4732

GEOLOGICAL & GEOPHYSICAL REPORT

INEL AND HIHO MINERAL CLAIMS
situated
sixty miles northwest of Stewart
in the
Liard Mining Division
56° 130° N.W.
and owned by
SKYLINE EXPLORATIONS LTD.

Report by: A.O.Birkeland, B.Sc.
Supervised by: R.G.Gifford, P.Eng.
Work by: Texasgulf, Inc.

Field Work: July 3,1973 - September 26,1973

November 30, 1973 Vancouver, B.C.

TABLE OF CONTENTS

ACCOMPANYING MAPS

Fig. 1	Index and Claim Map	1"=3000'	following page 1
2.	Regional Geology	1"=40 mi	following page 2
3.	Geology, Inel Property	1"=1000'	in pocket
4.	Geology, Inel Property	1"=200'	in pocket
5.	General Assay Plan and Index Map	1"=1000'	in pocket
6.	Assay Plan, Central Area	1"=200'	in pocket
7.	Assay Plan, Big Creek Zone	1"=40'	following page 11
8.	Assay Plan, Nunatak Trench	1"=10'	following page 11
9.	Assay Plan, Trenches AB1 to AB3, 78-6	1"=20'	following page 11
10.	Magnetometer Survey	1"=200'	in pocket
11.	Vertical Loop EM Survey	1"=200'	in pocket
12.	EM Detail, Conductor L-5W/11+75S	1"=200'	in pocket
13.	Topographic Base Map - East Half	1"=200'	in pocket
14.	Topographic Base Map - West Half	1"=200'	in pocket
15.	Orthophoto Base Map	1"=1000'	in pocket

GEOLOGICAL & GEOPHYSICAL REPORT
INEL & HIHO MINERAL CLAIMS
Liard Mining Division, 56°130°NW

SUMMARY

The Inel property held by Skyline Explorations Ltd. consists of 82 full size mineral claims located 60 miles northwest of Stewart, British Columbia.

Acid and intermediate volcanic rocks underlie the area of interest within the claim group. Most rocks within the map area have been dolomitized and sericitized.

Gold, zinc, and copper are associated with pyritic lodes over a significant portion of the property. Concordant cleavage development and a crosscutting fracture zone form two important mineralization controls on the property.

Suggestion of economic grades, coupled with favorable geologic conditions, justifies further exploration.

GEOLOGICAL & GEOPHYSICAL REPORT
INEL & HIHO MINERAL CLAIMS

INTRODUCTION

The Inel and Hiho mineral claims cover a gold, copper and [illegible] prospect situated in the northwestern part of British Columbia (Fig. 2, Index Map). Recent geophysical and geological mapping campaigns, accompanied by a surface sampling programme, were carried out by Texasgulf, Inc. to assess the economic potential of this property. The work was performed from the 3rd day of July 1973, to the 26th day of September 1973. The location dates of the claims are September 8, 1971, September 12, 1972 and May 25, 1973 for the Inel 1-60, Inel 61-72, and Hiho claims respectively.

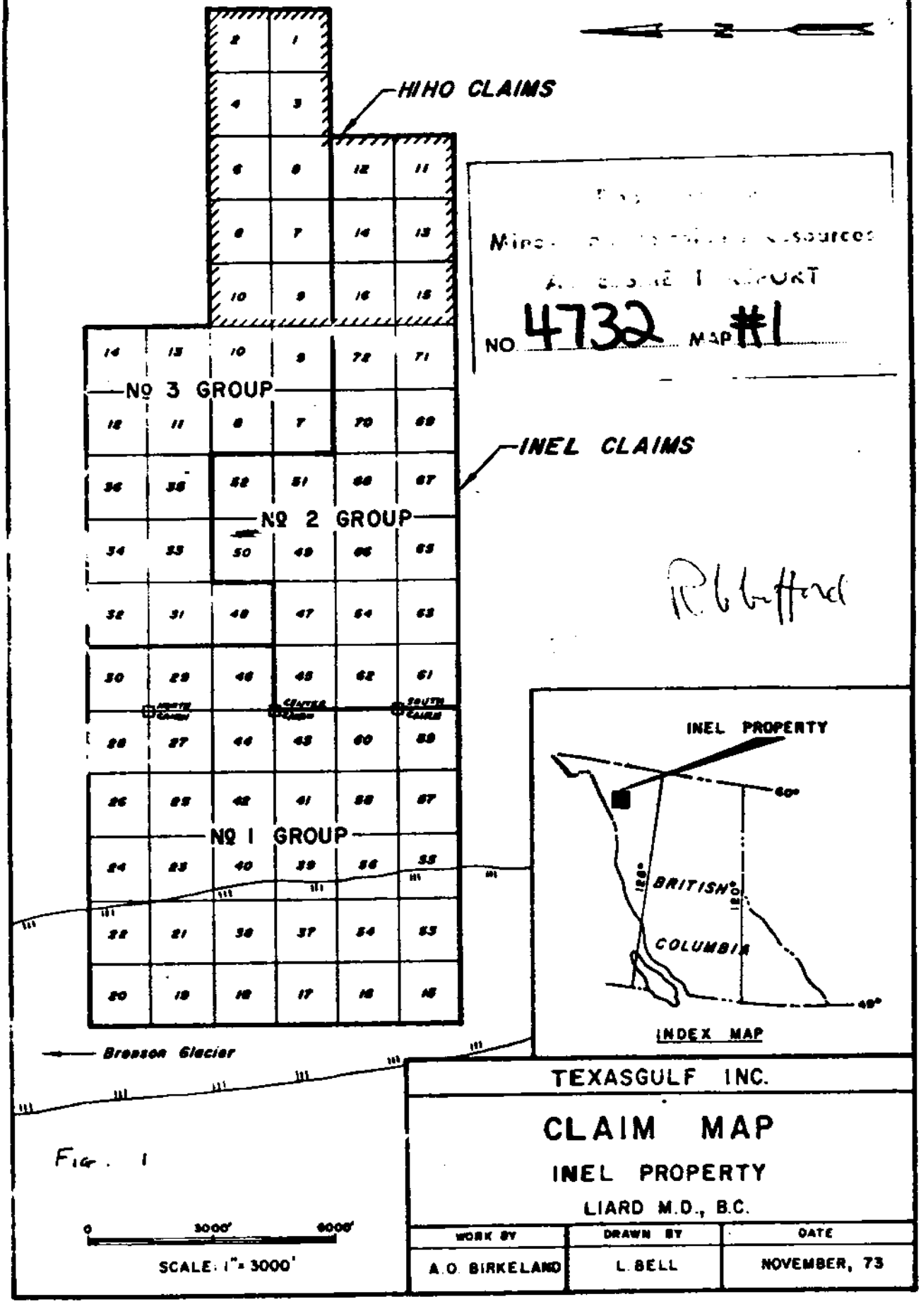
Geologic mapping of the claim group was done at a scale of 1"=1000'. The central portion of the claim group was mapped at 1"=200'. The geophysical programme consisted of electromagnetic and magnetic surveys. A surface sampling campaign consisting of 532 analysis required the removal of 510 cu. yd. of weathered outcrop and overburden.

