-trending faults have occurred, which have caused some offsetting and rotation of the geology and older structures. The largest of these north-trending faults occurs at 230W.

The intense alteration lateral to and along the main northwest trending structure would likely have liberated and/or altered much of the magnetite mineralization. The same could be said for the Chromite mineralization and both may have accumulated in the paleo drainage as significant placer deposits.

The rugged topography and intense clay alteration (low resistivity) has combined to limit the effectiveness or suitability of the VLF-EM techniques for this type of exploration work. Penetration of VLF-EM signal would have been minimal (less than 20m) in the lowest resistivity (5 ohm-m) areas. Steep, conductive and rapidly varying terrain creates spurious topography anomalies that are difficult to filter out completely.

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#### CONCLUSION AND RECOMMENDATIONS

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An abnormally intense hydrothermal alteration process has dramatically changed the Peridotite body underlying gridded area of the AW claims. This strong alteration may have been sufficient to produce small confined near surface zones of massive cyptocrystalline magnesite, which are of significant size to have produced the small, high resistivity pods. Fifty meter line spacings would have defined these resistivity pods better, however, at this time, a small program of further prospecting, trenching and perhaps shallow test drilling is warranted.

Prospecting for Magnesite should also be concentrated along the trace of the proposed major northwest trending fault structures, particularly in the area of most intense magnetic low.

The alteration processes have produced broad thick zones of primary clay mineralization that should be evaluated for content, purity and suitability for industrial application.

It's important that this geophysical interpretation be fully integrated with a program of detailed geological mapping and sampling to verify the potential targets suggested by the geophysics prior to any drilling.

Grant A. Hendrickson, P. Geo.

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### STATEMENT OF QUALIFICATIONS

Grant A. Hendrickson

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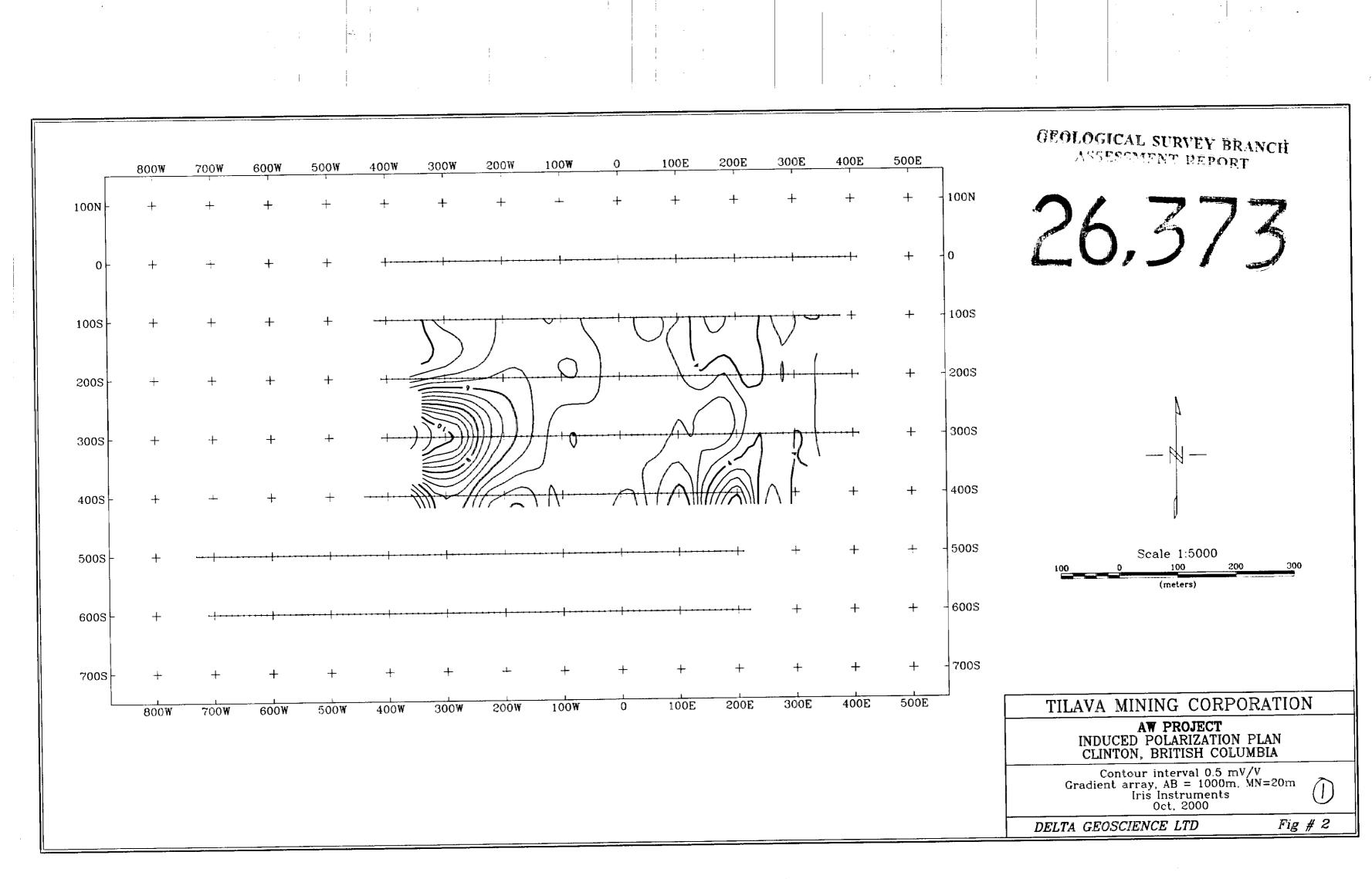
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- B.Science, University of British Columbia, Canada, 1971. Geophysics option.
- For the past 28 years, I have been actively involved in mineral exploration projects throughout Canada, the United States, Europe, Central and South America and Asia.
- Registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Canada.
- Registered as a Professional Geophysicist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, Canada.
- Active member of the Society of Exploration Geophysicists, European Association of Geoscientists and Engineers, and the British Columbia Geophysical Society.

