

20-3-5
Box 11
INTERPRETATION OF GROUND MAGNETICS

TASU MINE AREA, B.C.

JUNE 29, 1976

by C.A. AGER, Ph.D.

TASU MINE Interpretation of Ground Magnetism
by C. Ager June 29, 1976.

103-C-16
B.C.

1112 West Pender, Vancouver, B.C.

INTER-OFFICE MEMORANDUM

DATE: Sept. 22, 1975

TO: Ken Blower

COPIES TO: P.L. Munro S. Wulf
F.A. Godfrey G. McLeod B. Makar ✓

FROM: Alex Smith

103-C-16

SUBJECT: EXPLORATION - TASU

1. The best exploration bet close to the present workings is on the downward extension of the Dela-Blujay roll. This can be tested by diamond drill drilling below the exploration adit and the scam drifts being driven from the present bottom of the production decline. The structure should be tested along the interval between Sec. 44A and Sec. 66A - starting with sections 100' or 150' apart, with later fill in where any plus 20' intersections of magnetite are encountered.

Note - The structure appears to be a recumbent fold with some faulting. The contact on the axial part of the fold may lie as much as several hundred feet northeast of the drop off along the Southwest boundary of the Dela Blujay (# 5 Zone) orebody. It is the axial part of the fold which would likely be most favourable for ore.

2. The second bet is in the exploration of favourable portions of the limestone - volcanics contact from #3 and #4 zones south to the diorite. This will have to be taken in stages. The hopes are for the repetition to the south of the mine of orebodies aligned like -

- (a) #1, #2, #3, #4 Zones, i.e. north-south
and or
- (b) #1 Zone along the S30°W trend of the Contact Creek fault zone,
and/or
- (c) #5 Zone (Dela Blujay drop off) i.e. S.E.

(c) could be reached by continuing the #4 Zone crosscut another 300' along the present bearing but it would be better to head due south to remain in volcanics to the drop-off.

If the drilling of bet (1) is successful, 3 or 4 drill holes from the present face of #4 Zone crosscut would locate the downdrop and test the structure in the same manner as the proposed drilling in the Dela Blujay area.

Note - The 1971 drilling suggested that dropoff is a rotational or hinge feature along strike, i.e. the dropoff south of the #4 Zone crosscut may be small .

Another 400' south from the dropoff would take us to a N-S magnetic anomaly. This lies along the projection of the Contact Creek Zone. It may be the expression of a narrow dyke-like band of magnetite which has risen high into the limestone. This should be a good place to look for an orebody on the Ls.-Volc. contact.

At N14500 E21000 an anomaly appears to be caused by small pods of magnetite on the walls of pre-ore porphyry dykes. The favourable Ls-Volc. contact below could be drilled from surface or tested later.

Outlook

The anticipated price for high grade magnetite concentrates makes attractive a search for new orebodies to be mined from underground.

The known ore all lies within the 2000 gamma magnetic anomaly. The overlying limestone ranges from 0' to 800' in thickness. The area has been adequately drilled off from the surface. There remain large tonnages of geological reserves - adjoining the pits and presently-planned stopes - that could be mined on a room and pillar system should this become economic.

Structurally there is no apparent reason why the pattern of #1, #2, #3 & #5 Zones should not be repeated in the continuation of the limestone basin south to the diorite (300' ±.)

The thickness of the limestone capping (1100' - 2000'?) coupled with the steep topography are against surface exploratory drilling.

There are no strong magnetic anomalies such as outlined the known orebodies. This may be due to the much greater thickness of limestone (or to lack of orebodies?). We should get an opinion from a professional geophysicist.

Preliminary Work

- A. We should prepare a set of 1" - 400' maps covering all the surface mapping from Horn Is. south to the diorite. These should be generalized from the existing 1" = 100' maps.
1. Base map with geology, outlines of pits, roads and underground workings. Contour interval 100' 2,3,4. Clear trace copies for superimposing on (1)
 2. Magnetometer contours.
 3. Basement contours.
 4. Magnetite isopachs.
 5. Coloured prints of 2,3,4.
- B. A few test surveys should be made with the magnetometer underground in areas where the position of the magnetite is known. With trackless mining it could be a useful tool. P.N.M.L. geophysicist and library could give advice and case histories.

Alex Smith

Alex Smith

TO: Co. H In Lead
PLACE: Westport Mines
Tasne B.C.

FROM: Alex Smith
PLACE: Box 57 Galena B.C.
DATE: VAN 1170 Aug 2 '76

2M-MP-863

Dave Brown has sent me a copy of Dr Ager's magnetism report. His #4 anomaly forms up the idea of continuing #47 crosscut 300 ± to the Delta Benjey dropoff. Also discourages driving ^{any} further south to the definite contact - 3000' (typographic error in my memo Sept 22 '75). However some of the filtered maps show the same N65W trend to the south. What are they caused by?

I do not have much in the way of Tasne maps here so its not possible to comment in more detail. Did Dr Ager have the 1" = 400' scale set of maps suggested by my memo? Somebody should talk to Dr Ager about the significance of the various maps. Its a very worthwhile study.

With best wishes & good weather
Yours sincerely
Alex Smith

Please a write if you wish me to do anything further.

The mag striking of #42 pm surface was not continued far enough south to test the Ager #47 anomaly.

1112 West Pender, Vancouver, B.C.

INTER-OFFICE MEMORANDUM

DATE: Oct. 27, 1975

TO: Ken Blower

COPIES TO: S. Wulf.
G. McLeod B. Makar ✓FROM: Alex Smith
Box 57, Galiano, B.C.SUBJECT: MY MEMO SEPT. 22 - PRELIMINARY WORK. EXPLORATION

There is a good base map 1" = 400' B.A.G. Sept. 1971 #200-600 A - except that it doesn't go north of 18100 N, i.e. #1 Pit. This is not too important in our present exploration study but it would be more satisfactory to have all the work to date on one sheet.

Would like to see all the work for 14000 E to 22000 E and from 11800 N to the N.end of Horn Is. included. This could be done by making N-S the long way on the 21-1/2" x 33-1/2" size of the 200-600A map which I am assuming is a standard size.

I have a print of the 200-600A Base map here on which have generalized the geology of the 1969-71 mapping of 1" = 100' sheets 1,2,5,4,6. I have not completed reducing sheet 3 but can do so as I have a sepia of it to work from.

There should be 1" - 400' geology of the pit areas, i.e. north of sheet 3, at the mine.

The tracings of the existing 1" = 100' magnetometer, basement contour, and magnetite isopach maps can be reduced photographically to 1" - 200', generalized, and then further reduced to 1" = 400'.

The underground magnetometer tests should be done where we know there is no magnetite, where magnetite above, where below, where to a side and at times where no machinery or electrics working.

Alex Smith

Alex Smith

AS:o

C. A. AGER & ASSOCIATES LTD.

Telephone (604) 536-1154

CONSULTING
GEOPHYSICISTS

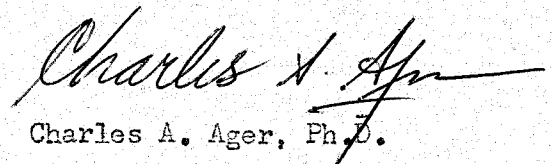
15423 34th Ave.
Surrey, B.C. Canada
V3S 4N7

INTERPRETATION OF GROUND MAGNETICS, TASU MINE AREA, B. C.

S U M M A R Y

This report represents the compilation and interpretation of the Tasu Mine area, B.C. ground magnetics. Filtering and contouring of the magnetic data was done by IBM 370 computer. The new maps, so derived, outline a broad zone of magnetite mineralization surrounding the Tasu Mine area. As well, these filtered maps selectively pinpoint the known ore zones and suggest two new areas where more magnetite mineralization is likely to occur. As a direct result of this magnetic interpretation, further diamond drilling work is recommended in order to determine the economic potential of these new zones.

Respectively submitted,



Charles A. Ager, Ph.D.

Geophysicist

June 29, 1976

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INTRODUCTION

At the request of Mr G.H. McLeod of Wesfrob Mines Ltd., a detailed interpretation of the ground magnetics over the Tasu Mine area was undertaken by C.A.Ager & Associates Ltd. The intent of the work was as follows:

