

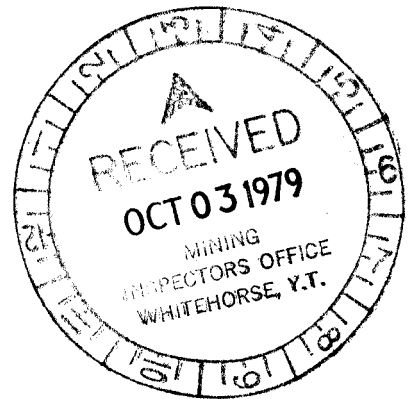
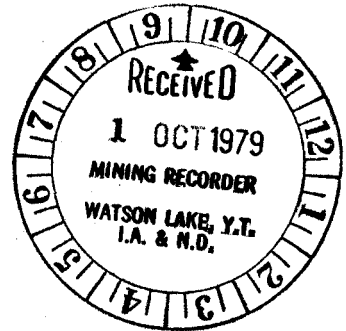


GEOLOGY OF THE LAN GROUP

YUKON TERRITORY QUARTZ MINING CLAIMS YA 34750 to YA 34763

N.T.S. 105 H/1

WATSON LAKE MINING DISTRICT



090494

J. Collins

D. Fletcher

M. Maser

D. Wallster

September 25, 1979

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 42.00

Sammin  
At Resident Geologist or  
Resident Mining Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.

  
B. R. BAXTER

Supervising Mining Recorder

bc Commissioner of Yukon Territory

Asarco Exploration Company of Canada, Ltd. is holder of the Lan Group Claims, LAN 1 - LAN 14. Asarco personnel who performed the assessment work during the period of July 2 - 13 (inclusive), 1979 are:

Mr. J. Collins	)	c/o Asarco Exploration
Mr. D. Fletcher	)	Company of Canada, Ltd.
Mr. D. Wallster	)	#504, 535 Thurlow Street
Mr. R. Watson	)	Vancouver, B. C.
Mr. M. Maser	)	V6E 3L2

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## INTRODUCTION

In 1978, a regional stream sediment geochemical reconnaissance program was conducted in the Hyland River district of the Yukon Territory. The purpose of this project was to define geochemical anomalies in the Selwyn Basin which would hopefully lead to the discovery of a significant ore body similar to deposits such as Howard's Pass, Anniv, Tom-Jason, and Anvil. As a result of this program 14 contiguous claims, the Lan Group (Plate 1), were staked about a multi-element (Cu, Pb, Zn, and Ag) anomaly. Detailed geological mapping and geochemical surveys of the Lan claims and further reconnaissance studies were conducted during July 2 through July 13, 1979.

## LOCATION and ACCESS

The Lan Group (Yukon Territory quartz mining claims YA 34750 to YA 34763) is east of the Hyland River at  $61^{\circ}00'30''$  N latitude and  $128^{\circ}02'$  W longitude (N.T.S. 105 H/1). The only access to the claims is via helicopter from either Watson Lake or the Nahanni Range Road.

## GEOLOGY of the LAN GROUP

Proterozoic (Hadrynian) clastic and carbonate rocks (and their metamorphic equivalents) are intruded by an inhomogeneous Cretaceous batholith and associated cupolas (Plate 2). The intrusive rocks vary from an equigranular granodiorite (?) to a quartz-biotite-feldspar porphyry. Disseminated sulphides (predominantly pyrite and pyrrhotite) occur in some of the intrusive rocks. The intrusion of the batholith caused localized thermal and hydrothermal alteration of the host sediments and also structurally disrupted these country rocks as indicated by variations in strike azimuths and dip attitudes when in close proximity to intrusive rocks.

The clastic (meta-) sedimentary rocks are argillites, hornfelses, and fine- to coarse-crystalline quartzites. Some of the argillaceous rocks are intensely oxidized (iron-stained) and have a gossanous appearance. However they contain little or no relict sulphide and as such are not gossans.