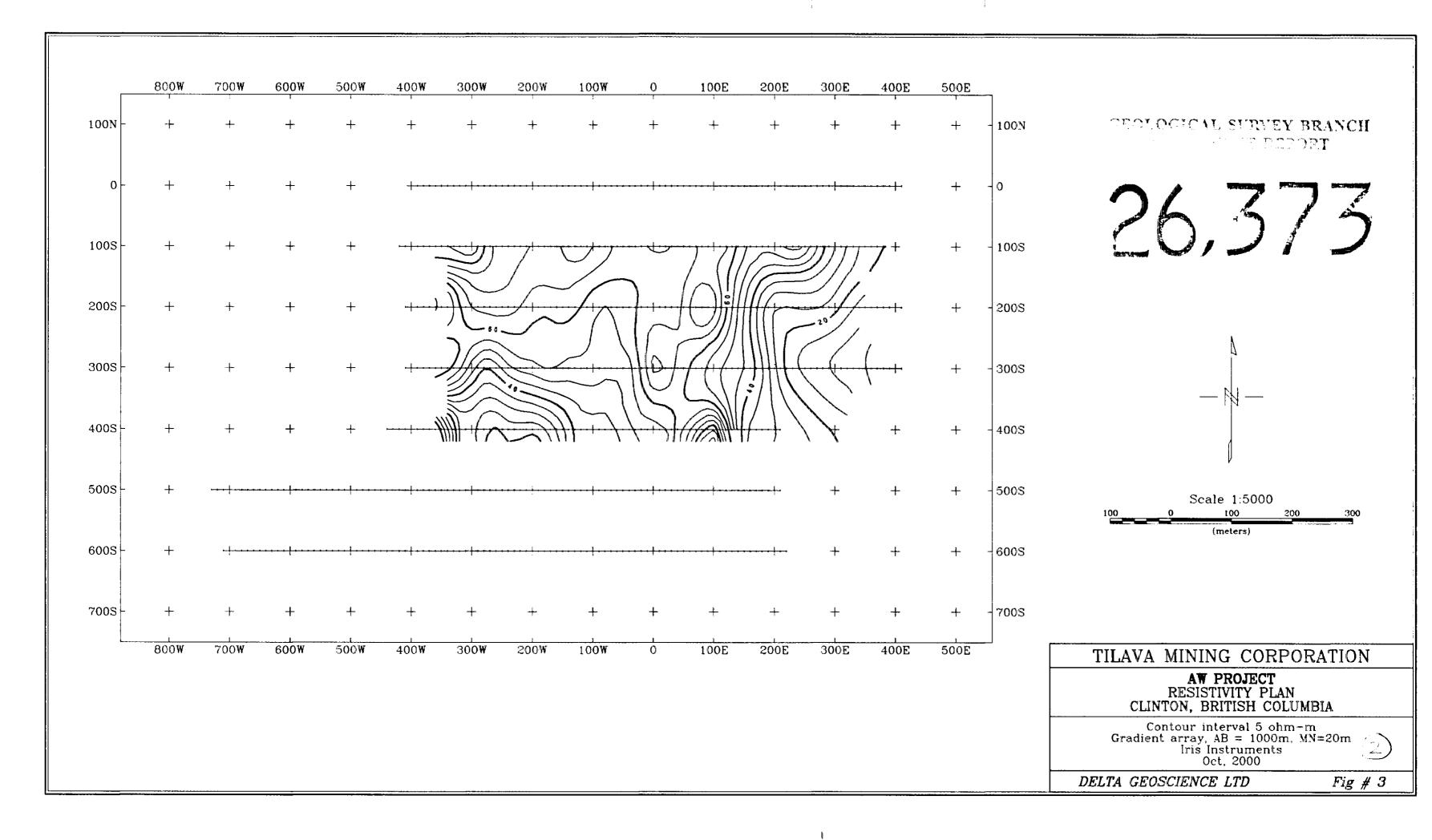
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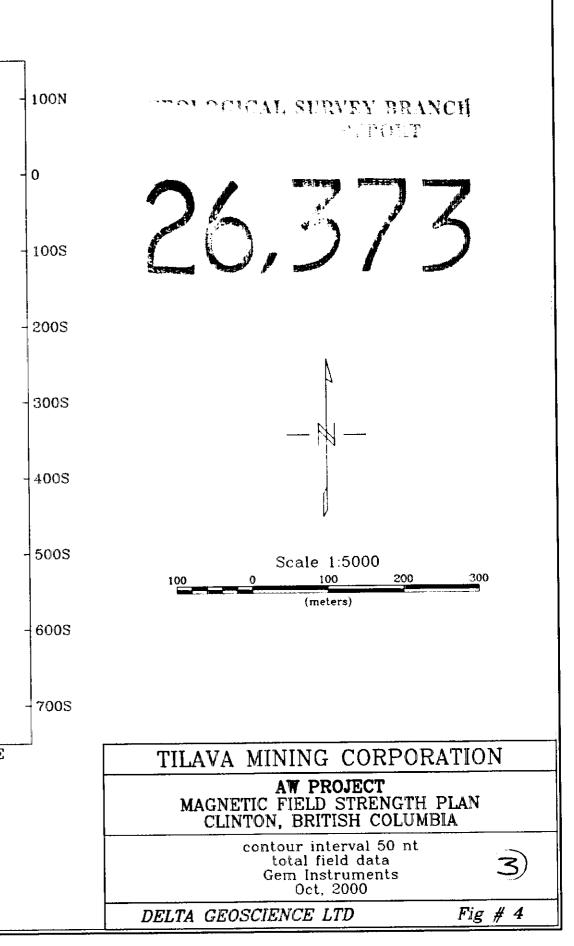