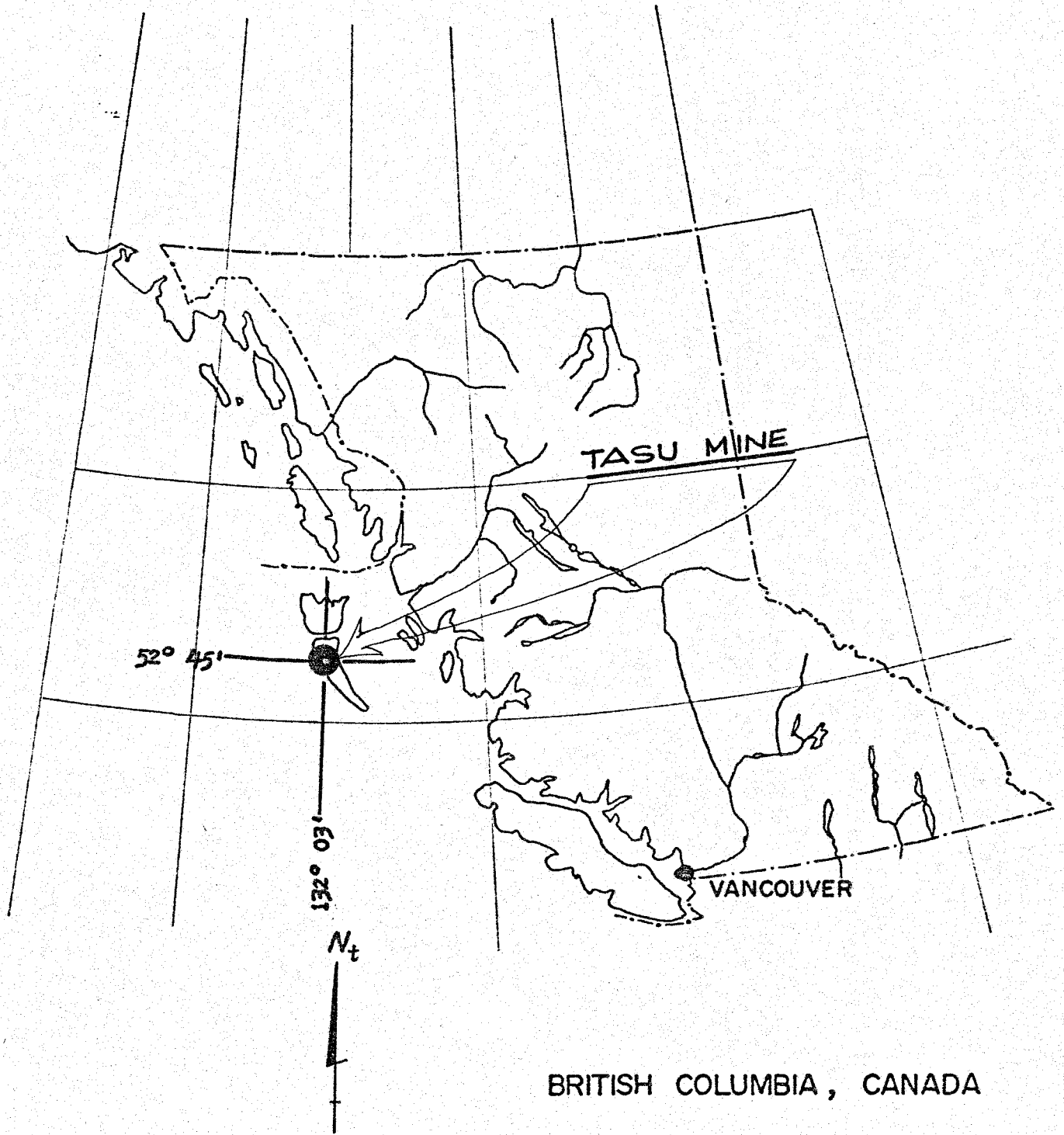
- 1) To compile all the previous ground magnetics work onto one common datum, and
- 2) To outline specific areas where more magnetite ore is likely to be found.

The following report describes in detail the methods used and the results obtained in this work.

GEOLOGICAL SETTING

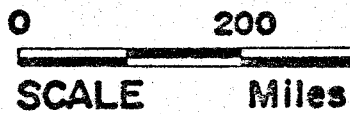
The Tasu Magnetics Project covers an area of approximately 1.75 square miles located over the Tasu Mine area, Queen Charlotte Islands, B.C. (Figures 1a,1b). For the sake of reference, a copy of Sutherland Brown's (1968) geological plan map is given here as Figure 2 as well as the following summary from his bulletin:

'Figure 37 (2) is a general plan of Tasu, showing the surface geology and the numbered ore zones. The essential structure is a folded and tilted panel of stratified rocks surrounded and underlain in part by the northern termination of the San Christoval Batholith. The stratified succession includes the upper part of the Karmutsen Formation



BRITISH COLUMBIA, CANADA

FIGURE 1a



LOCATION MAP - TASU MINE	
NTS 103C/16E	
June 1976	C.A.AGER & ASSOC LTD Surrey, B.C.

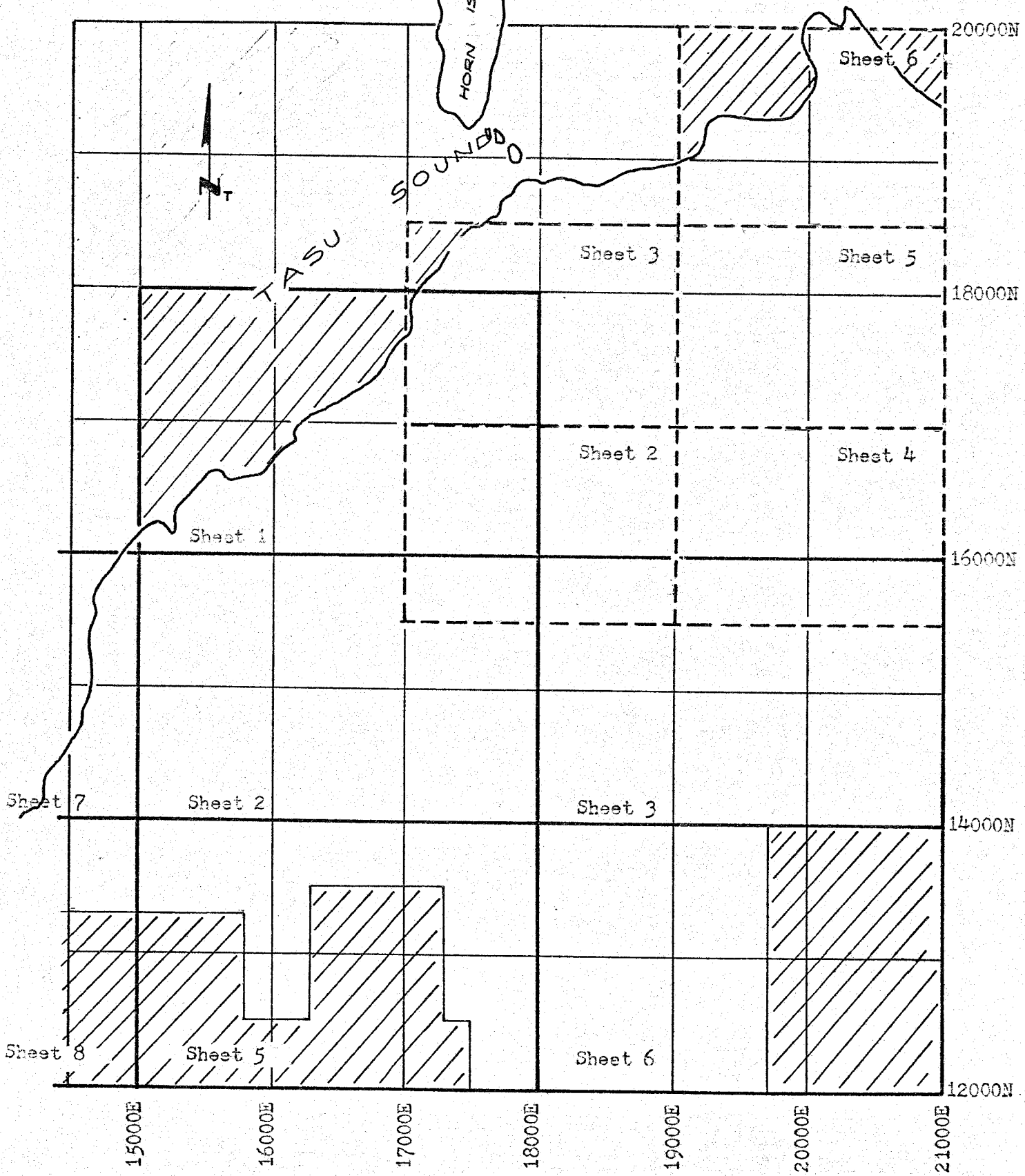
LEGEND

- //// No Magnetic Data
- 1963 Survey Area
- 1969-70 Survey Area

LOCATION MAP - MAGNETOMETER
SURVEY GRID

Scale 1" = 1000'

Tasu Mine Area



and the three members of the Kunga Formation. Only the two limestone members are closely involved in the ore zones. The stratified panel was repeatedly intruded by igneous rocks from its initial formation to late in the geological history of the area. First, Karmutsen basalts were cut by minor related sills. Next, a complex laccolith of diorite porphyry of considerable importance was emplaced principally between the Karmutsen and Kunga Formations. Then the San Christoval Batholith was emplaced, followed by skarnification and mineralization. Finally two volumetrically important post-ore dyke swarms, the earlier andesitic and the later basaltic, were intruded. The magnetite ore and associated skarn very largely are found in a stratiform zone some 200 feet thick above the top of the Karmutsen Formation, replacing massive limestone and diorite porphyry.'

The ore bodies are strongly magnetic, outcrop in the northeastern section of the survey area, strike northwesterly, and dip moderately to the southwest. Figure 3 gives magnetite thickness isopachs for the Tasu Mine ore bodies. This map was compiled from drill hole information and the contours represent cumulative magnetite thickness. In the northern area (18000N + 20000E) the northeasterly trend to the magnetite thickness is more apparent than real as it represents a summation of a series of unconnected layers. In the other areas, e.g. (16000N + 18700E), the isopachs are more representative of one massive body. As will be shown later, the isopach information will prove very useful in the interpretation of the magnetic maps.

