

GEOCHEMICAL AND GEOLOGICAL REPORT  
ON THE PELLY CLAIMS

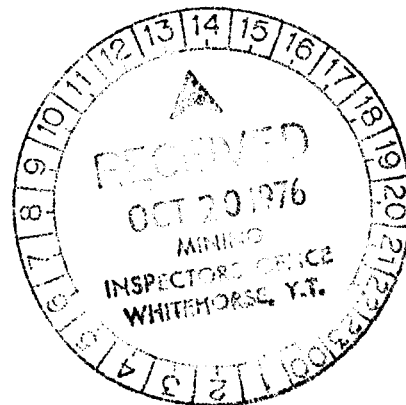
Watson Lake Mining District  
Yukon Territory

NTS 105G-6  
61° 28' N, 131° 20' W

By:  
D. Hendry  
and  
D.C. Miller, P. Eng.  
October 6, 1976

St. Joseph Explorations Ltd.,  
90 Eglinton Ave. W.,  
Toronto, Ontario

09/0134



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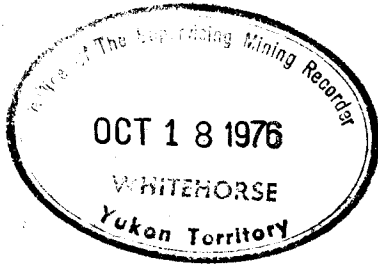
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This report has been examined by the Geological Exploration Unit and is recommended to the Board of Mines to be considered as representation work in the amount of

\$ 1600<sup>00</sup>

*[Handwritten signature]*

~~Registered Geologist or  
Registered Mining Engineer~~

Considered as representation work under  
Section 50 (4) Yukon Quartz Mining Act.

*[Handwritten signature]*

B.R. BAXTER

~~Supervising Mining Recorder  
Commissioner of Yukon Territory~~

Report on Pelly Claims  
Sovereign Metals Submittal  
NTS 105G-6 Yukon

INTRODUCTION

An examination of the Pelly Claims was carried out on June 10 and August 13 and 14, 1976 by David C. Miller and David A.R. Hendry. Reconnaissance soil sampling and geological mapping were conducted over part of the property near occurrences of low grade lead-zinc mineralization. Soil sample sites and other features were located by chain and compass traverses.

LOCATION AND ACCESS

The Pelly Claims are located 50 miles southeast of Ross River, Y.T., at 61° 28' N and 131° 20' W. Access is by helicopter from Ross River or by fixed wing to a bush air strip located ten miles northwest in the Hoole River Valley. A 25 mile winter tote road connects the property with the Robert Campbell Highway at Mink Creek.

PHYSIOGRAPHY

The claims are located between 4000 and 5000 feet above sea level in a northeast trending broad valley with moderate relief. Sidehills are forested in spruce and locally poplar. The valley bottom is densely covered by willow, alder, and "buck brush". The valleys are swampy and soils consist mostly of transported silt overflow. Sidehill soils are moderately developed below a 2 to 6 inch layer of organics and volcanic ash. Rarely small outcrops occur on the sidehill, however, trenching has improved exposure somewhat.

# LOCATION MAP

## PELLY CLAIMS

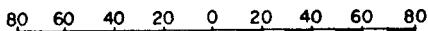
WATSON LAKE MINING DISTRICT

61° 28' N.  
131° 15' E.