Talus and snow covers a large part of the map area, and depths of accumulations in excess of 100 feet are likely. Bedrock is exposed on approximately 20% of the claim group. Dangerous terrain, fog, and inclement weather proved a hindrance to all activities.

Acknowledgement is given to R.G.Gifford for his many contributions concerning the preparation of this report.

PROPERTY

The Inel property consists of one block of 82 claims named Inel 71-72 and Hiho 1-16 (Fig. 1, Claim Map). Anniversary dates for



Mines ... Resources

... REPORT

NO. 4732 MAP #1

Fig. 1

TEXASGULF INC.

CLAIM MAP

INEL PROPERTY

LIARD M.D., B.C.

WORK BY	DRAWN BY	DATE
A.O. BIRKELAND	L. BELL	NOVEMBER, 73

the claims fall on October 1st (Inel 7-60), October 11th (Inel 61-72) and June 18th (Hiho 1-16).

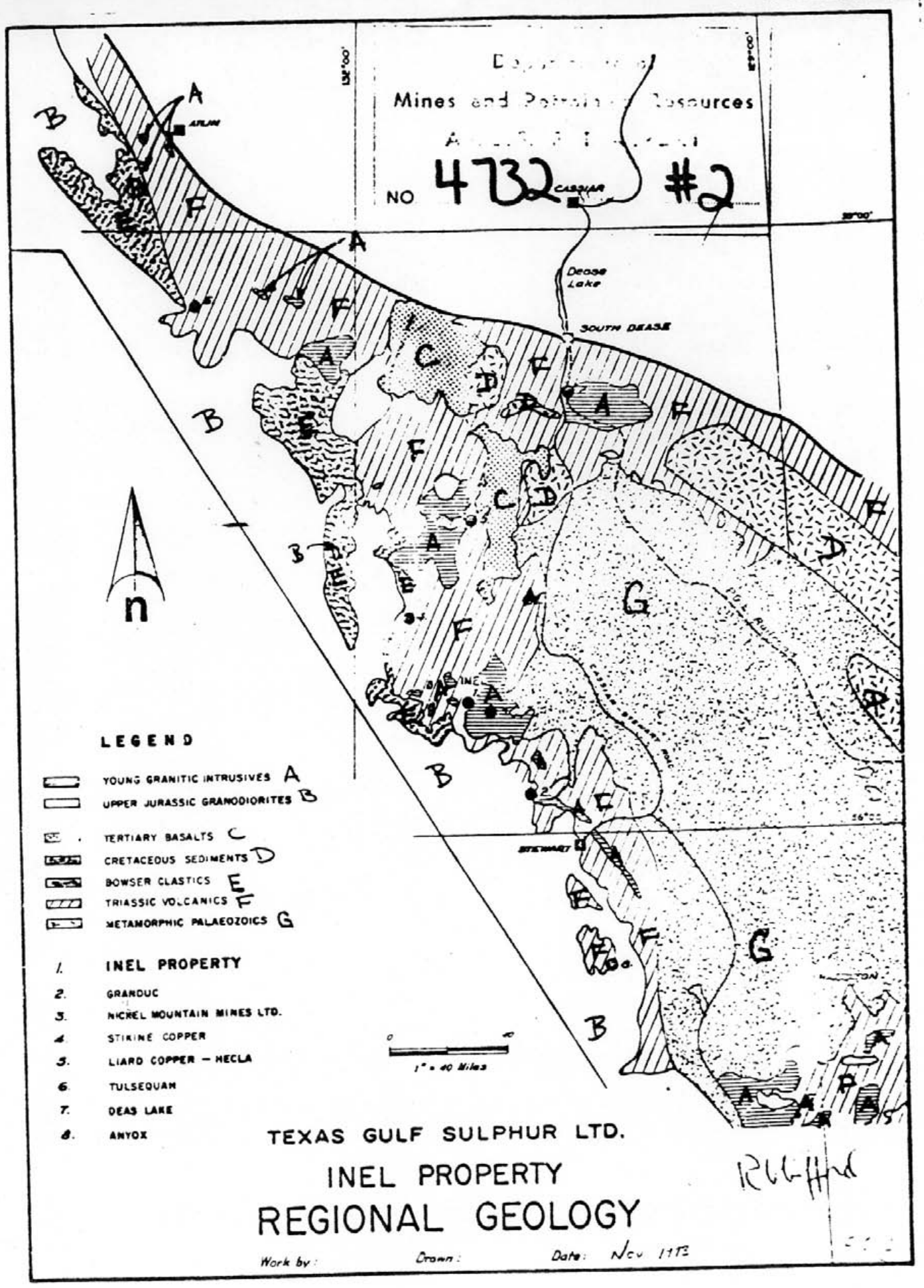
All claims are held by Skyline Explorations Ltd., Vancouver, B.C.