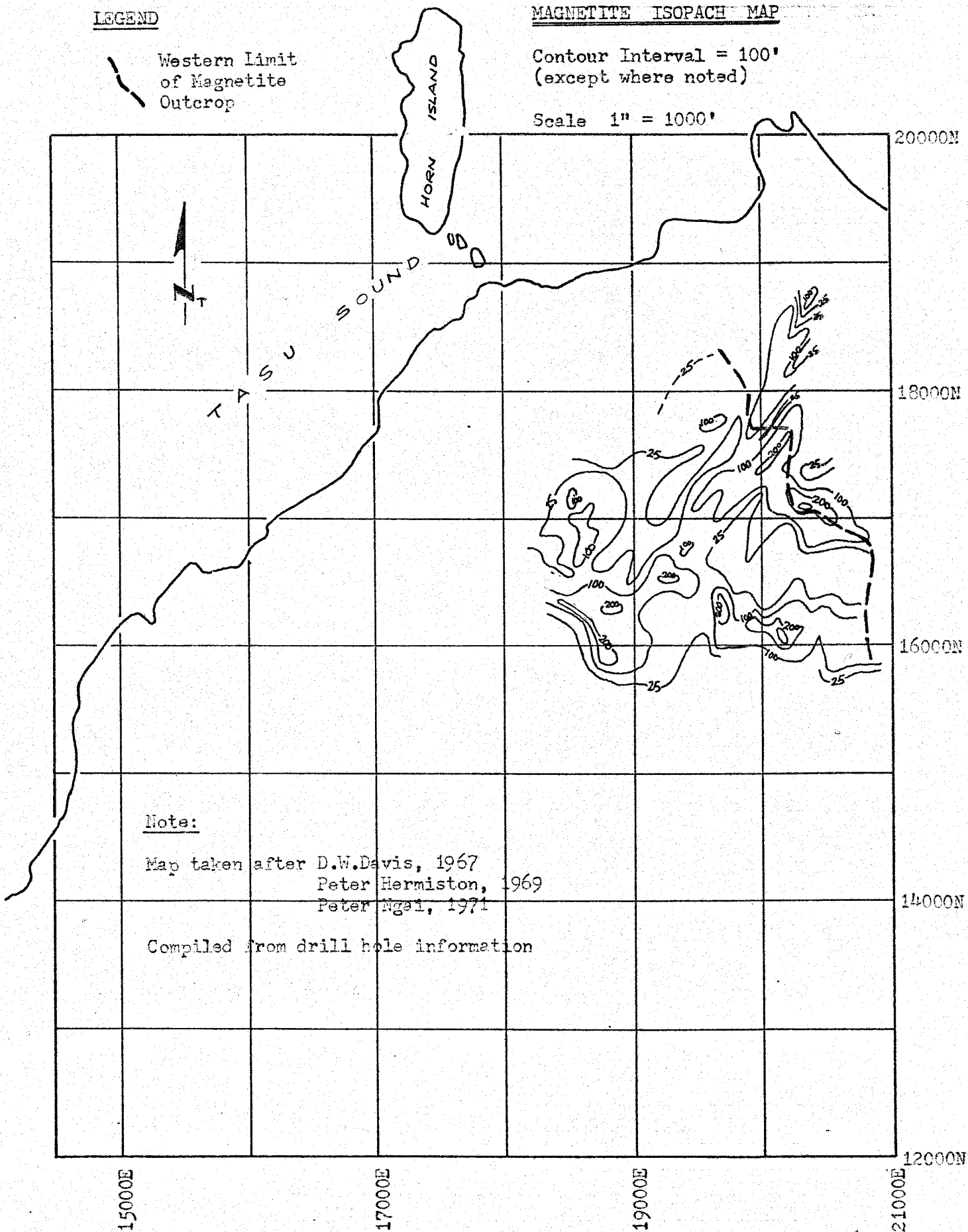
LEGEND

Western Limit
of Magnetite
Outcrop

MAGNETITE ISOPACH MAP

Contour Interval = 100'
(except where noted)

Scale 1" = 1000'



Note:

Map taken after D.W.Davis, 1967
Peter Hermiston, 1969
Peter Ngai, 1971

Compiled from drill hole information

THE DIGITIZED MAGNETIC MAP

The ground magnetic surveys were conducted by Falconbridge and/or Wesfrob Mines personell during the periods 1963 and 1969-70. Fluxgate magnetometer data for the 1963 survey were taken over the northeastern section of the map area (main ore zones) using an arbitrary datum of 57,400 gammas. The 1969-70 magnetometer work was conducted over the southwestern half of the map area using a common but different datum. Fortunately, at least 18 overlap stations were found to be common to both surveys. A statistical analysis of the differences at overlap stations indicates that approximately 500 gammas should be subtracted from the 1963 data in order that it match the 1969-70 survey work. This was done for the magnetic maps presented here and the new datum is therefore 57,900 gammas for the whole survey area.

The magnetic maps used for the magnetic study include all or part of the following (see Figure 1b):

1963 - sheets 2, 3, 4, 5, 6.

1969-70 - sheets 1, 2, 3, 5, 6, 7, 8

In order to facilitate the magnetic interpretation process, the 12 maps listed above were compiled into one overall map with grid boundaries 14,500E to 21,000E by 12,000N to 20,000N. The data was then digitized by hand and keypunched onto computer cards. Digitizing

interval was 100 ft by 100 ft. This corresponds to an overall grid size of 66 by 81 or 5346 data points.

As evidenced by the original magnetic data, there is a tremendous variation in the strength of the vertical component anomaly in the earth's magnetic field within the survey area. Values range between -50,000 to +50,000 gammas over relatively short distances. This presents tremendous problems in contouring the data on the computer. As well, there is sufficient surface magnetic noise unrelated to geological structures evident in the magnetic data. For the above reasons, the original magnetic map was smoothed with a low pass filter of cutoff 1/10 cycles per data interval. This smoothed map, Figure 4, is taken as the best representation of the compiled magnetic map within the study area. It is this map which yields a good view of the overall nature of the magnetic anomalies and is one of the more important maps presented here.

THE FILTERED MAPS

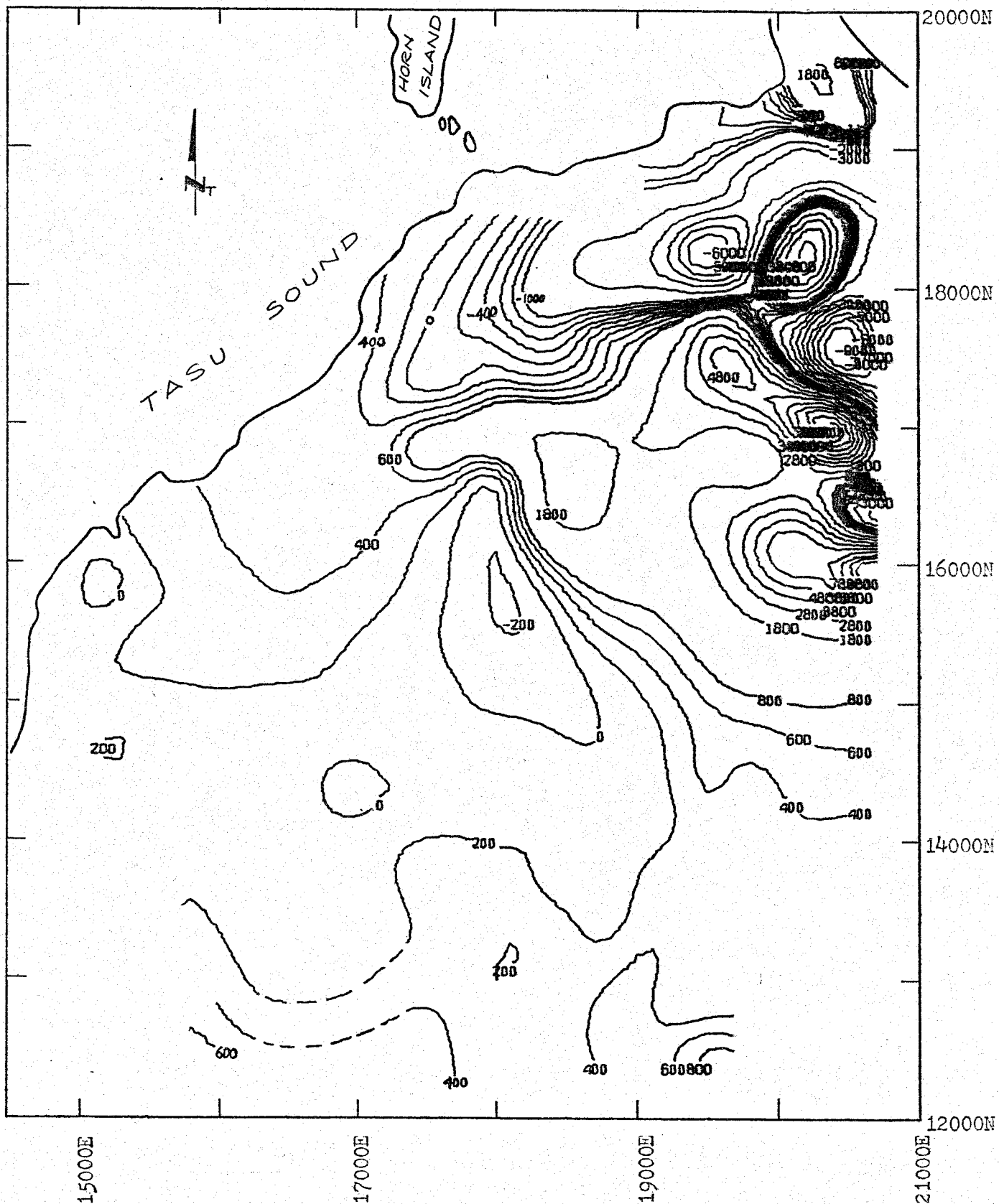
The term 'filtering' when used in exploration geophysics means 'changing the frequency characteristics of a map in a particular manner'. This procedure usually generates maps that are easier to understand and to interpret. These new maps can supply tremendous insight into the various subtle characteristics inherent in but not

FIGURE 4a

SMOOTHED MAGNETIC MAP

Contour Intervals = 200 and 1000 gammas

Scale 1" = 1000'



well apparent in the original map. In our case, we want to accentuate magnetic high anomalies, to outline the main ore body trends, and to discover specific target zones where more ore bodies may exist. Because deeper magnetite ore deposits could be masked by stronger anomalies caused by near surface bodies, some effort must be made to suppress near surface anomalies and to amplify deeper, more subtler effects. Several filtered magnetic maps have been constructed with the above goals in mind as follows:

1) Regional Magnetic Map (M_R)