PROJECT  
204

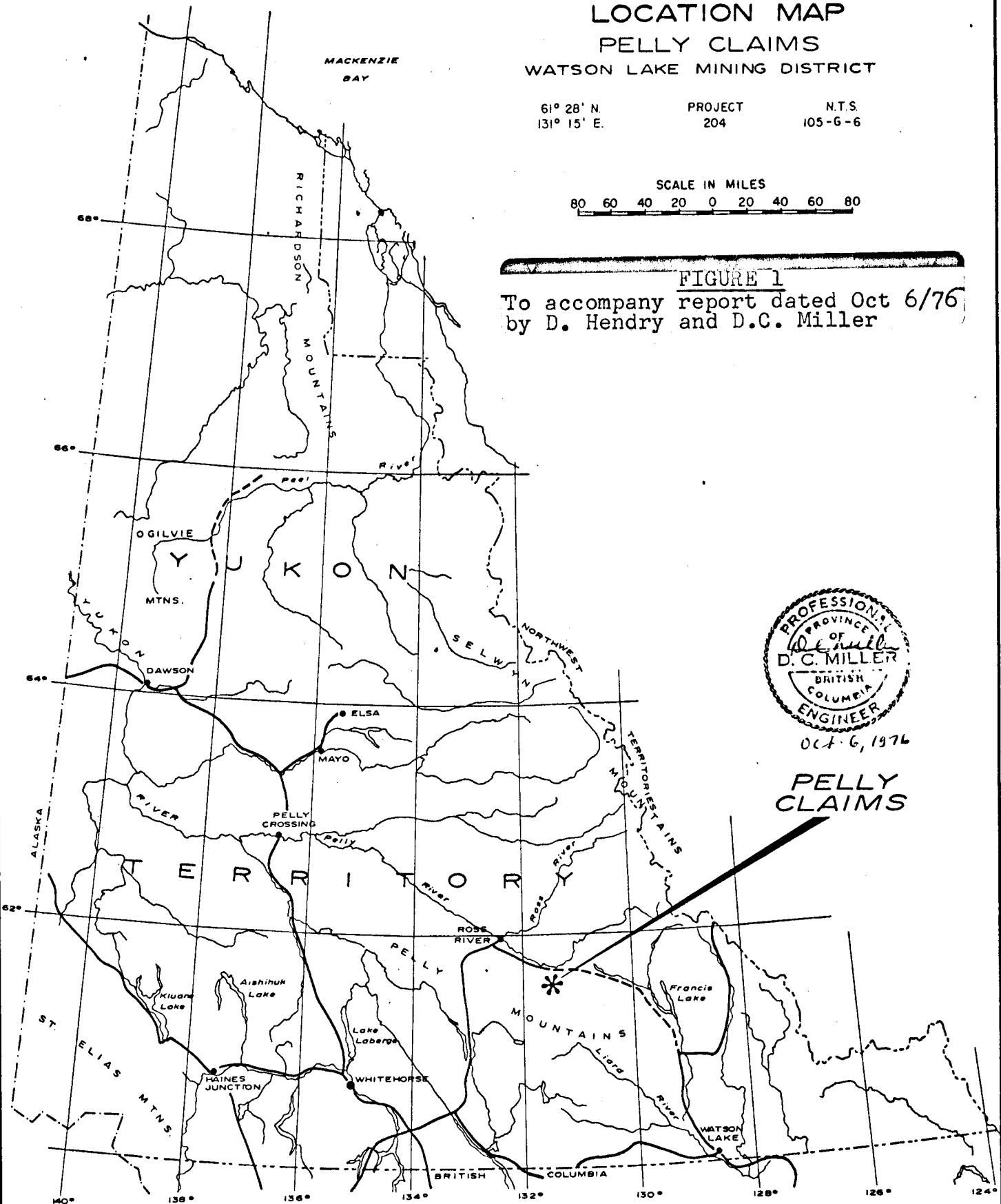
N.T.S.  
105-G-6

SCALE IN MILES



**FIGURE 1**

To accompany report dated Oct 6/76  
by D. Hendry and D.C. Miller



OCT 6, 1976

**PELLY CLAIMS**

PROPERTY

The property consists of a contiguous block of 32 claims as follows:

<u>CLAIMS</u>	<u>GRANT NUMBERS</u>
Pelly 1 to 8	Y83037 to 44
Pelly 9 to 26	Y84094 to 111
Pelly 27 to 28	Y84195 to 96
Pelly 29 to 32	Y84223 to 26

The claims are owned by Sovereign Metals Corporation (N.P.L.)