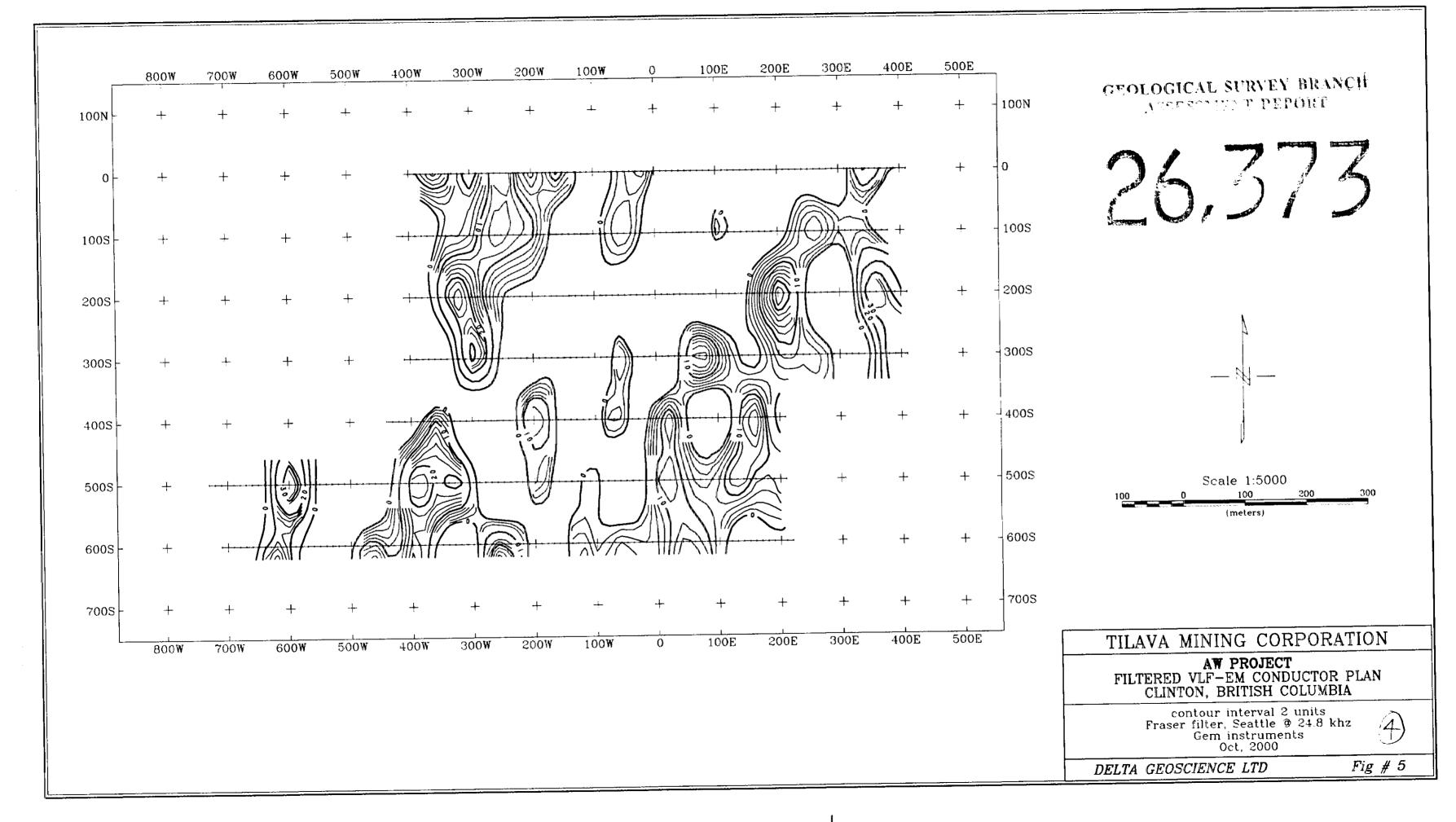
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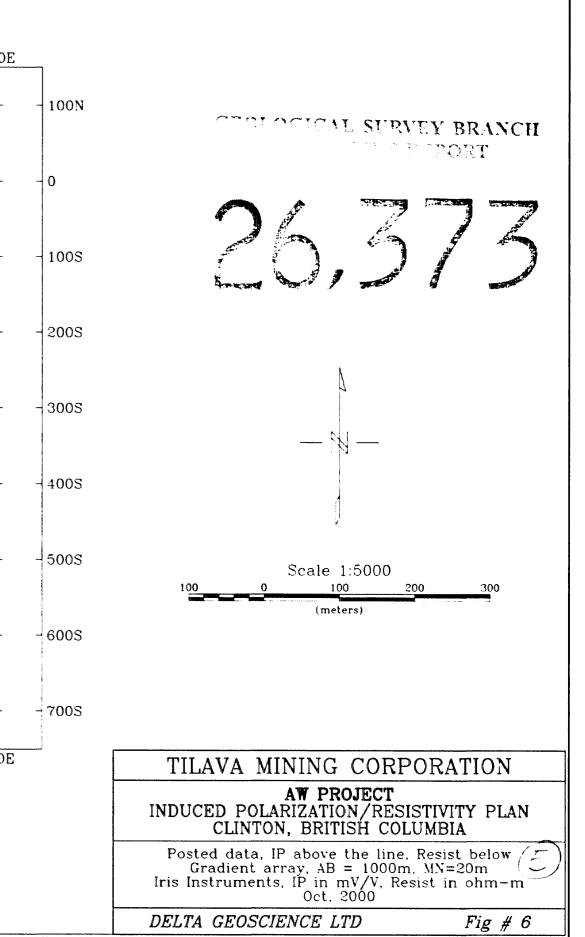