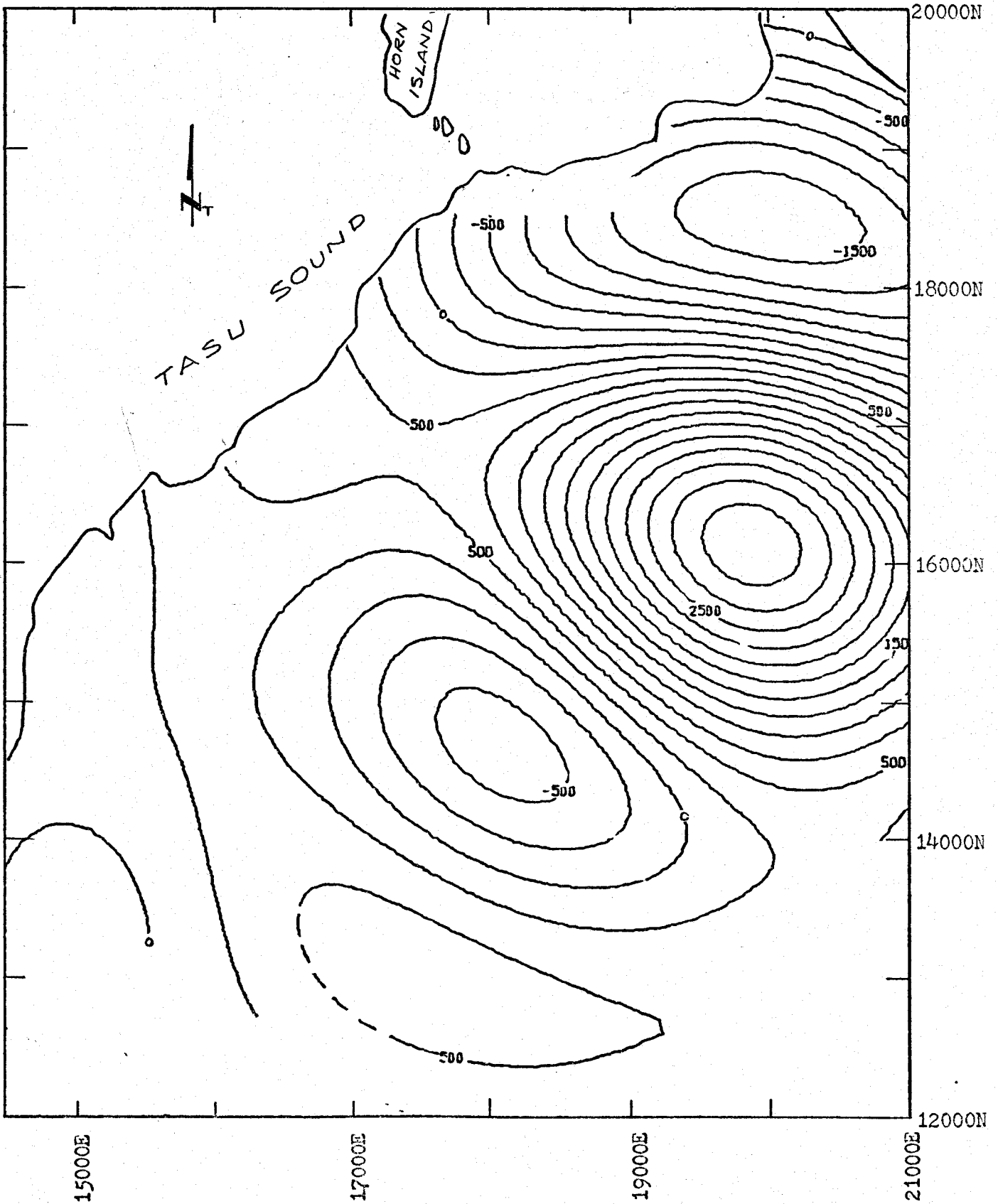
The Regional Magnetic Map, Figure 5, was constructed in the frequency domain using a low pass filter of 1/30 cycles per data interval. This map represents the regional magnetic field within the survey area. In this case, 'regional' means 'representative of the gross geological structures underlying the Tasu Mine area'. The importance of this map is very clear - it gives a simple but complete overview of the general form of the magnetic anomaly field associated with the Tasu Mine geology. It is this simplicity which provides the interpretative insight as will be discussed in the next section.

2) Optimum Magnetic Map (M_{OPT})

Each magnetic map contains signal (anomalies) and noise. When maps are filtered it is desirable to enhance only the signal

Contour Interval = 250 gammas

Scale 1" = 1000'



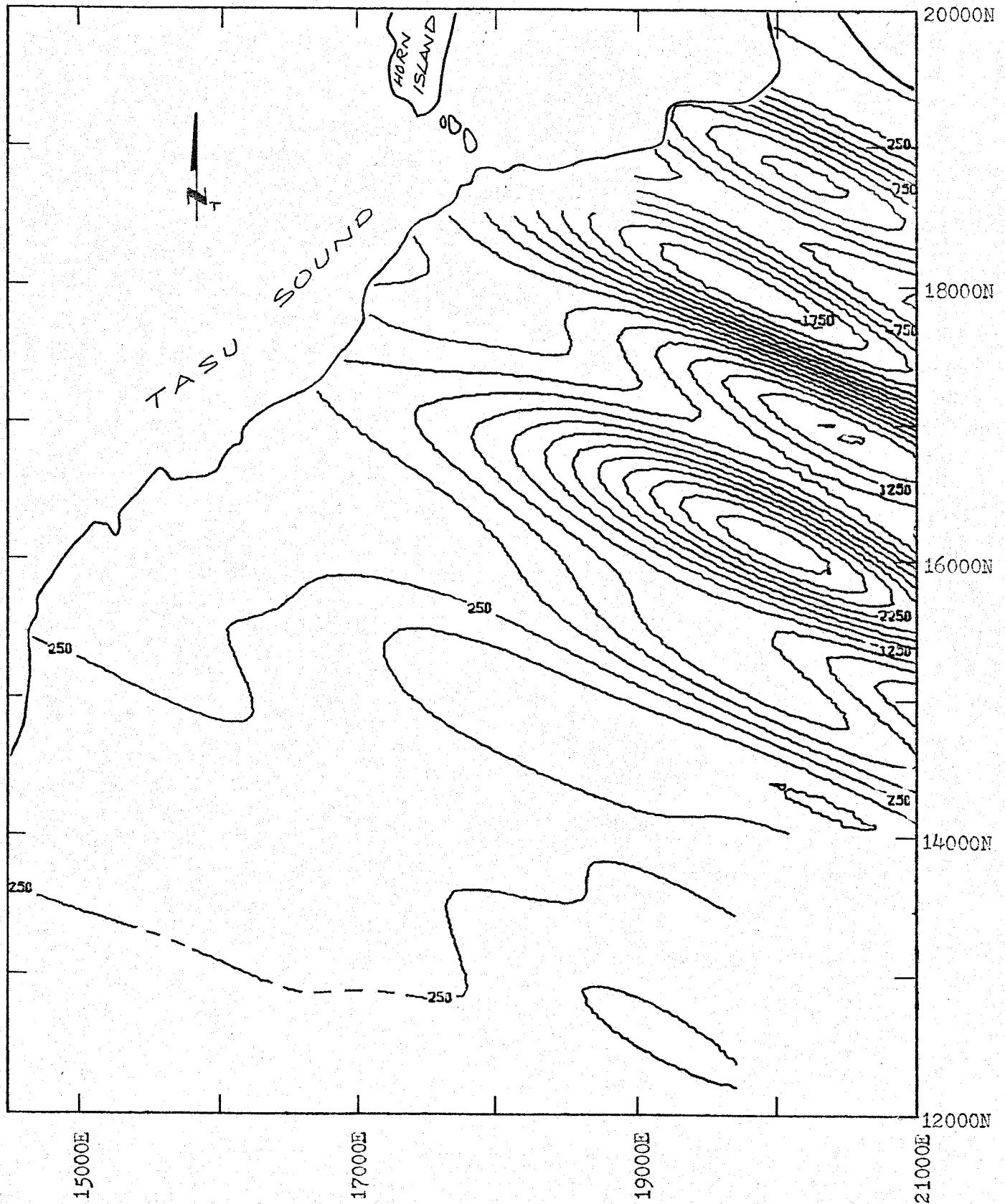
(anomalies) and to suppress or remove the noise. For this work, 'signal' (anomaly) is defined to be those magnetic features directly associated with the magnetite ore bodies. 'Noise' is defined as those local, random magnetic effects which contaminate and distort the anomalies. Each individual map will have its own signal-noise characteristics. By analysing the 'power spectrum' of the map one can determine an 'optimum' or best estimate of the noise and therefore provide for enhancing only the signal in the filtering process. This procedure of applying filters in an optimum way is called 'optimum filtering'. Its main characteristic is that it matches each filter to the particular noise spectrum of the map and therefore insures the best possible enhancement of the anomalies. Figure 6 is the Optimum Magnetic Map for the Tasu Mine area. It represents the original magnetic map minus the 'geological noise'. (Noise level was selected as 0.375 of the normalized power.) It is this map which most clearly delineates the trend of the magnetite ore bodies.

3) Optimum Downward Continued Map (M_{ODC})

One of the remarkable aspects of potential fields (e.g. magnetics) is that data which are known on one surface may be evaluated on another surface providing that both surfaces are above magnetic

Contour Interval = 250 gammas

Scale 1" = 1000'



sources. In our case, the magnetic data is collected on the ground surface. Anomalies caused by deeper magnetite sources will reveal themselves as subtle broad features which may be completely hidden by near surface effects. If we wish to enhance these weaker anomaly features then we can 'downward continue' the data to some other level closer to their source. If the level we wish to view them on is below the ground surface, then some provision must be made to 'strip off' the magnetic effects of the rocks between the two levels. This stripping off procedure is, by necessity, a qualitative judgement regarding the magnetic nature of the overlying rocks. In our work here, most anomalies are caused in whole or in part by massive magnetite which occurs at various depths from surface to 800 feet. There is no hope of totally removing these effects down to any given level as their amplitudes are too large. The problem, therefore, is to suppress these features sufficiently so that deeper sources can be revealed in their presence as well. This was done by downward continuing the magnetic map in an optimum way. Figure 7, the Optimum Downward Continued Map (M_{ODC}), represents the magnetic field as viewed 200 feet below the surface. It is this map which points out deeper sources and accentuates ore body trend information as will be discussed later.