HISTORY

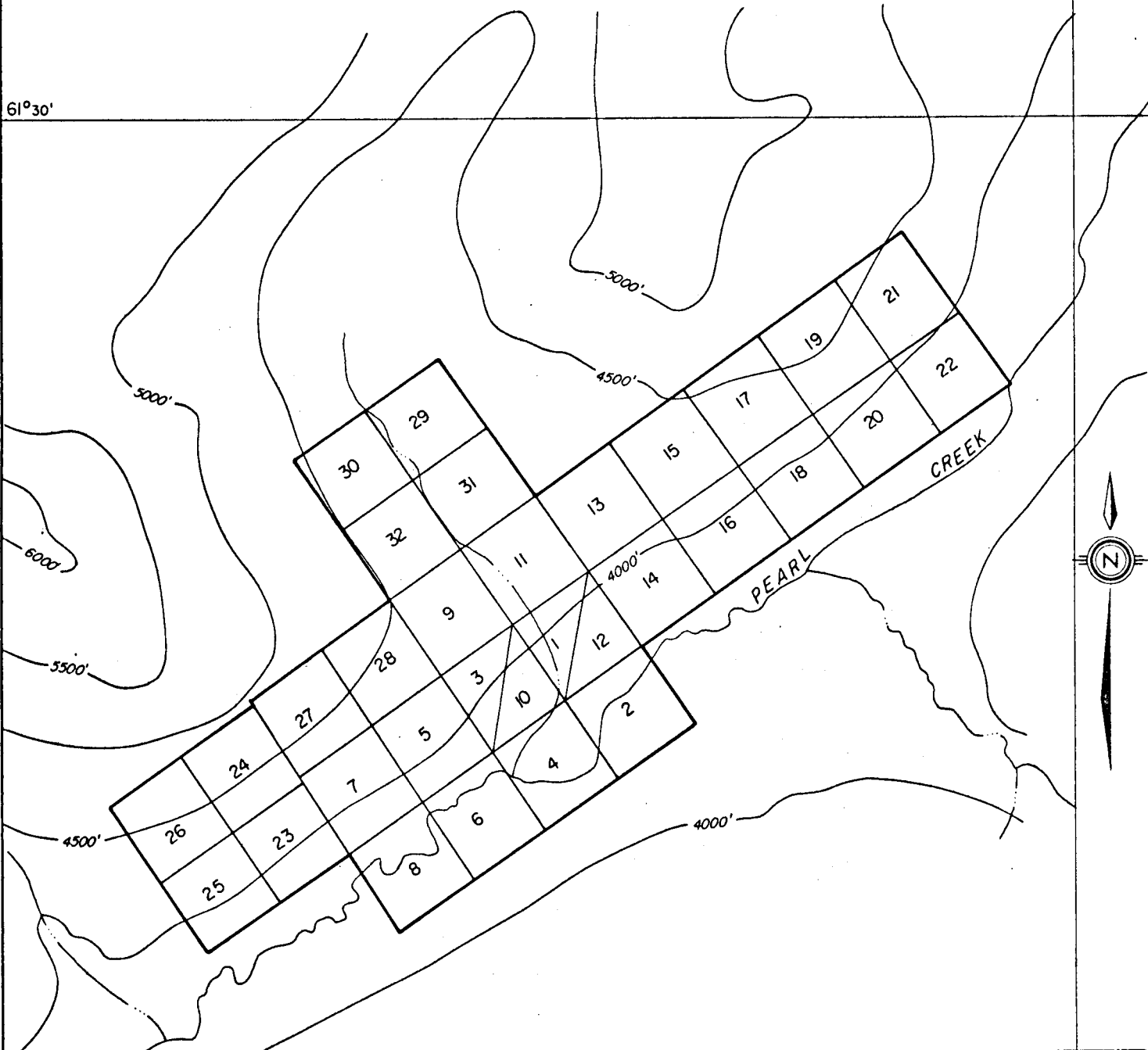
The property was originally staked in 1955 and restaked in 1966 by Northlake Mining Ltd. to cover copper silt anomalies. Work included airborne magnetometer and E.M. surveys, grid soil sampling, bulldozer trenching, prospecting and drilling (four short diamond drill holes totalling 1064 feet). The property was restaked in 1974 and 1975 by Empire Metals which changed its name to Sovereign Metals (N.P.L.).

GEOLOGY AND MINERALIZATION

The property is underlain by Unit A (G.S.C. Map 8-1960) including chlorite-graphite schist, feldspar augen schist and quartz sericite schist. An ultramafic body 6 miles in diameter caps the hill northwest of the property. Schistosity trends west to northwest and dips 15 degrees northeast to vertical. Regional dips are gentle.

Stratiform galena, sphalerite, pyrite, and minor chalcopyrite mineralization occurs in augen schist accompanied by sericite and graphite. Mineralization is exposed in one trench and intersected in two holes (DDH #1: 37 feet of core length; 0.63% Pb, 0.63% Zn, and 0.18 Oz./Ton Ag; DDH #3: 7 feet of core length; 0.3% Pb, 0.2% Zn).