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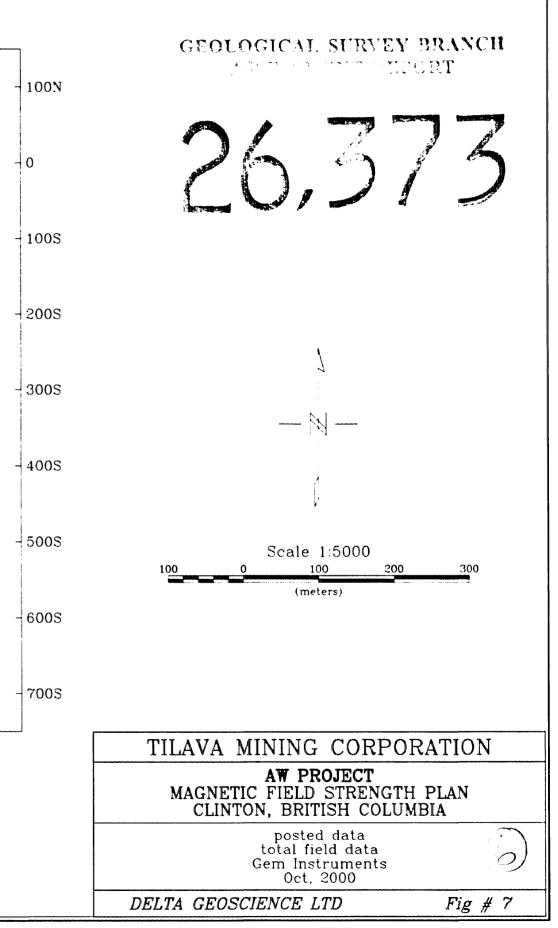
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