FIGURE 7a OPTIMUM DOWNWARD CONTINUED MAP

Continuation Interval = 200 feet
Contour Interval = 500 gammas

Scale 1" = 1000'

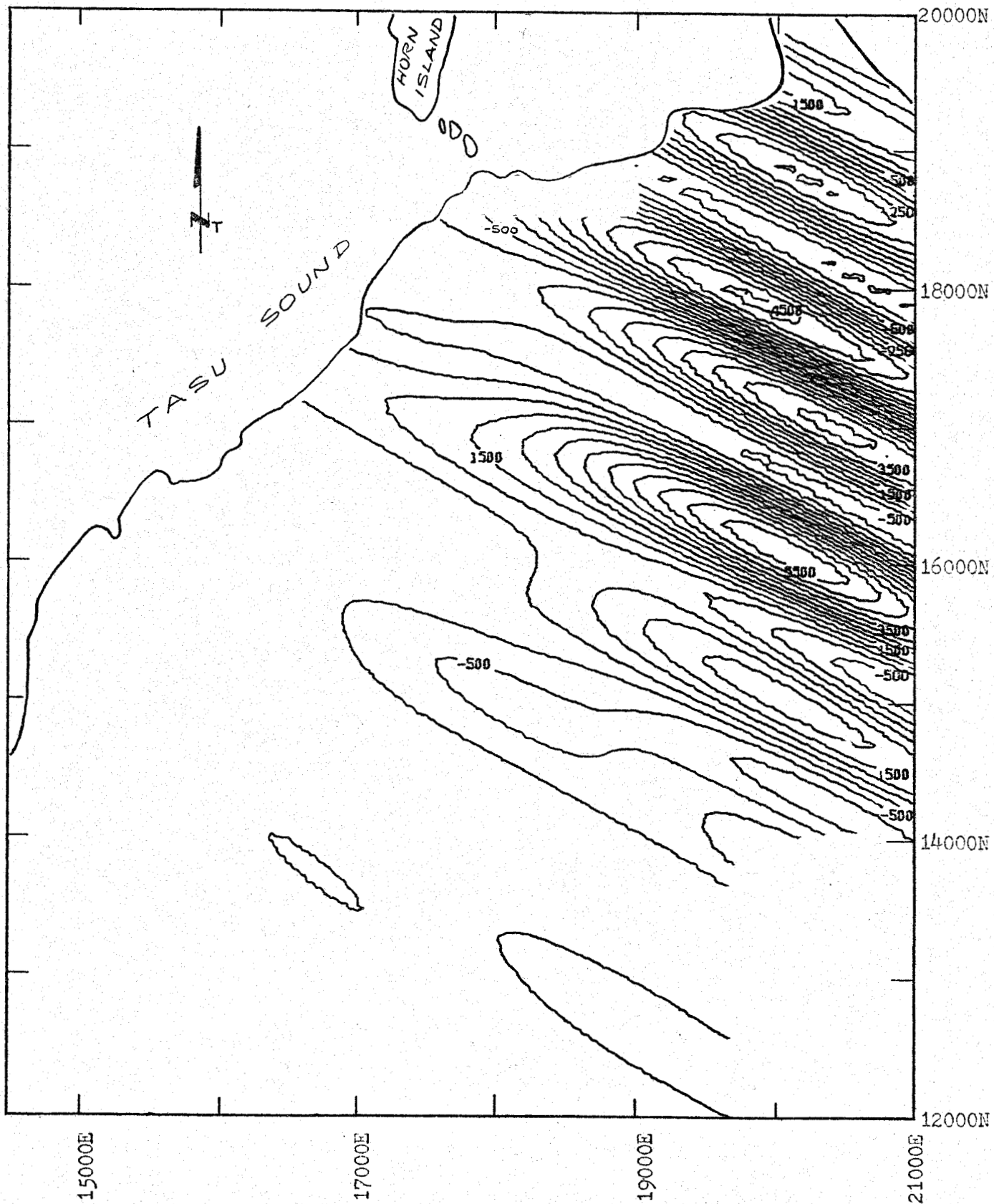
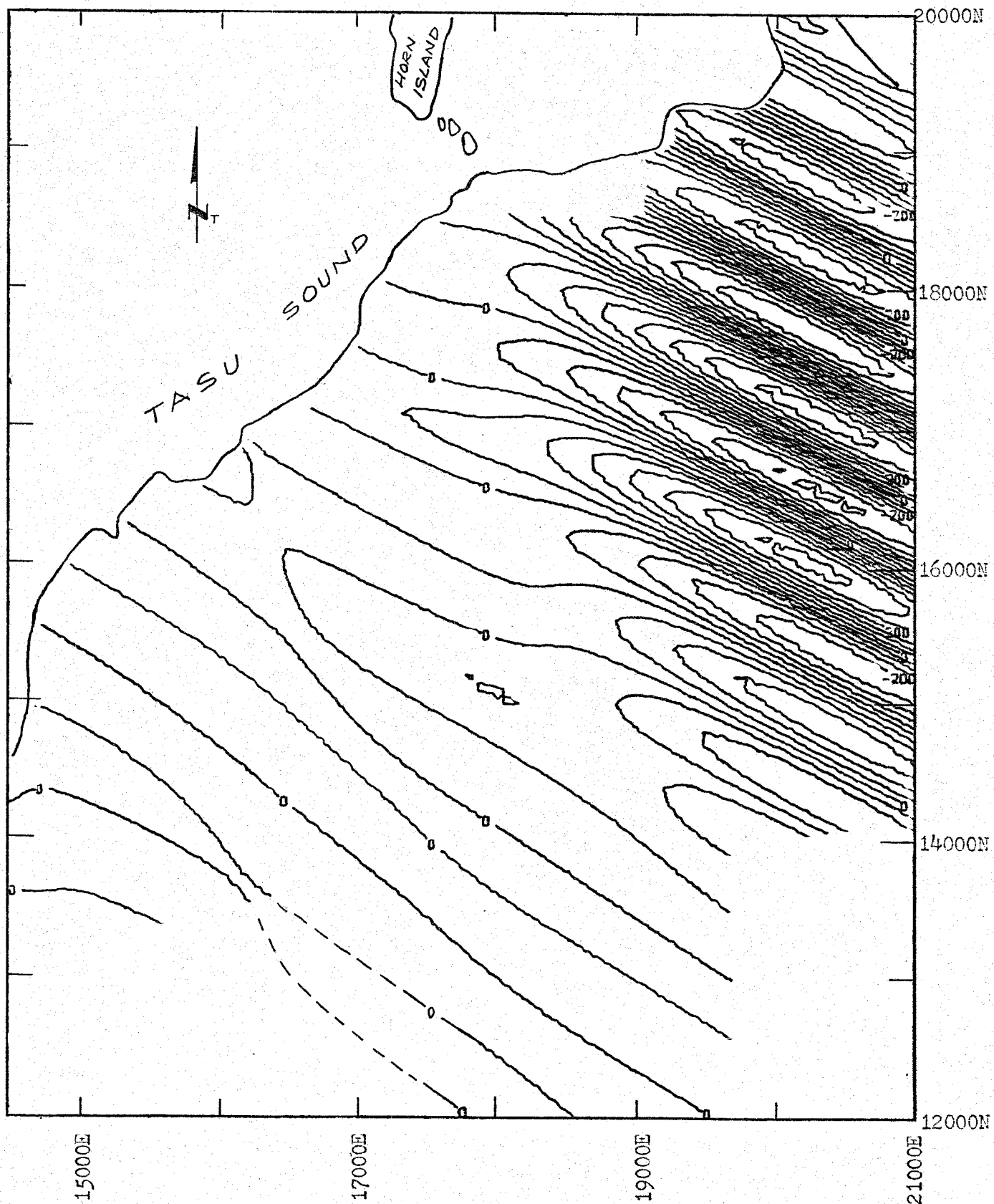


FIGURE 8 OPTIMUM SECOND VERTICAL DERIVATIVE MAP

Contour Interval = 50 gammas/10⁴ ft²

Scale 1" = 1000'



4) Optimum Second Derivative Map (M_{OSD})

The second derivative map amplifies anomalies, it accentuates inflection points and it delineates gradient areas of the magnetic map. When this data is properly interpreted, it aids considerably in outlining the structural features within the survey area. However, in this instant, the magnetite ore zones and their associated anomalies completely overwhelm any cross-cutting structural information. The Optimum Second Derivative Map (M_{OSD}), Figure 8, therefore shows mostly the same information as the M_{ODC} map. It is presented here mainly as a complementary source of information and is considered subordinate to the M_{ODC} map, Figure 7.

When all of the above mentioned 'filtered' maps are considered separately as well as together, it is then possible to detail specific information about the magnetite ore zones as is discussed in the following chapter.

INTERPRETATION OF THE MAGNETIC MAPS

As stated previously, the main objective of this work is to outline specific target zones within the survey area where more magnetite ore deposits are likely to be found. The approach taken here was to squeeze as much information out of the magnetic maps as possible through the filtering process. By comparing these filtered maps with known magnetite