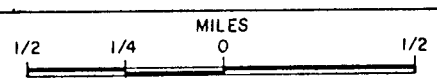
61°30'



**FIGURE 2**  
 To accompany report dated Oct 6/76  
 by D. Hendry and D.C. Miller

St. JOSEPH EXPLORATIONS LTD.  
 TORONTO, CANADA

**CLAIM MAP**  
**PELLY CLAIMS**  
 WATSON LAKE MINING DISTRICT



61° 28' N  
 131° 15' E

PROJECT  
 204

NTS  
 1:50,000



Oct. 6, 1976

## GEOCHEMISTRY

Previous work indicated a zinc soil anomaly, (greater than 280 PPM), some 3800 by 400 feet in extent, trending approximately east-west across the property near the main showing. Values are erratic in the western portion of this zone. A lead soil anomaly (greater than 90 PPM) is nearly coincident with the zinc anomaly in the area tested by drilling.

Soil sampling was conducted by the writers adjacent to the main showing to determine if mineralization exposed in a trench could be traced eastward across a soil covered area and to assess overburden depths. Soil samples were collected at intervals of 100 metres on lines 200 metres apart. At each station both shallow and deep soil samples were collected (if possible).

On the valley slopes, soil horizons generally consist of 2 to 6 inches of organic material and volcanic ash underlain by grey to brown soils. These lower soils were sampled. At greater depths these soils graded into sandy to gravelly soils and hardpan. Where possible deep samples were taken near hardpan at depths of 1 to 3 feet.

On the valley floor, organic material is relatively deep, commonly over 1 foot thick and is underlain by micaceous silt and clay of transported origin. Here, generally only deep samples were collected at depths of 1 to 3 feet.

A total of 50 soil samples were collected in kraft envelopes and delivered to Acme Analytical Laboratories Ltd., Ross River, Yukon. Here the samples were dried, screened and an 0.50 gram portion of the minus 80 mesh fraction of each sample was separated,

Geochemistry (Cont'd)

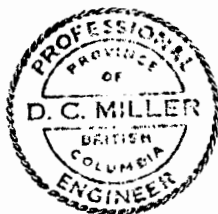
This 0.50 gram portion was digested in a 3cc solution of hot nitric and hydrochloric acid for 2 hours and diluted to 10 cc with water. The resulting solution was analyzed with a Perkin-Elmer model 305 atomic absorption spectrometer for lead and zinc. Analyses certificates are appended herewith.

CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance soil sampling adjacent to a mineralized trench failed to indicate strongly anomalous soils to the east, along strike of mineralization. Small outcrops and sub outcrops of barren augen schist and grey micaceous schist were located 300 to 500 metres eastward of the mineralized trench.

Little difference was found in soil sample results from shallow and deep horizons provided the sample was taken below the organic and ash layers. Valley floor samples are of little significance in that the sample material originated some distance away and probably has not been modified by dispersion from underlying bedrock. Valley slope soils have originated from both residual and transported material and are thought to provide significant results provided the total soil depth is less than 10 feet.

It is concluded the potential for economic mineralization is too limited to warrant further work by St. Joseph Explorations.



Respectfully submitted,

D.A. Hendry

*D.C. Miller*  
D.C. Miller, P. Eng.

October 6, 1976

## APPENDIX 1

### REFERENCES

1. Nevin, A. 1976: Pelly Claims, Watson Lake Mining District, Y.T. Company Report of Sovereign Metals.
2. Wheeler, J.O. ; Green, L.H. ; Roddick, J.A.  
1960: Finlayson Lake, Yukon Territory; Geological Survey of Canada, Map 8-1960.