LOCATION

The Inel claim group is located in the Liard Mining Division, British Columbia at latitude 56°36'N, longitude 130°57'W (N.T.S. 104B/10). The elevation of the property ranges from approximately 3,500 feet to 6,500 feet. Water resources are plentiful, but glacial-fed streams predominate and are subject to severe silting and fluctuation in flow. The claims are above timberline, but an abundant supply of merchantable timber can be obtained from the main valleys at lower elevation.

The prospect is south of the confluence of Bronson Creek and Iskut River on the east side of Bronson Glacier. It is accessible by helicopter from a DC-3 airstrip 8 miles to the southeast. The newly completed Terrace-Cassiar highway lies 38 miles to the northeast.

The property lies on the eastern margin of the rugged Coast Mountains, and straddles a sharply-defined ridge within the active zone of glaciation. The relief between valley floor and ridge-line on the claims is approximately 3,000 feet. Optimum conditions for surface work occur in late summer, centered around the period July 15 - September 15.


Mines and Petroleum Resources
NO 4732
#2
ARLIN
CASSIAR
Dease Lake
SOUTH DEASE
INEL
STIKINE
N
LEGEND
YOUNG GRANITIC INTRUSIVES A
UPPER JURASSIC GRANODIORITES B
TERTIARY BASALTS C
CRETACEOUS SEDIMENTS D
BOWSER CLASTICS E
TRIASSIC VOLCANICS F
METAMORPHIC PALAEOZOICS G
1. INEL PROPERTY
2. GRANDUC
3. NICKEL MOUNTAIN MINES LTD.
4. STIKINE COPPER
5. LIARD COPPER – HECLA
6. TULSEQUAH
7. DEASE LAKE
8. ANYOX
1" = 40 Miles
TEXAS GULF SULPHUR LTD.
INEL PROPERTY
REGIONAL GEOLOGY
Work by:
Drawn:
Date: Nov 1972
R66-Hwd

Property Geology

Regional

The Inel property is underlain by volcanic rocks of the Stewart Complex of Upper Triassic/Lower Jurassic age (Fig. 2, Regional Geology). It lies peripheral to the east flank of the Coast Crystalline Belt, which in this sector consists of mainly quartz monzonite with satellitic bodies of syenite and diorite.

Immediately west of the property is a major structural zone along which rust-stained areas and felsitic rocks are conspicuous on a northwestward trend for a distance of 18 miles.

Property

General Geology

The Inel property is underlain by acidic to intermediate fragmental volcanic rocks (Fig. 3 and 4, App.A). An overlying breccia unit, which in turn is overlain by intermediate volcanic tuffs, are the host rocks for the most significant mineralization on the property. The relatively barren hanging wall sector consists of black and grey argillites, marine clastics and pyroclastics.

The predominant rock type of Unit 1 is a massive feldspar porphyry. Variations in pyrite content appear to be functions of the degree of shattering of local zones within the mass. The base of the rhyolite is not observed on the property. Upper contact relations of the rhyolite are highly variable. Structural and alteration imprints commonly mask definition of the contact.

The overlying Breccia unit, Unit 2, may be in part brecciated equivalents of the rhyolite and volcanic tuffs of Unit 1 and Unit 3. Thickness of the unit varies with location. Classification of the breccias is based on fragment nature and composition. Contact relations with Unit 3 are not exposed, but an irregular gradational nature is suspected. Contacts within the unit are fairly well defined and sub-parallel in nature.

The Volcanic Tuffs of Unit 3 have an estimated maximum thickness in the order of 600 feet. The basal clastic members of this unit indicate a quiescent period followed by an intermediate eruptive series. Upper contact relations are difficult to define due to poor exposure and structural complications, particularly in the northern part of the mapped area. The gradational lower contact of the green lapilli tuff (Unit 3d) forms a distinctive marker horizon which enables correlation of stratigraphy across the "Inel Break". Breccia equivalents of the green agglomerate (Unit 3e) occur as fragments in the green tuff breccia (Unit 2d).

A relatively thick sequence of Black Argillite (Unit 4) overlies the breccia and volcanic tuffs of Units 2 and 3 in the southwest sector of the property. Although structural deformation is intense within this unit, the lower contact appears conformable. A suspected facies change from the black argillite of Unit 4 to grey argillite of Unit 5 occurs in the vicinity of the Inel Break.

The Grey Argillites of Unit 5 overlie the volcanic tuffs in the north-central part of the property. Contact relations of this unit are undetermined due to severe internal structural complications.

A thick, flat-lying Marine Sedimentary Sequence (Unit 6) occurs in the south-central part of the property. It is assumed that this sequence conformably overlies the argillite of Unit 4.

A pyroclastic Sequence (Unit 7) forms the height of land through the center of the property. Continuity, structural simplicity and stratigraphic superposition of this unit suggests an unconformable basal contact.

The stratigraphic positioning of the Volcanic Clastics and Grey Argillites of Units 8 and 9 is not defined at this time due to insufficient data.

Intrusions on the property, other than the Coast Crystalline Complex, are relatively local in extent. The Breccia dykes (Unit A) appear limited to the argillites and lapilli tuffs of Units 3c and 3d. Genetically, the occurrence of rhyolite fragments indicates that these are explosion breccia dykes with their roots passing through or confined to a rhyolite body. A Dioritic dyke manifests itself in the southwest and northcentral sectors of the property. Orientation of this dyke is northwest with moderate to steep dips to the southwest. A Quartz Eye Porphyry Dyke is limited to the central part of the property. The occurrence of beta-quartz phenocrysts suggests a moderately high temperature emplacement. An Orthoclase Porphyry mass (Unit D) occurs in the rhyolite and argillite of Units 1a and 3c. Contact relations and the nature of the orthoclase phenocrysts coupled with field relations indicates a metasomatic origin.