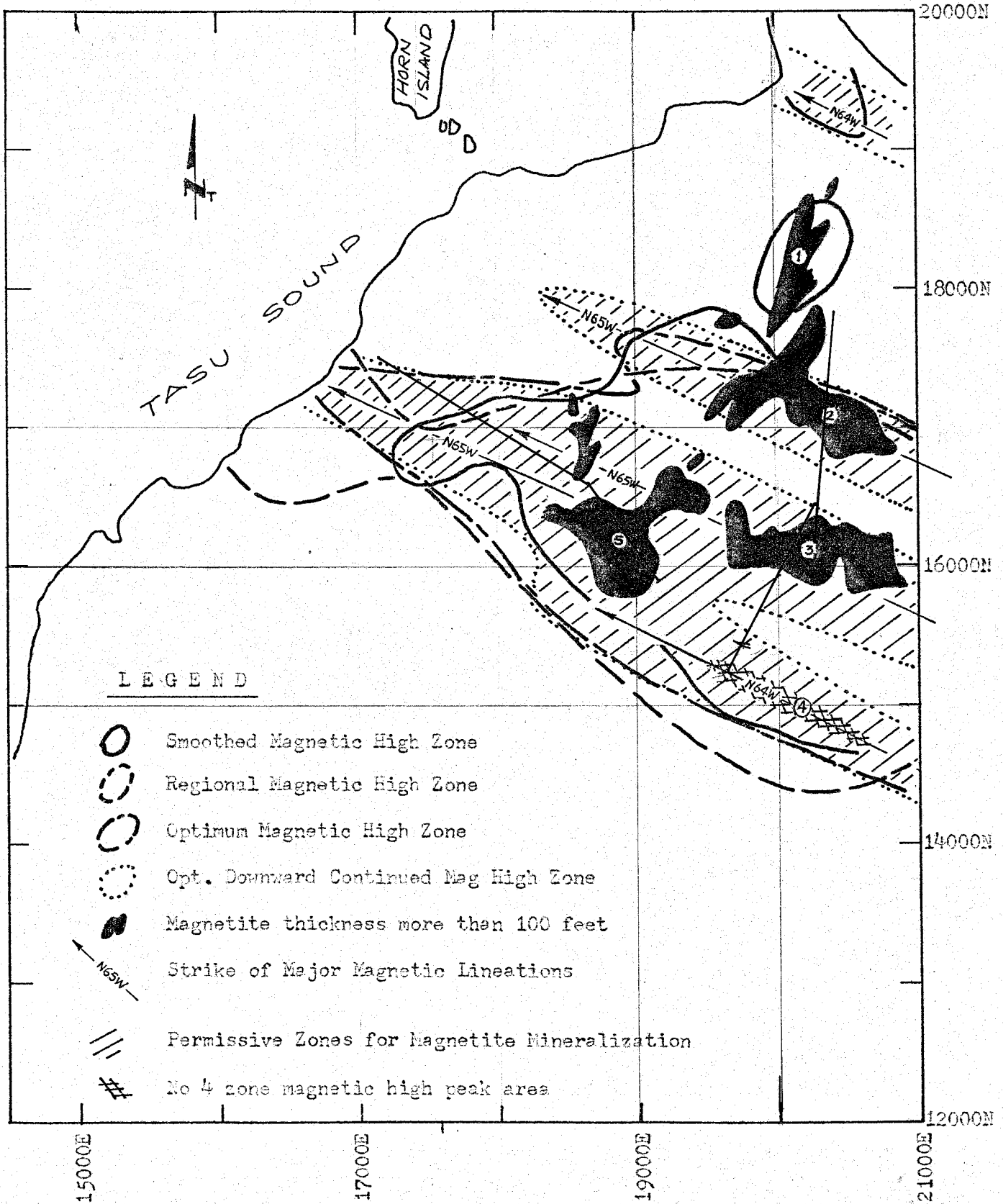
ore bodies, the following interpretation is made (Figure 9):

- 1) The magnetite ore bodies are characterized by magnetic high anomalies. The magnetic low regions of the map are probably caused, in most part, by the dipolar effects of the magnetic high anomalies. As clearly shown on the regional magnetic map, these lows are diagnostic in that they surround or enclose the permissive magnetic high zone. Except for the northern part of zone number 2, no reverse polarization is evident over the main ore bodies. For this reason, all ore deposits of the same age in the Tasu Mine area are expected to exhibit magnetic high anomalies.









- 2) All of the filtered magnetic maps outline, in general, the same boundary to the magnetite mineralization. The smoothed magnetic high anomaly is perhaps the most inclusive in that it surrounds all the known ore zones as shown on Figure 9. The optimum downward continued map is the most definitive in that it selects each of the main ore zones (except for zone 1) within this magnetic high region. And more importantly for this work, the M_{ODC} magnetic high anomalies define the permissive zones where more magnetite ore bodies are likely to be found (Figure 9).

FIGURE 9a MAGNETIC INTERPRETATION MAP

Scale 1" = 1000'



LEGEND

-  Smoothed Magnetic High Zone
-  Regional Magnetic High Zone
-  Optimum Magnetic High Zone
-  Opt. Downward Continued Mag High Zone
-  Magnetite thickness more than 100 feet
-  Strike of Major Magnetic Lineations
-  Permissive Zones for Magnetite Mineralization
-  No. 4 zone magnetic high peak area

- 3) The strike of the magnetite mineralization is shown very clearly on the optimum maps. Except for zone 1, the main magnetic lineations strike about N65W. This strike is taken as the dominant direction for the magnetite ore zones.
- 4) Any new ore bodies are likely to be found within the permissive zone as shown on Figure 9. In particular, there are two main areas within this zone which are considered prime targets. These are the Number 4 Zone extension and the Number 5 Zone extension. Two lesser areas of importance are the northwest extension of Number 2 zone and the small zone centered around (20400E + 19400N). Each of these target areas is discussed in the following paragraphs.
- 5) Number 4 Zone Extension: This is perhaps the zone with the most potential. It is centered at (20000E + 15000N) and strikes N64W toward the southern limits of number 5 zone. As well, it is open to the southeast. The fact that zones 2 and 3 have magnetic high peaks coincident with maximum magnetite thicknesses suggests a similar specific target area for zone 4 (see Figure 9). However, because zone 5 occurs more on the flanks of the M_{ODC} anomaly, the entire permissive region between number 4 and number 5 zones should be considered the prime target area. The fact that the magnetic anomaly broadens toward the northwest suggests that the magnetic source increases in thickness or depth or both in that direction. It is virtually impossible to calculate specific depth

information, however, the possibilities are as follows:

- a) If zone 4 is flat lying and is as thick as zone 5 (150-200'), then it must be at least as deep (800' below surface).
- b) If zone 4 is flat lying and thinner than zone 5 (say, 50-100'), then it must be closer to the surface.
- c) If zone 4 is steeply dipping, then it could be at any depth and would follow the N64W trend axis toward the southern edge of zone 5 as shown on Figure 9.

Although the drilling results favour the (b) interpretation above, there is insufficient evidence to rule out the (a) and (b) interpretations, especially in the permissive area between number 4 and number 5 zones.

- 6) Number 5 Zone Extension: The aeromagnetic map of the mine area does not show any major magnetic high anomalies underlying Tasu Sound to the northwest of zone 5. Therefore, any extensions to zone 5 would have to lie in the permissive region between this zone and the ocean (Figure 9). Particular attention should be placed on the area centered at (17600E + 16900N). It is here that a magnetic high 'nose' exists which could signal the presence of magnetite mineralization. It lies on the trend axis of N65W which relates to the number 5 zone. In fact the zone 3 and zone 5 trend axes appear to converge in this region. It is impossible to estimate any depths to source for this area as the overlap of anomalies is too severe. As well, the geometry of the

source could be flat lying or steeply dipping. In this case, all that the magnetics can say is that this permissive area to the northwest of zone 5 is certainly worthy of detailed attention. If there are more ore bodies to be found in this region, they will lie within the permissive zone, and the best place to start looking is around (17600E + 16900N).

- 7) Number 2 Zone Extension: Of lesser importance, but still significant, is the area to the northwest of the number 2 ore zone. The M_{ODC} map indicates a N65W strike to this ore zone. It is along this strike direction that further ore may likely occur. However, drilling in this area has all but ruled out the economic importance of this number 2 zone extension. For this reason, little importance is placed on this anomaly zone. For the sake of completeness though, the geological and drilling data should be reviewed for this zone as the final blow to its being eliminated entirely.
- 8) (20400E + 19400N) Zone: This small anomaly zone has previously been tested by drilling. Although the author is unaware of the exact nature of the results, this zone appears of limited extent and should be treated in the same way as the number 2 zone extension mentioned above.

RECOMMENDATIONS & CONCLUSIONS

Simply stated, this interpretation of the Tasu Mine area magnetics has resulted in defining two new areas where magnetite ore bodies are likely to occur. These targets are essentially extensions of the previously known mineralized zones 4 and 5. Based on current information, the chances of locating more magnetite mineralization of economic grade within these two zones appears quite good. The odds of finding other magnetite ore deposits anywhere else within the survey area are extremely remote.

Based on the results presented in this report and supported by the geological and drilling data made available to the author, the following is recommended:

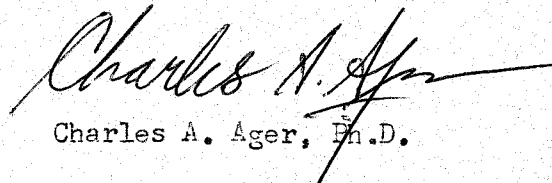
- 1) The number 4 zone extension should be tested by drill holes to the depth of the Smokey Volcanics of the Karmutsen Formation. The holes should be located in the permissive zone between zones 4 and 5 as outlined on Figure 9. Existing geological and drill hole data for this region should be re-evaluated and used as a guide for locating the fill in drill holes recommended here.
- 2) The number 5 zone extension should also be tested by diamond drilling down to the footwall Karmutsen rocks. If not already

done, a hole at (17600E + 16900N) would be particularly diagnostic. Other holes that exist in this permissive area should be re-evaluated and the fill in drilling guided accordingly.

- 3) The existing geological and drilling information should be re-appraised for the zone 2 extension as well as for the anomaly centered at (20400E + 19400N). If this data rules out these zones, then no further work is advised in these areas.

It is the author's opinion that the magnetics have zeroed in on the magnetite ore deposits. Except for the remote (unknown?) possibility of reverse polarization, the ore bodies are characterized by selective and definite magnetic high anomalies. When every part of the permissive zone as given on Figure 9 has been tested, then the extent and limit of magnetite mineralization within the Tasu Mine area will have been discovered. It is towards this goal that the foregoing recommendations for fill in drilling are made.