The carbonate (meta-) sedimentary rocks, although widely dispersed, represent 2 thin horizons. Metasomatic alteration of carbonate lenses in close proximity to intrusive rocks has caused skarn mineralisation of two types. The skarn rocks are either of an epidote-diopside-wollastonite alteration assemblage associated with pyrrhotite, galena, and sphalerite (and / or less commonly with chalcopyrite, pyrite, and magnetite) or an epidote-diopside-wollastonite assemblage lacking sulphide mineralogy. At best, sulphide mineralisation is patchy, sporadic, and discontinuous both along strike and down dip. Sulphide mineralisation greater than six inches in width was not observed. Magnetite bands of up to six feet in apparent width were also noted in skarn zones (Plate 3). The mineralised skarn is typically associated with an impure carbonate member that is structurally overlain by a purer, coarse-grained limestone. The sporadic sulphide mineralisation is confined primarily to "skins" of skarned limestone in the immediate vicinity of intrusive rocks. No significant tonnages of carbonate rocks (the primary host of the sulphide minerals) are apparent from the surface investigations conducted.

#### GEOCHEMISTRY of the LAN GROUP

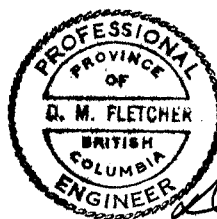
Initial stream sediment reconnaissance indicated a multi-element Cu, Pb, Zn, and Ag anomaly centered on the Lan Group. Further samples were collected (sample locations plotted on Plate 2) to test the validity of the anomaly and to further define its exact location. Geochemical analyses of these samples are listed in Table 1.

Rock geochemical analyses were performed on selected samples (sample locations plotted on Plates 2 and 3). A massive pyrrhotite-galena float boulder (sample 27092) from Curtis Gulch provided the best assay results obtained - .08% Cu, 10.92% Pb, 0.09% Zn, and 23.40 oz/ton Ag. A selected sample of patchy hydrozincite-plumbojarosite-galena (sample DEW S-1) mineralisation from a small (less than 20 inches in width and about 20 feet in length) lens of altered carbonate on the West Ridge assayed .06% Cu, 5.5% Pb, 17.40% Zn, and 1.26 oz/ton Ag. Selected grab samples of other skarn mineralisation assayed:

<u>Sample</u>	<u>% Cu</u>	<u>% Pb</u>	<u>% Zn</u>	<u>oz/ton Ag.</u>
1	.01	.01	.01	.01
2	.96	.02	.58	.26
3	.09	5.82	6.15	1.52
4	.13	1.48	2.04	1.10
5	.27	.04	.01	.01
27076	.06	1.92	1.43	1.25

RECOMMENDATIONS

Sulphide mineralisation is primarily related to altered (skarn) limestone units. As these units are sporadic, discontinuous, and not present in voluminous amounts it is recommended that no further attention is warranted on the Lan Group at this time.



*D. M. Fletcher*



To:

File No. \_\_\_\_\_

Type of Samples Silts

### GEOCHEMICAL ASSAY CERTIFICATE

Disposition \_\_\_\_\_

SAMPLE No.	Cu	Pb	Zn	Ag	W							
5383	78	285	400	.8	2							1
5388	76	295	465	.5								2
5395	70	240	430									3
53145	12	72	148	.2								4
53146	14	105	225	.3								5
53147	62	158	325	.5	2							6
53148	60	150	290	.4	2							7
53152	52	290	585	.5								8
53153	14	74	120	.3								9
53156	82	320	470	.5								10
53157	92	320	520	.7								11
												12
53166	18	86	190	.1								13
53167	52	130	225	.1								14
												15
ML 78 - 57	44	300	585	.4								16
ML 78 - 58	10	114	210	.1								17
ML 78 - 59	32	210	450	.4								18
ML 78 - 60	62	172	275	.5								19
												20
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All reports are the confidential property of clients  
 All results are in PPM.  
 DIGESTION:.....  
 DETERMINATION:.....

DATE SAMPLES RECEIVED \_\_\_\_\_  
 DATE REPORTS MAILED \_\_\_\_\_  
 ASSAYER \_\_\_\_\_

DEAN TOYE, B.Sc.  
 CHIEF CHEMIST  
 CERTIFIED B.C. ASSAYER

TABLE 1



To:

American Smelting & Refining Co.,

504 - 535 Thurlow St.,

Vancouver, B. C. V6E 3L2

File No. 0255

Type of Samples Rocks

Disposition

# ASSAY CERTIFICATE

## Yukon Project

No.	Sample	Cu%	Pb%	Zn%	Ag oz/ton			No.
1	# 1	.01	.01	.01	.01			1
2	2	.96	.02	.58	.26			2
3	3	.09	5.82	6.15	1.52			3
4	4	.13	1.48	2.04	1.10			4
5	# 5	.27	.04	.01	.01			5
6								6
7	DEW S1	.06	5.50	17.40	1.26			7
8								8
9	27092	.08	10.92	.09	23.40			9
10	27076	.06	1.92	1.43	1.25			10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20