Structural Geology

The layered rocks of the property generally strike northerly with moderate dips to the east. In the southern part of the property the sediments are sharply folded and dips to the east steepen. Local asymmetric drag folds with steeply dipping easterly limbs are common. Axial planes of the folds strike northwesterly and the plunge varies from flat to 10 degrees southeast.

Local cleavage patterns, sub-concordant to concordant with respect to bedding, are numerous. Preferred orientation of the cleavage is northerly, with shallow to moderate dips to the east. Best developed is the high density cleavage zone in the argillites and lapilli tuff of Units 3c and 3d in the north-central part of the property. This zone has a length and width in the order of 1200 by 700 feet, and is open to the north. In the southwest sector of the property a 1500x400 foot cleavage zone is moderately developed.

The "Thel Break", or shatter zone, occurs in the central portion of the property. This highly developed shatter-fracture system strikes easterly with steep dips to the south. It has a width up to 1000 feet, and can be traced along strike for 2000 feet and down dip for 1000 feet. The hanging wall zone is characterized by brecciation, alteration, and quartz-sulfide veining. The footwall zone is notable for dolomite fracture filling. Displacement across the zone is minor, but orientation of the sediments shifts from an attitude that is northwest in strike and shallow dipping northward to one of northeast strike and moderate southerly dip.

Bedding plane faults with minor left hand displacements in the order of 5 to 15 feet were seen in limited exposure to accumulate to at least 40 feet overall to the north of the Inel break. A minor block fault with easterly orientation occurs in the southwest portion of the property. No major faults of large displacement were noted in the mapped area.

Alteration

The main alteration assemblages within the mapped area are calc-sericite, ferrodolomite, chlorite-biotite, and felsic. Calc-sericite alteration is pervasive within the rhyolite, breccia, and volcanic tuffs of Units 1,2 and 3. Perrodolomite alteration is widespread within the map area with the exception of the rhyolite of Unit 1. Elsewhere, dolomitic alteration appears to increase in a southerly direction. Intense chlorite-biotite alteration is restricted to the volcanic tuffs of Unit 3. Felsic alteration is centered about the Inel Break.

Economic Geology

General Statement

Important lode mines in the region such as the Tulsequah Chief, Big Bull, Polaris Taku, Premier, and Granduc have features comparable to the Inel prospect. Points of similarity include the controls to mineralization, mineralogy, alteration, and the age and lithology of host rocks. By analogy the Inel has potential for a viable tonnage of economic sulfide mineralization.

Mineralization

Significant mineralization on the Inel property is distributed over an area of 5400 by 3400 feet. The two main styles of mineralization are structurally controlled by concordant cleavage and cross cutting fracture zones respectively.

Of major significance is a zone of stratiform, cleavage-controlled, banded massive sulfide mineralization, with a 200 foot observed length and 600 foot inferred length. Location of the zone is at coordinates 222,500 N and 9,500 E. It ranges from 2 feet to 18 feet in observed thickness. The bounding limits to width are generally masked by covering debris. Pyrite, sphalerite, and minor chalcopyrite are crudely layered within the bands. As presently known, the favorable stratigraphic section containing this zone has a thickness in the order of 800 feet. Judging from certain float and outcrop occurrences there is a reasonable possibility that more than one potentially economic sulfide lode may exist in this section.

Pyrite and minor sphalerite-chalcopyrite sheeting is widespread in most well developed cleavage zones. Erratic gold and silver values accompany massive pyrite-chalcopyrite sheets.

Massive pyrite, sphalerite, and minor chalcopyrite veins, with a quartz-rich guange, are associated with the cross-cutting fracture zones of the Inel Break. Erratic gold values in the veins seem to occur where copper concentrations are greatest. Widths of veins varies from 6 inches to 5 feet. Strike lengths in the order of 400 feet were observed.

Elsewhere on the property minor metal occurrences were noted as follows:

1. Local disseminated zones of weak chalcopyrite and molybdenite are associated with Unit 1 (Rhyolite).
2. Local sphalerite and galena patches occur in Unit C (Quartz Eye Porphyry Dyke).
3. Sphalerite and galena patches are reported in a limestone band contained within Unit 6 (Marine Clastics).
4. Local, weak sphalerite, galena, and chalcopyrite veinlets occur in Unit 8 (Volcanic Clastics) on the eastern portion of the property. Veinlets of a similar nature also occur in Unit 7 (Volcanic Clastics and Tuffs).

Lodes

A surface trenching and sampling campaign required the removal of 510 cubic yards of surface material and the analysis of 532 samples (Figs. 5-9). The best mineralized sections are reported in Table 1.

TABLE 1 - Assay Result Summary

Location	General Description	Best Mineralization within Section	
Big Creek Zone 223,000 N 9,700 E	Massive sulfide band, cleavage controlled sulfide sheeting, stratiform	Trench 73-1	10' of 0.44 oz/ton Au, 5.3% Zn 5' of 0.76 oz/ton Au, 9.7% Zn, .3% Cu, 2.8 oz/ton Ag.
		Trench 73-2	20' of 0.4% Zn
		Trench 73-3	35' of 0.44% Zn
		Trench 73-4	30' of 0.70% Zn
Nunatak 220,000 N 7,700 E	Cleavage controlled sulfide sheeting	Nunatak Trench	55' of 0.63% Zn 10' of 1.55% Zn, 0.037 oz/ton Au.
Trenches AB1-AB3, 73-6 220,800N 6,900E	Sulfide fragments and disseminated sulfide in matrix of breccia	Trench AB-2 Trench AB-3 Trench 73-6	36' of 0.48% Zn 14' of 0.9% Zn 170' of 0.35% Zn.

[illegible]

Independent Fluxgate magnetometer and vertical-loop E.M. prospecting was carried out on the central portion of the claim group.

Readings from a McPhar M-800 Fluxgate magnetometer were taken at 100 foot intervals on a flagged grid. Drift corrected readings are plotted in Figure 10.