Respectfully submitted,



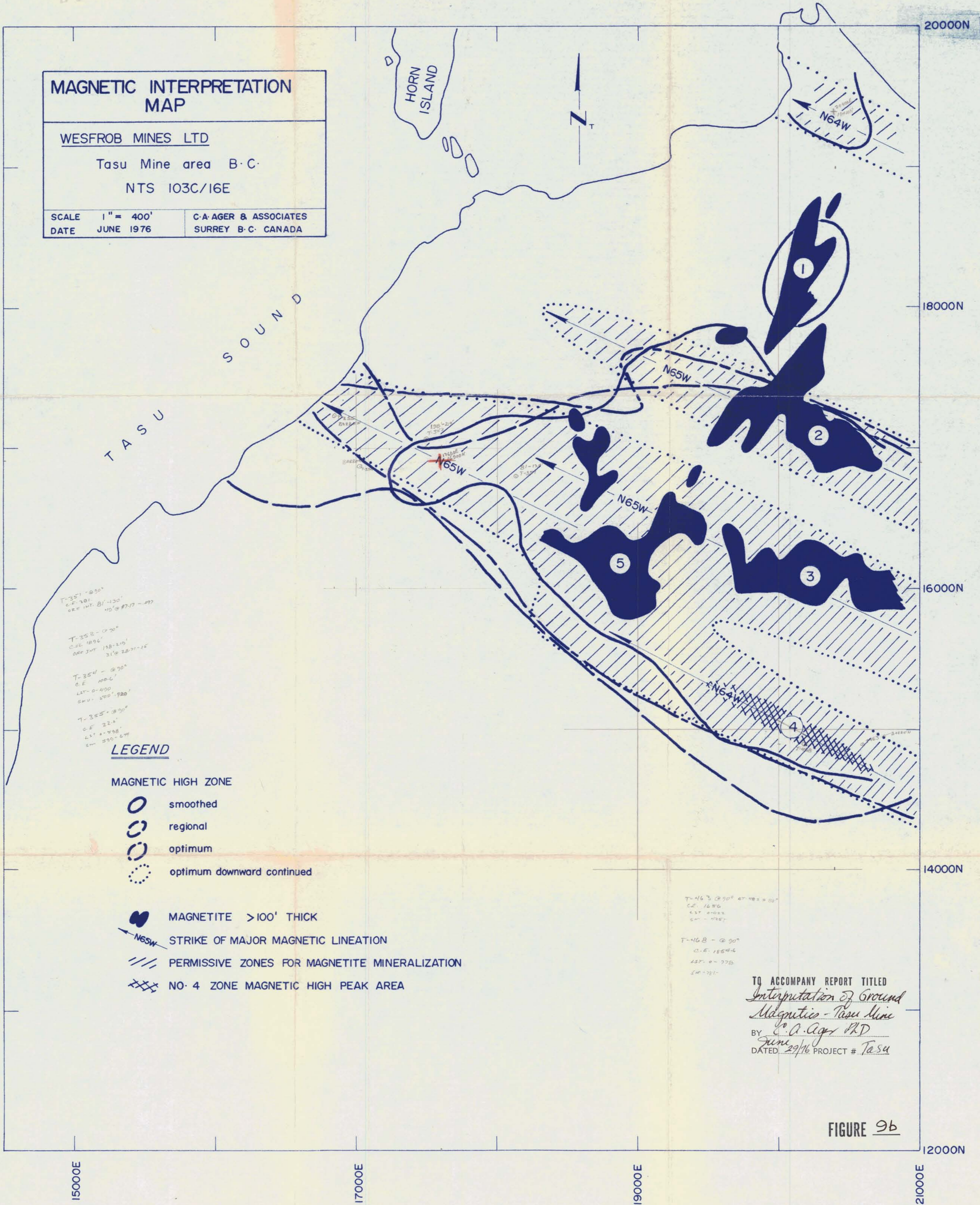
Charles A. Ager, Ph.D.

Geophysicist

June 29, 1976

REFERENCES

Sutherland Brown, A. (1968). Geology of the Queen Charlotte Islands,
British Columbia. BCDM Bulletin Number 54.



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FIGURE 9b

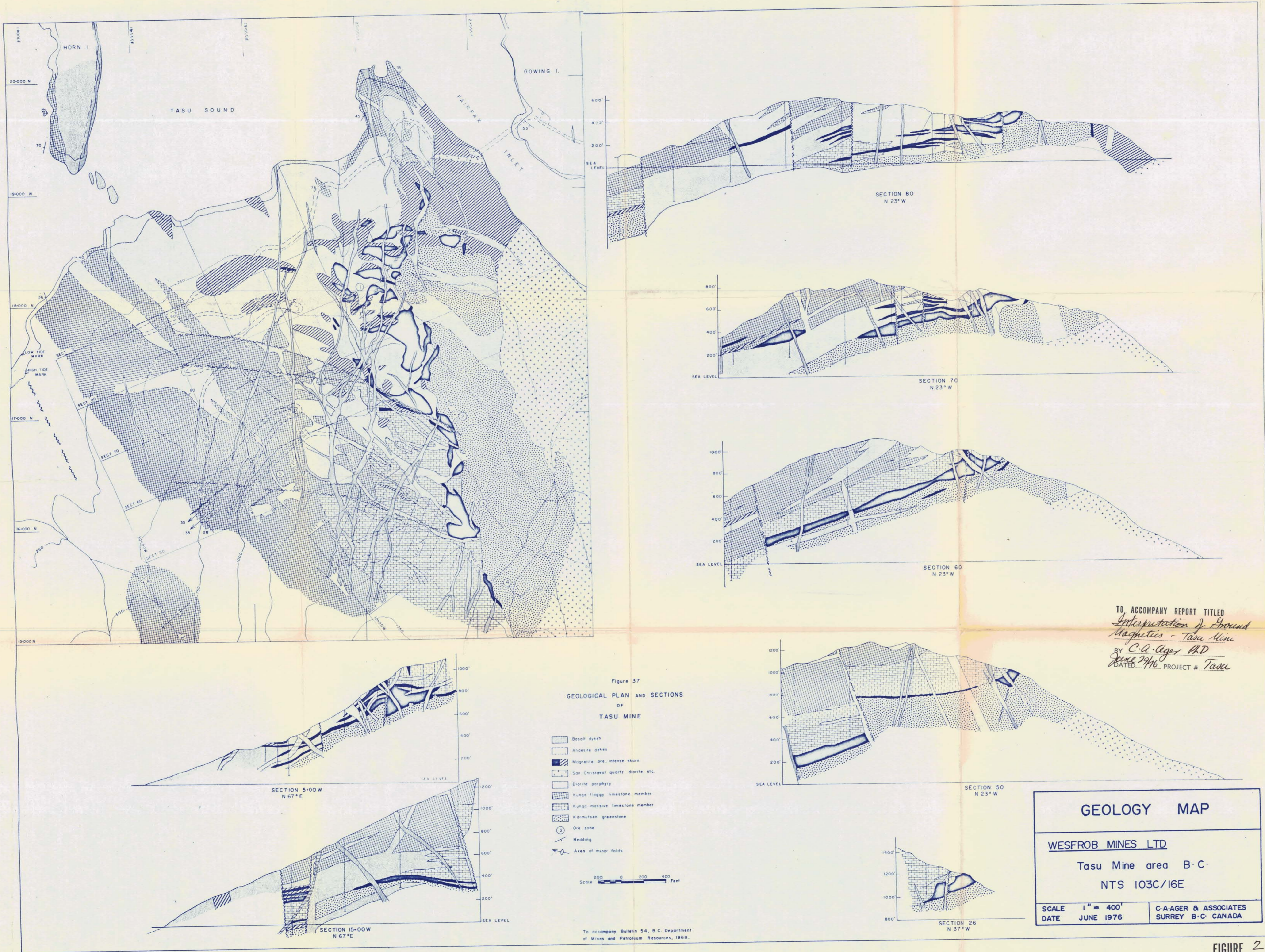


Figure 37
GEOLOGICAL PLAN AND SECTIONS
OF
TASU MINE

- Basalt dykes
- Andesite dykes
- Magnetite ore, intense skarn
- San Christoval quartz, granite etc.
- Diorite porphyry
- Kunga flaggy limestone member
- Kunga massive limestone member
- Karmutsen greenstone
- Ore zone
- Bedding
- Axes of minor folds

Scale 1" = 400' Feet

To accompany Bulletin 54, B.C. Department of Mines and Petroleum Resources, 1968.

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BY *C.A. Ager PhD*
DATED *June 29/76* PROJECT # *Tasu*

GEOLOGY MAP	
WESFROB MINES LTD	
Tasu Mine area B.C.	
NTS 103C/16E	
SCALE 1" = 400'	C-A-AGER & ASSOCIATES
DATE JUNE 1976	SURREY B.C. CANADA