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DATE SAMPLES RECEIVED July 16, 1979

DATE REPORTS MAILED July 19, 1979

ASSAYER

*Dean Toy*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER

TABLE 2

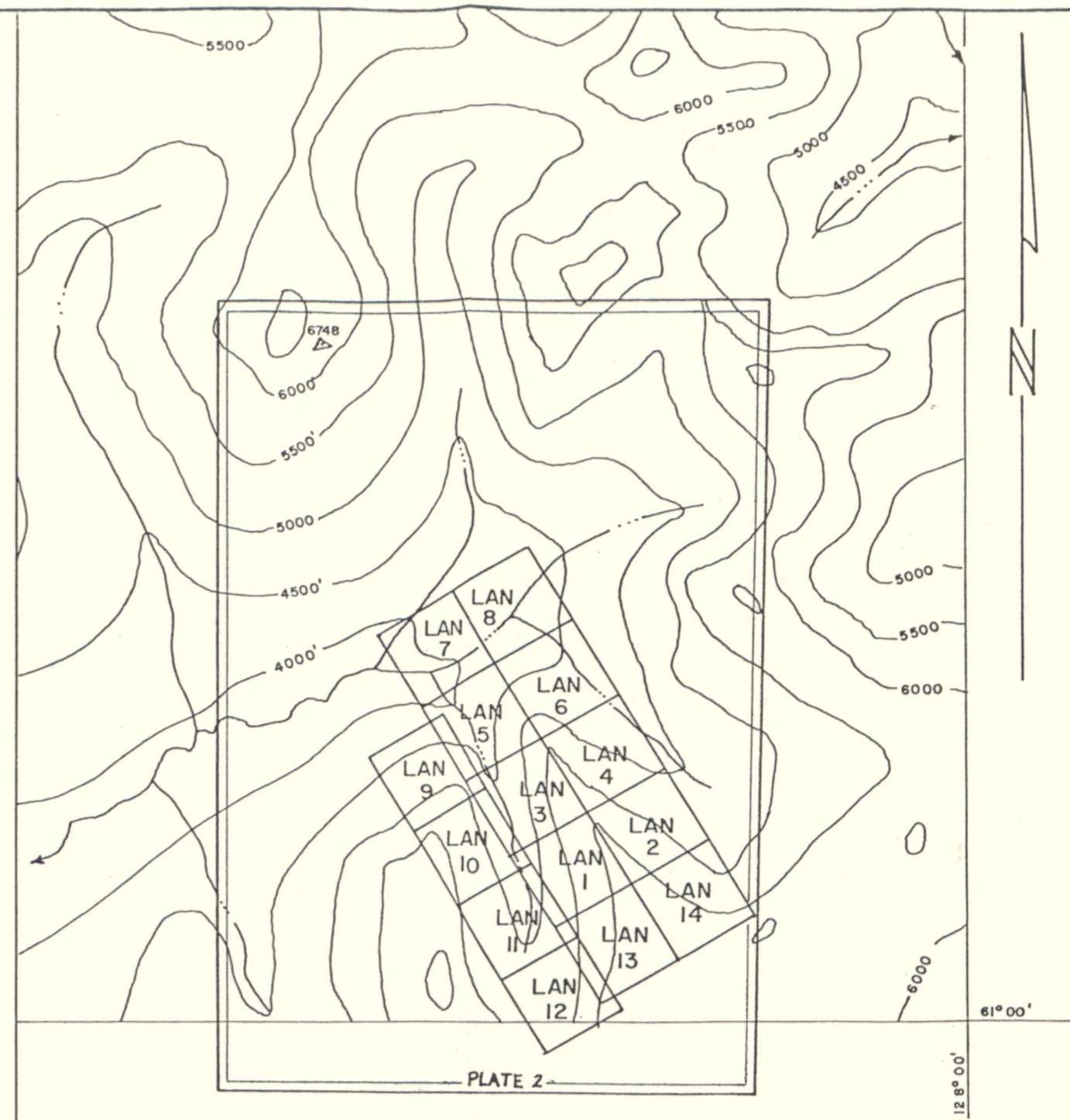