Readings from a McPhar RDM Mark VI vertical loop E.M. system [illegible] sulfide technique were taken at 100 foot intervals over 9 lines of the flagged grid. The transmitter-receiver separation was approximately 250 to 350 feet. Profiles are plotted in Figures 11 and 12.

Geophysical discussions and conclusions are presented in Appendices B and C.

[illegible]

The Thel property offers scope for further exploration as evidenced by extensive sulfide mineralization, existence of important values in gold, zinc, and copper, and potential for viable tonnage.

Diamond drill testing of favorable zones is warranted. Principle targets are defined as follows:

1. The major sulfide band to determine its extent and to test for other bands of a similar nature within this zone. This is the prime target for testing.
2. The intersection of the concordant cleavage zone and the cross-cutting fracture zone.
3. The cross-cutting vein system in the proximity of the rhyolite unit.

4. A weak electromagnetic conductor in an area of broad low-grade mineralization on trend of the Inel Break. Location of this target within a broad fold apex in proximity to limited high-grade warping provides further argument for testing in this area.

A.O.Birkeland

AOB/pc

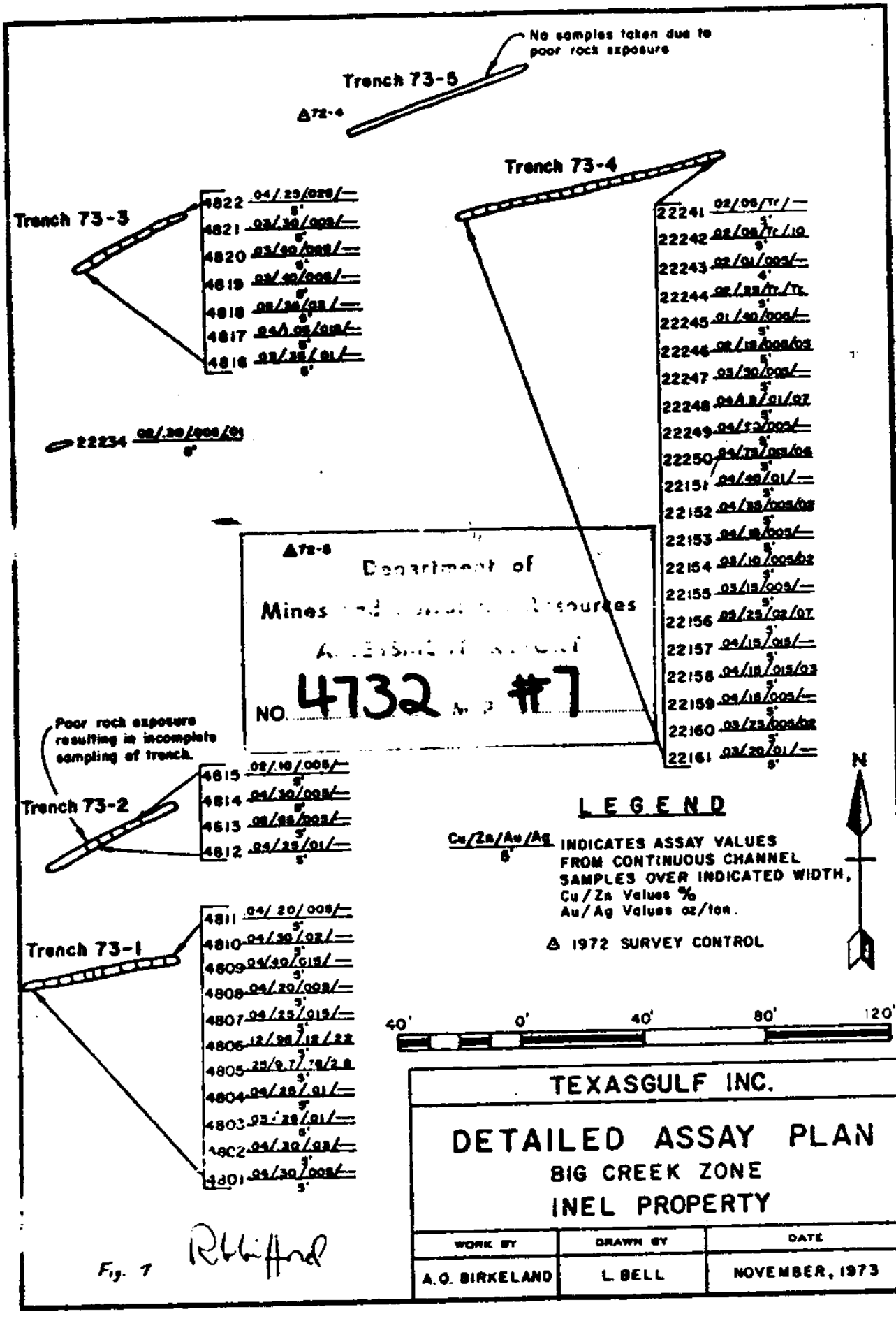
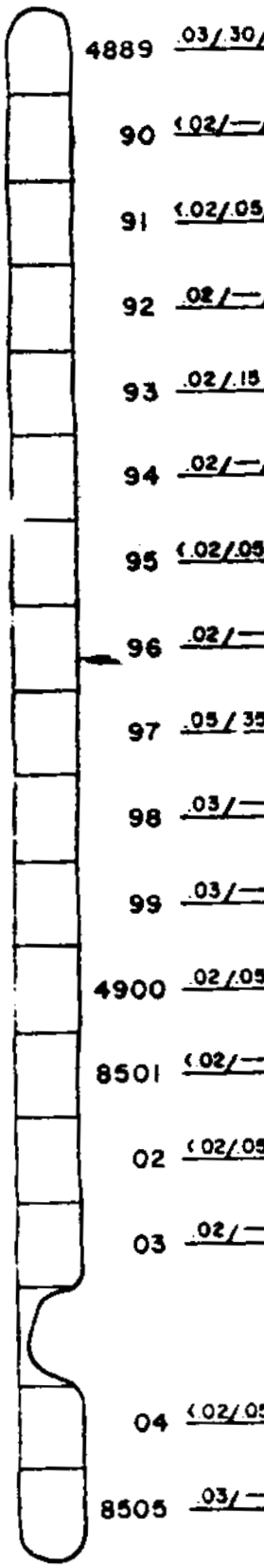