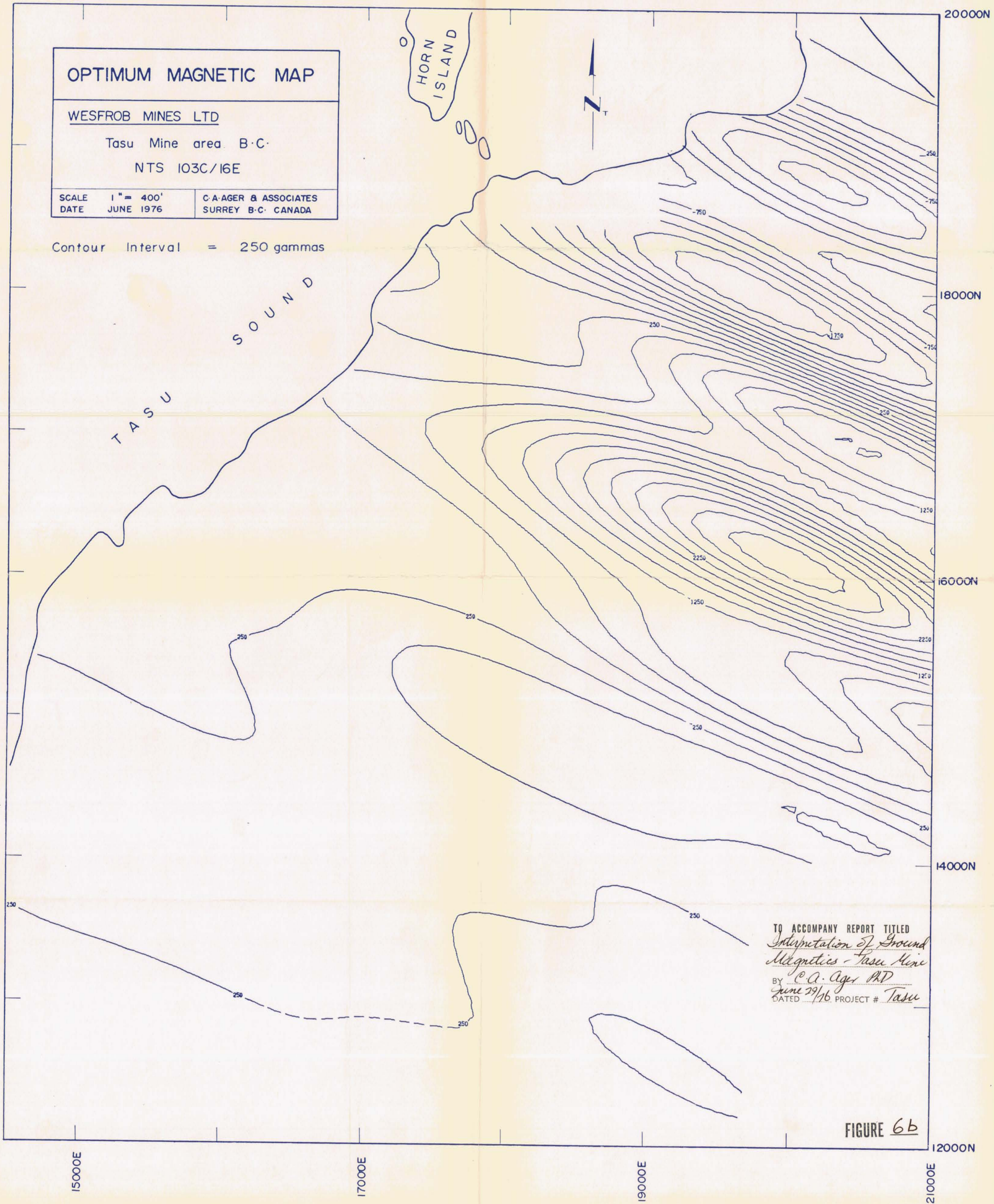
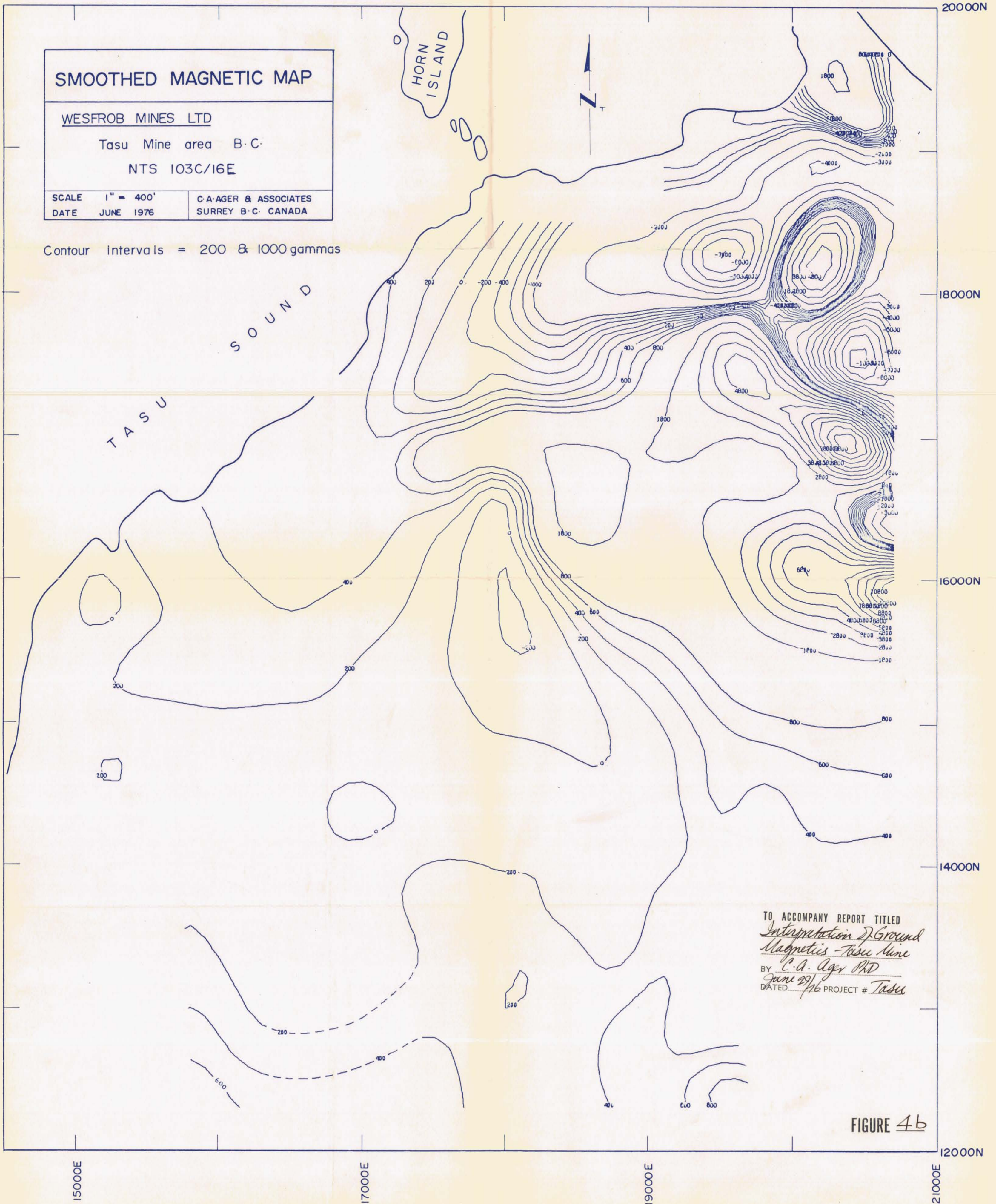
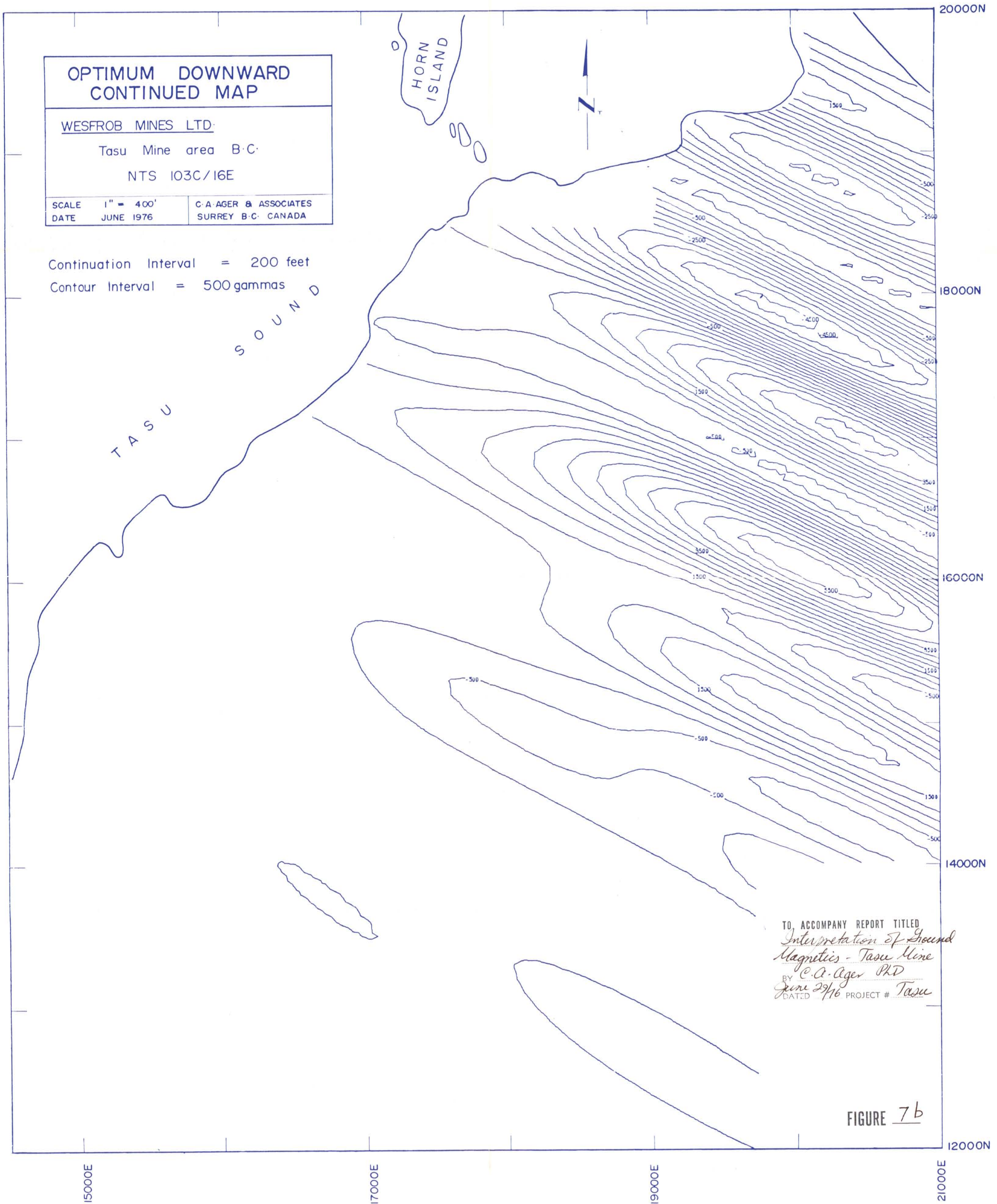


FIGURE 4-3





OPTIMUM DOWNWARD CONTINUED MAP

WESFROB MINES LTD.
Tasu Mine area B.C.
NTS 103C/16E

SCALE	1" = 400'	C.A. AGER & ASSOCIATES
DATE	JUNE 1976	SURREY B.C. CANADA

Continuation Interval = 200 feet
Contour Interval = 500 gammas

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FIGURE 7b