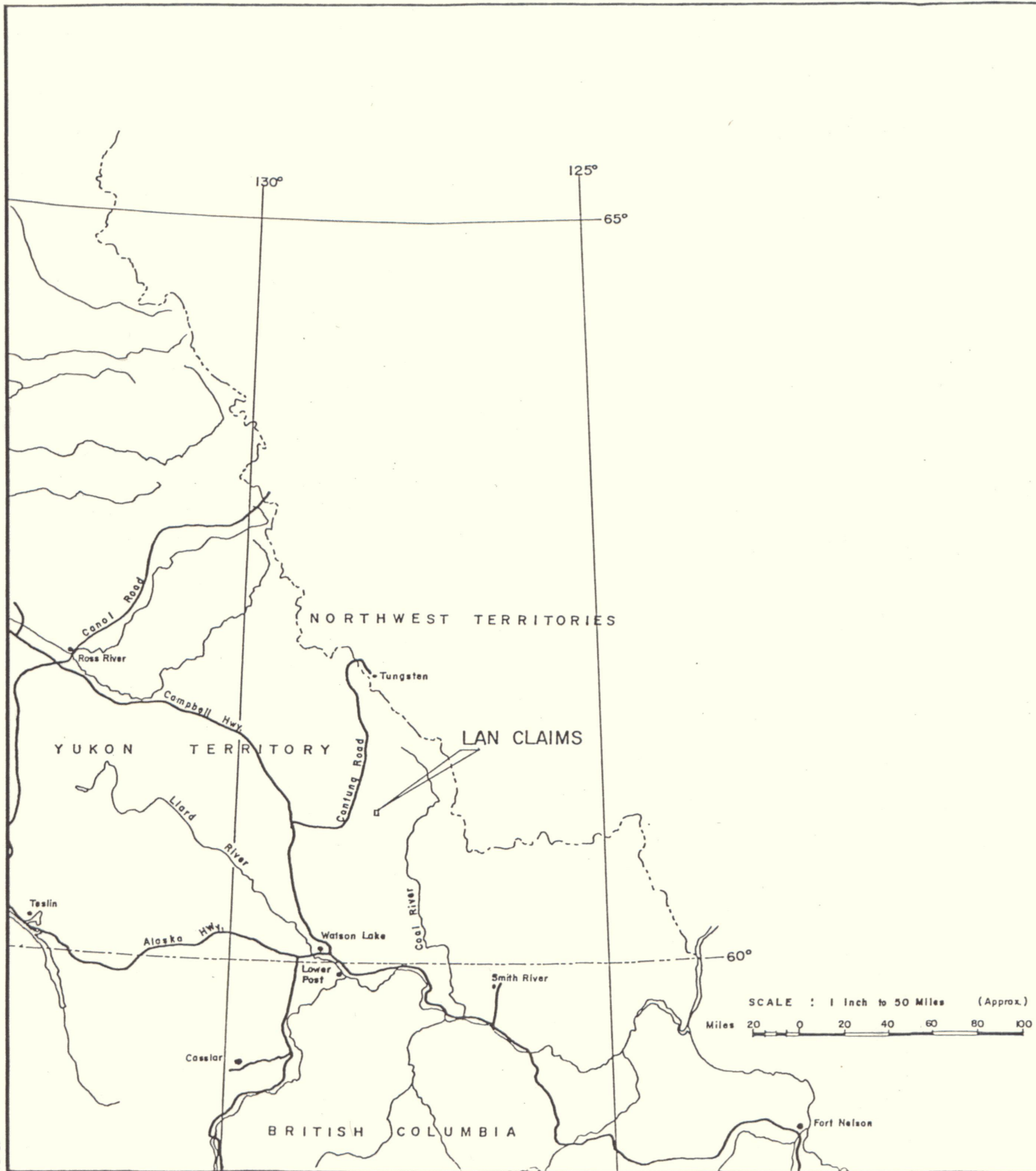
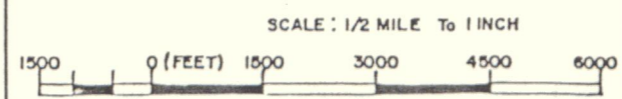
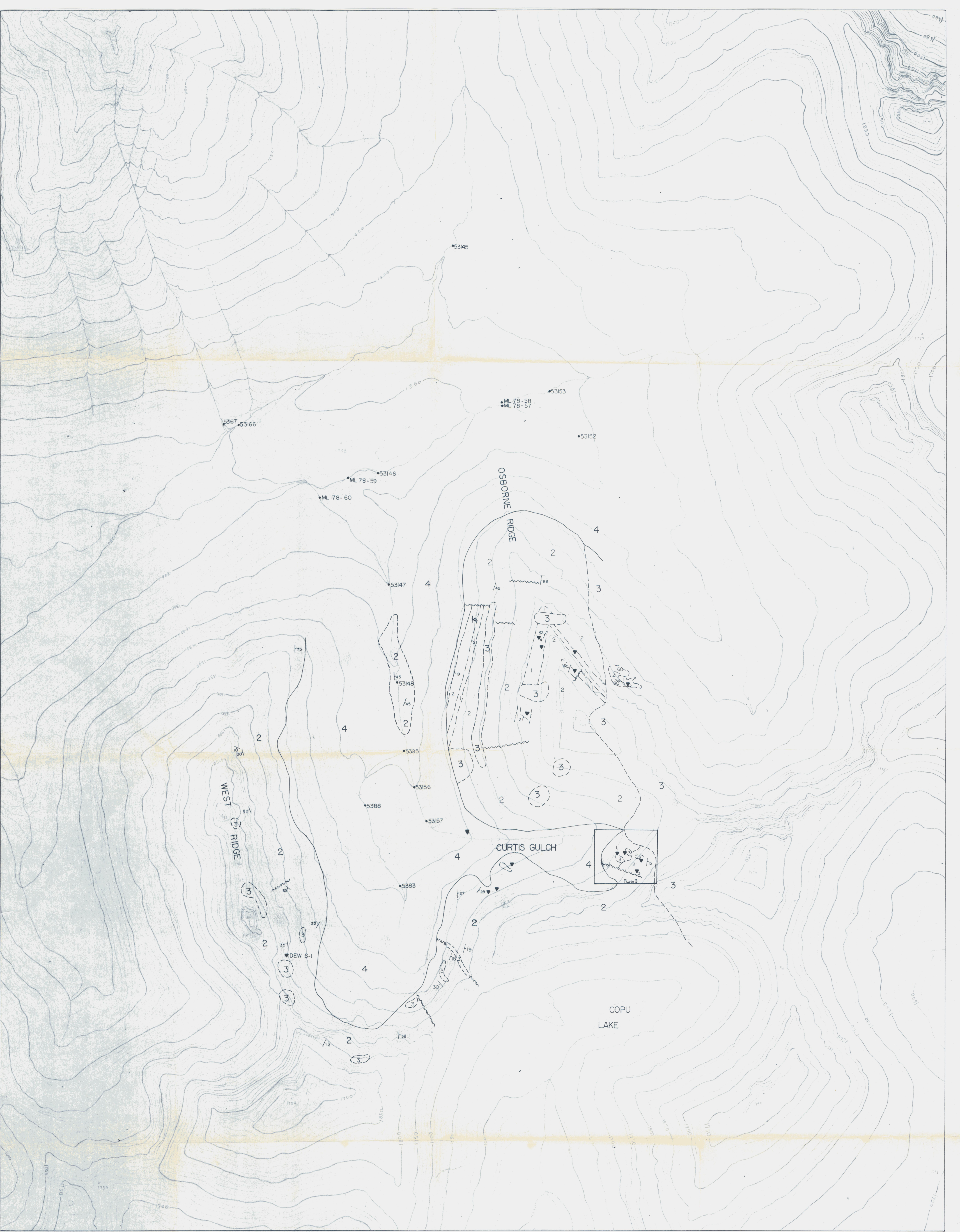