Fig. 7 RHifford



4889 .03/.30/1.05/.005/.30 5'
90 <.02/—/.35/.005/— 5'
91 <.02/.05/.16/.005/.02 5'
92 .02/—/.3/.005/— 5'
93 .02/.15/.45/.005/.02 5'
94 .02/—/.60/.005/— 5'
95 <.02/.05/.15/.01/.02 5'
96 .02/—/.55/.015/.04 5'
97 .05/.35/1.40/.025/.05 5'
98 .03/—/1.70/.05/.34 5'
99 .03/—/.40/.005/— 5'
4900 .02/.05/.10/.01/.02 5'
8501 <.02/—/.05/.015/— 5'
02 <.02/.05/.05/.02/.04 5'
03 .02/—/.05/.01/— 5'
04 <.02/.05/.05/.01/.02 5'
8505 .03/—/.70/.01/— 5'

N

LEGEND

Cu/Pb/Zn/Au/Ag 5' Indicates assay result from continuous channel over indicated width, Cu, Zn, and Pb values %, Au and Ag values oz/ton.

Department of
[illegible]
NO 4732 #8

DETAILED ASSAY PLAN

NUNATAK TRENCH

INEL PROPERTY

A.O. BIRKELAND / NOV., 1973

SCALE 1"=10'

R Blafford

Fig. 8

L.B.

Mines ices

ACCESSION NO. 4732 #9

DETAILED ASSAY PLAN

TRENCHES AB1 to AB3, 73-6

INEL PROPERTY

A.O. BIRKELAND / NOV., 1973

SCALE 1"=20'.

Rights

TRENCH 73-6

TRENCH AB-1

TRENCH AB-2

TRENCH AB-3

LEGEND

Cu/Zn/[redacted]/Au/Ag 5'

Indicates assay result from continuous channel over indicated width, Cu, Zn, [redacted] values %, Au and Ag values oz/ton.

Fig. 9

L.B.

APPENDIX A

Description of Rock Units

APPENDIX A - Description of Rock Units

INTRUSIVES

D: Breccia Dykes - Dark grey, angular grey rhyolite breccia, fragments variate to 2 inches, chloritic pyritic matrix; banded pyrite, chalcopyrite, sphalerite bands at dyke hangingwall contact (average thickness ¼ to 2 inches); average dyke thickness 6 inches to 2 feet.

T: Dioritic Dykes - Dark grey, fine to medium-grained, dense, blocky fracture, chilled border zones; average dyke thickness 1 foot.

C: Quartz Eye Porphyry Dyke - Light grey, siliceous dyke, porphyritic phaneritic, beta-quartz eye phenocrysts, frequent block faults of 5 to 10 feet displacement; "patchy" galena common; average dyke thickness 10 feet.

K: Orthoclase Porphyry - Dark green-grey, porphyritic, tabular orthoclase phenocrysts in a feldspathic-sericite-carbonate matrix, syenite in overall composition; dyke sill-like masses with irregular gradational contacts, resistant to weathering.

I: Coast Intrusive - Mottled cream, hypidiomorphic granular, coarse-grained, quartz monzonite; massive and resistant; similar in variety to the Ryder Batholith quartz monzonite.

VOLCANICS

Unit R: Rhyolite - undivided

Unit Rd: Grey Rhyolite - Light grey-green, porphyritic phaneritic, medium-grained, local crowded texture, rhyolite

to rhyolite in composition, accessory pyrite, sericite alteration, massive, blocky fracture, resistant and knoll forming, high level intrusive or extrusive.

Unit 1b: Pyritic Rhyolite - As in Unit 1a but rusty weathering, accessory pyrite 1-10%, platy fracture, recessive weathering. This is a highly shattered rock as compared to Unit 1a.

Unit 1c: Altered Pyritic Rhyolite Breccia - Light rusty-yellow in weathered outcrop, light grey fresh, various sized breccia fragments of 1b and 1c, pyritic siliceous matrix (occasional occurrences of massive pyrite matrix), intense sericite alteration, platy fracture and shear zones common. Shattering to the point of rotating fragments is characteristic of this unit.

Unit 2: Breccia - undivided

Unit 2a: Grey green tuff-chert breccia - various sized subrounded to subangular green fine-grained tuff blocks, light grey subangular fine-grained tuff blocks, light colored sub-angular pebble-sized chert fragments, in a grey fine-grained matrix, locally dolomitic; massive, resistant and knoll forming.

Unit 2b: Dark green chert breccia - Light grey, sub-angular pebble sized chert fragments in a dark green, fine-grained, dense, hard matrix, poorly developed blocky fracture; resistant and knoll forming.

Unit 2a: Grey tuff - rhyolite-chert breccia - breccia fragments consisting of: brown, fine-grained, subangular, 3-foot blocks of dolomitic tuff; green, fine-grained, 6-inch blocks of chloritic dolomitic tuff; grey, fine-grained, 3-inch angular rhyolite fragments; cream colored, aphanitic, small angular chert fragments: set in a grey, fine-grained, moderately soft matrix; local cleavage fracture planes mineralized with discontinuous sheets of sulfide material; as a whole massive, resistant and knoll forming.

Unit 2d: Green tuff breccia - green, fine-grained, angular 6-inch blocks of chloritic tuff in a green, fine-grained, hard matrix, local alteration assemblages of chlorite, dolomite, and epidote; massive, resistant, knoll forming.

Unit 2c: Dolomitic chert conglomerate - cream to grey, aphanitic, rounded chert pebbles in a light green, moderately soft, fine-grained matrix, locally dolomitic; moderately resistant.

Unit 2b: Dolomitic siliceous breccia - brown, intensely dolomitized breccia; sulfide mineralization in discontinuous sheets associated with a well developed undulating cleavage pattern; recessive weathering.

Unit 2: Dolomitic tuffs - undivided

Unit 1a: Grey brown dolomitic reworked tuffs - grey brown, fine to medium-grained, thinly bedded, graded bedding, local intense dolomitic alteration; well developed concordant cleavage, moderately recessive weathering; probably a volcanically derived siltite.

Unit 7b: Grey tuffs and clastics - undivided dense green tuffs and grey thinly bedded volcanic clastics.

Unit 6c: Grey thin bedded argillite - rusty weathering in outcrop, alternating light and dark grey beds in fresh specimen, very fine to fine-grained, laminated to thinly bedded, local intense alteration assemblages of sericite, chlorite, and dolomite, intense semi-concordant local cleavage development with associated pyrite sheeting; local quartz-sulfide veins associated with a steeply south dipping east-west fracture system; recessive weathering; parent material probably volcanic in origin.

Unit 6b: Green lapilli tuff - dark green, hard, dense, pyritic, gradational footwall contact, local intense alteration assemblages of sericite, chlorite, and dolomite; east-west fracture system containing quartz sulfide veins, local intense semi-concordant cleavage development with associated lensatic quartz sheeting; resistant and ledge forming.

Unit 6a: Green tuffs and green agglomerate - dark green, dense, hard tuffs, interbedded dark green agglomerate, local intense chlorite and epidote alteration; agglomerate resistant and ledge forming.

Unit 5: Brown dolomitic tuffs - brown, fine-grained tuffs of dacite to andesite composition, uniformly dolomitized, local carbonate and silica alteration; resistant and cliff forming.

Unit 7: Grey siliceous tuffs - grey, fine-grained, hard siliceous tuff, local "Patchy" carbonate alteration common; resistant and ledge former.

Unit 6: Black Argillite -

Black, laminated to thinly bedded, flaggy, weakly dolomitic, concordant cleavage generally well developed, local asymmetrical folding common; recessive weathering.

Unit 5: Grey Argillite

Grey, thinly bedded argillites with minor intercalated chloritic tuffs, chlorite-dolomite alteration common; shattered, structurally complex, very well developed cleavage, local folding and faulting; recessive weathering.

Unit 4: Clastic Sediments

Light grey thinly bedded argillites and siltites; a massive, thick marine sequence, contains a 10-foot thick limestone band with minor patchy galena and sphalerite; moderately resistant.

Unit 3: Clastic Sediments and Tuffs

Grey and brown fine to medium-grained thinly (graded) bedded waterworth tuffs and intercalated green pyroclastic tuffs of intermediate composition; very resistant, forms height of land.

Unit 2: Clastic Sediments - undivided

Mixed volcanically-derived greywacke, siltites, and argillites, moderately recessive weathering.

Unit 9: Grey Argillite - undivided

Grey thinly bedded locally folded greywackes, argillites, siltites and quartzites.

APPENDIX B

Geophysical Report

Reference: Figures 10,11 and 12

Texasgulf memo

Date 13 September 1973

To Mr. G. Podolsky Location Toronto

From B. Boonstra Location Vancouver

Subject Magnetics

Almost all magnetic data has been properly corrected and plotted with the exceptions being B.L.E.W. and L15N from 0 down to L4W which are uncorrected profiles.

The overall precision of survey is quite good considering snow, ice and talus covers extensive parts of the grid area. The data is characteristically quite flat ± 200 with most readings falling within a 200 gamma range. There is a noteable magnetic high just east of camp showing a NE-SW trend. The magnitude of this anomaly is about 400 gammas above background. It is probable that this magnetic feature is caused by some particular geologic unit.

Some lines have been extended subsequent to the initial reading with the mag; hence coverage for the entire grid is not complete. Not quite all the magnetic data has been plotted, for example: Base Line 00 was run a second time with stations 25' apart. The data is superfluous and yields no new information other than that given by the numbers already plotted.

Most lines have been read with 50 foot station separations. Numbers plotted below the line are for mag readings taken at mid-points between pickets or flags.

R.E.M. Data

The grid coverage is not complete because of extremely difficult and sometimes dangerous terrain conditions. In certain instances lines have been run more than once to improve otherwise doubtful data quality. Profiles are plotted looking west with south dips plotted above the line. I personally feel that dip angles of 4° or less must be ignored from an interpretational standpoint because of possible orientation difficulties and terrain effect. The data plotted is good quality and a number of easily detectable features can be noted. Line 45 west (near the glacier) shows a good cross-over at 11+75S as well as indications of a possible multiconductor situation further north. A fixed transmitter set-up was employed on the conductor axis at 11+75'S and the data for this detail work has been plotted on a separate sheet. This conductor has been traced over a distance of more than 300 feet and marked on the ground. The results plotted on lines 4E and 8E between 16S and 21S lie approximately within the Inel break and are of considerable geologic interest. Some east-west orientation lines were run with close spacing over mineralized showings (pyrite veins with sphalerite) but no geophysical response was obtained.

Radem

The Radem work has been essentially unsuccessful because of low signal levels and wide nulls. I found that the dips were

controlled at least to some extent by topography and tended to be steeper in areas of steeper slopes. The original data has been included.

Low background resistivities (i.e. high relative conductivity) may have limited the successfulness of E.M. methods in prospecting for massive sulfides at any depth.

Respectfully submitted

B. Boonstra

BB/js

APPENDIX C

Supplementary Geophysical Report

Texasgulf memo

Date October 5, 1973.

To J. M. Newell — Location Vancouver

From George Podolsky — Location Toronto

Subject INEL GEOPHYSICS

The geophysical test and reconnaissance work within the INEL Option has been adequately reviewed in Boonstra's memo to the writer of September 13, 1973. However, some comments, based on the writers' own observations and ideas, may be appropriate before any additional geophysical work is planned.