PLATE 1

<b>ASARCO</b>		Vancouver	
HYLAND RIVER AREA			
LAN CLAIMS			
CLAIM & LOCATION MAP			
WATSON LAKE DISTRICT		YUKON TERR.	
Drawn by	Date	N.T.S.	
D.H.O.		105/H-1	





LEGEND

- 4 TALUS, SCREE, OVERBURDEN
- 3 IGNEOUS INTRUSIVE
- 2 PHYLLITE, SLATE, SCHIST, QUARTZITE, HORNFELS
- 1 LIMESTONE (SKARN), MARBLE
- INFERRED GEOLOGICAL CONTACT
- ~ FAULT
- ▼ SKARN MINERALISATION
- 3 SKARN - ASSAY NUMBER
- S STREAM SEDIMENT SAMPLE

PLATE 2

ASARCO INC.  
 LAN PROJECT  
 HYLAND RIVER, YUKON.

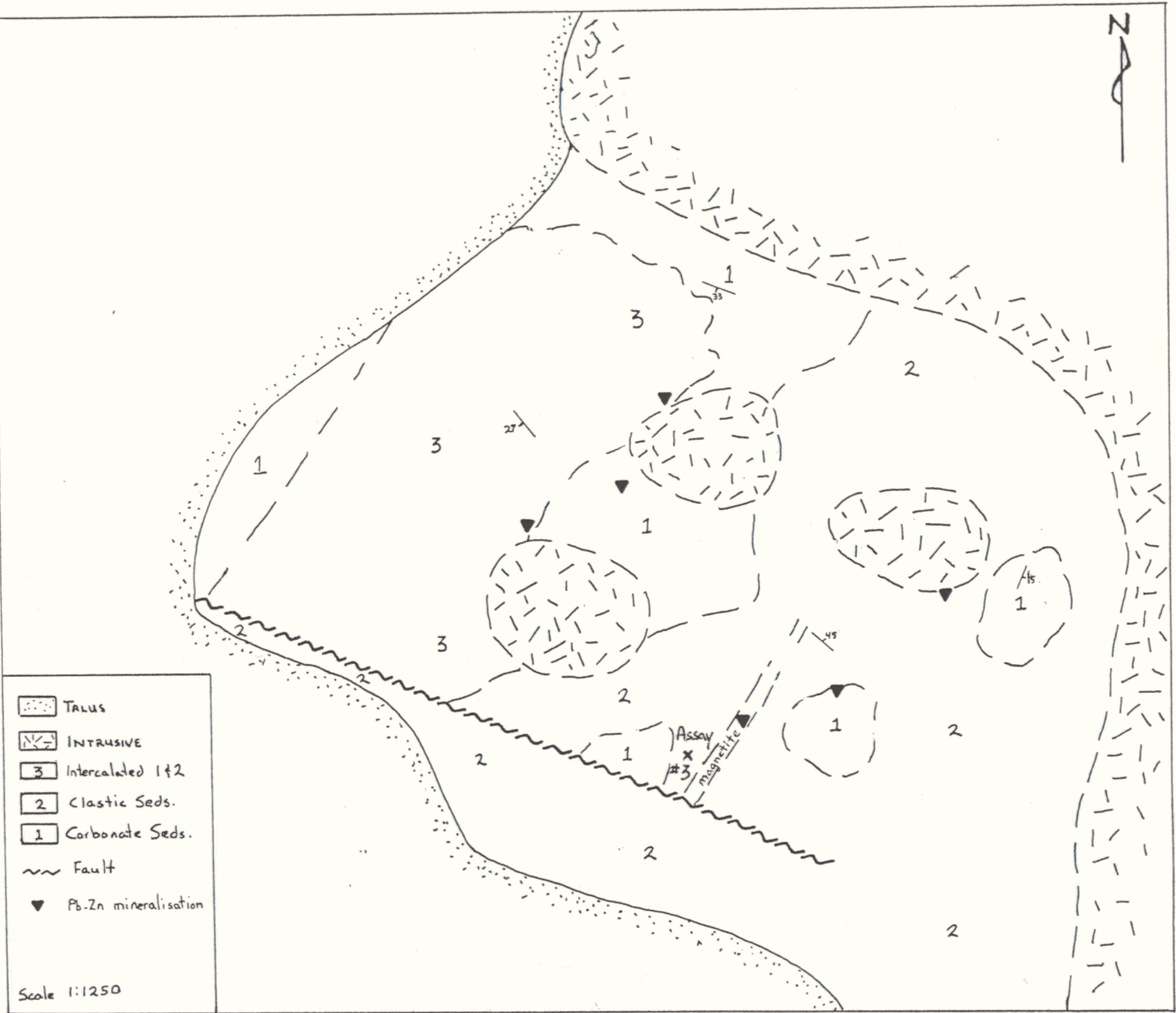
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 DATE OF PHOTOGRAPHY 1960 (FED GOVT.)  
 DATUM G.S.C. (APPROX) SHEET 1 ONLY








RECONNAISSANCE MAPPING  
 PENCIL MANUSCRIPT

PACIFIC SURVEY CORPORATION 73-46

2

PLATE 3  
(INSERT SEE PLATE 2)



-  TALUS
-  INTRUSIVE
-  Intercalated 1&2
-  Clastic Seds.
-  Carbonate Seds.
-  Fault
-  Pb-Zn mineralisation

Scale 1:1250