Virtually all geophysical tests on the INEL Option area suggest that the area has little or no geophysical expression. The exception appears to have been the one line of I.P. run uphill from the camp - in the vicinity of Line 15 North - which showed a fairly high chargeability background (about 40 milliseconds) along with two or three anomalies of about two times background. In light of the high sulphide content - mainly pyrite - of some of the rhyolitic rock observed in the area of the base camp, one could readily justify this type of I.P. response.

MAGNETICS:

The one prominent magnetic feature to the East of the Base Camp may represent a small plug of basic rock, probably no more than 600 feet in length and 200 feet in width. This 400 gamma mag high lies along an apparent North-South mag trend which may be real. Other apparent mag trends tend to lie along the direction of the North-South traverse lines and though these too may be valid, one would have to suspect readings errors due to misties or problems inherent in the instrument (fluxgate magnetometers are very prone to heading errors - i.e., errors due to instrument orientation). For this reason, the only magnetic feature of consequence is the one to the East of the Base Camp and though the grid spacing is rather coarse, the writer doubts that this magnetic high is any more extensive than has been indicated.

ELECTROMAGNETICS:

Electromagnetic surveys, of any coil configuration, conducted over the type of steep sloping terrain as within the INEL grid, are highly prone to errors caused by coil misorientations. Provided certain care is exercised and

line of sight can be maintained over most of the traverse, broadside, vertical-loop E-M results can be quite reliable. There is some doubt as to the validity of the results on Lines 4E and 8E - these anomalous dips are suggestive of misorientation especially in this area where the slope is particularly steep - but otherwise the readings appear to be valid. The two significant anomalous sections along Line 45W mentioned by Boonstra (i.e., at 0±150' and at 12S) appear to lie along the extensions of two weak, East-West trending conductors. These conductors run from 8S on Line 13W to 10S on 26W and from 20S on 13W to 22S on 26W and it is possible that they mark the outside edges of the so-called INEL Break. This is necessarily only speculation on the writer's part as the geologic information pertinent to the area did not accompany Boonstra's memo and results.

CONCLUSIONS:

It is evident that the reconnaissance magnetic and electromagnetic coverage failed to locate any significant anomalous targets; the mag and E-M anomalies which were

located were only of a minor nature and their geologic importance has not been established. Furthermore, it is doubtful that E-M and magnetics can be used effectively for reconnaissance work in this area.

Regarding I.P., extensive ice and snow cover precludes doing I.P. on a reconnaissance basis and the high inherent chargeabilities of the underlying rocks may mislead one in assessing isolated I.P. traverses.

GP:ss

George Podolsky
Chief Geophysicist

APPENDIX D

Statement of Expenditures

TO WIT: | on the Inel and Hiho Mineral Claims, situate on Bronson Creek, in the Liard Mining Division.

I, A. Birkeland, agent for Skyline Explorations Ltd.

of 1177 West Hastings Street, Vancouver 5, B.C.

in the Province of British Columbia. do solemnly declare that during the period July 3rd-September 4th, 197 , I caused assessment work to be done on the Inel and Hiho Mineral Claims, to the value of $33,559.00. The expenses were incurred as follows:

Geological Mapping and Sampling			
A. Birkeland	85 days @ $150	12,750	
H.E. Gosher	62 days @ $130	1,860	
E. Wolle	60 days @ $135	2,100	
R. Allison	13 days @ $20	260	8,470.00
Geophysics			
G. Tomolsky	11 days @ $110	1,210	
B. Boonstra	43 days @ $ 35	1,505	
N. Caron	14 days @ $ 30	420	
W. Carr	11 days @ $ 30	330	3,465.00
P.Eng. Supervision etc.			
R. J. Clifford	7 days @ $ 90	630	630.00
Cook			
C. Birkeland	5 days @ $ 75	1,125	1,125.00
Camp Costs	@ $ 10/man-day		5,510.00
Helicopter Support:	19.1 hours @ $ 160		3,088.00
	6.4 hours @ $250		1,600.00
	64.5 hours @ $150		9,675.00
Assays and Analysis	532 analysis		1,996.00
		Total	**$ 33,559.00**

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Vancouver, in the Province of British Columbia, this 11th day of November, A.D. 1972

SUB-MINING RECORDER

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

APPENDIX E

Statement of Qualifications

STATEMENT OF QUALIFICATIONS

A.G. BLANCHARD, B.Sc., E.I.T. Graduated from the Colorado School of Mines in 1972 with a B.Sc. in Geological Engineering. He has worked with Texasgulf, Inc. since graduation. He has been actively engaged in exploration activities for the past eight field seasons. He is a registered Engineer in Training with the Association of Professional Engineers of British Columbia.

STATEMENT OF QUALIFICATIONS (Cont'd)

D. BOONSTRA, B.Sc. Graduated from U.B.C. in 1973 with a B.Sc. in Geophysics. He has worked for Texasgulf, Inc. since graduation. He has had two previous summer's employment with Texasgulf in various capacities. He is a student member of the Society of Exploration Geophysists.

C. PODOLSKY, Chief Geophysicist for Texasgulf Inc., Exploration Division, is a Registered Professional Engineer in the Province of Ontario. He graduated from Queens University in 1954 with a B.Sc. degree in Engineering Physics. He has practised his profession continuously since graduation and has been employed by Texasgulf Inc. (formerly Texas Gulf Sulphur Company) since 1957.

CERTIFICATION

I, Robert G. Gifford certify that:

1. I am a practising geological engineer with residence at 1238 Aldersida Road, Port Moody, B.C.
2. I am a graduate of the University of British Columbia with a degree of Bachelor of Applied Science.
3. I am a member of the Association of Professional Engineers of British Columbia, and have been engaged continuously in mining and exploration geology for fiteen years.
4. I supervised the evaluation programme for the Inel Claim Group, Liard Mining Division, 60 miles northwest of Stewart, British Columbia in the period from July 3 to September 26, 1975.

R.G.Gifford

R.G.Gifford, P.Eng.