APPENDIX 3

ANALYSES CERTIFICATES

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis  
6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

File No. R-6083

Type of Samples \_\_\_\_\_

Disposition \_\_\_\_\_

St: Joseph

ANALYSES CERTIFICATE

Pelly

No.	Sample	Pb	Zn							No.
01	P98100 B	39	1280							01
02	100 C	52	880							02
03	101	24	90							03
04	102 B	25	120							04
05	103 B	22	82							05
06	103	56	98							06
07	104 B	18	72							07
08	106 B	23	76							08
09	107 B	25	58							09
10	P98107 C	32	80							10
11										11
12	SK-1	150	74							12
13										13
14	P100101B	45	74							14
15	101C	25	60							15
16	1020	100	595							16
17	102C	39	245							17
18	103B	33	225							18
19	103C	31	134							19
20	104B	29	84							20
21	105B	23	78							21
22	105C	20	88							22
23	106B	18	62							23
24	107B	23	70							24
25	P100107C	25	70							25
26										26
27	P102100C	295	300							27
28	101B	60	172							28
29	101C	164	162							29
30	102B	43	430							30
31	102C	23	164							31
32	103B	23	102							32
33	103C	42	95							33
34	104B	19	56							34
35	105B	20	72							35
36	106B	19	76							36
37	107B	23	48							37
38	P102107C	23	54							38
39										39
40										40

All reports are the confidential property of clients.

All results are in parts per million.

DATE SAMPLES RECEIVED Aug. 17, 1976  
 DATE REPORTS MAILED August 18, 1976  
 ANALYST H. Encianito

File No. R-6083

Type of Samples \_\_\_\_\_

Disposition \_\_\_\_\_

St. Joseph

ANALYSES CERTIFICATE

No.	Sample	Pb	Zn							No.
01	P104 100B	28	100							01
02	100L	36	150							02
03	101B	47	132							03
04	101C	94	136							04
05	102B	37	114							05
06	102C	33	80							06
07	103B	21	62							07
08	103C	17	70							08
09	104B	16	42							09
10	104L	20	62							10
11	105B	30	70							11
12	105C	27	58							12
13	106B	16	54							13
14	106C	19	70							14
15	107B	24	265							15
16	P 104 107C	32	180							16
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2

All reports are the confidential property of clients.

All results are in parts per million.

DATE SAMPLES RECEIVED August 17, 1976  
DATE REPORTS MAILED August 18, 1976



**LEGEND**

- Soil sample site
- O/C outcrop
- - - Cat trail
- ≡ Swamp
- B <sup>52</sup>/<sub>880</sub> } Soil horizon (Bor C) and p.p.m. Pb  
p.p.m. Zn
- $\frac{4}{3} \frac{1}{2}$  Claim post - Pelly 4 | Pelly 1  
Pelly 3 | Pelly 2

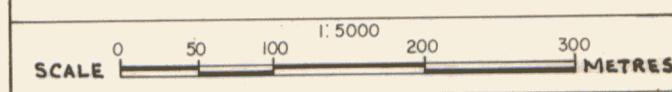
**FIGURE 3**  
To accompany report dated Oct 6/76  
by D. Hendry and D.C. Miller

**SOVEREIGN METALS CORPORATION (NPL)**  
5th FLOOR, 134 ABBOTT ST.  
VANCOUVER, B.C. V6B 2K4



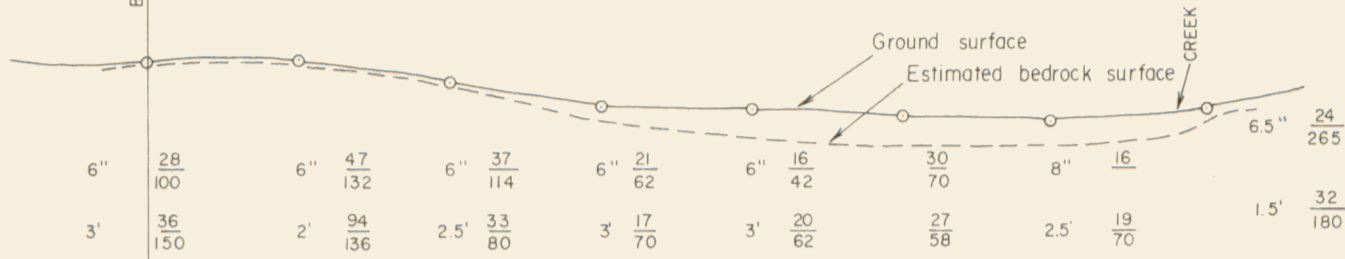
St. JOSEPH EXPLORATIONS LTD.  
TORONTO, CANADA

**PELLY CLAIMS**  
**PLAN OF OUTCROPS &**  
**SOIL SAMPLE SITES**



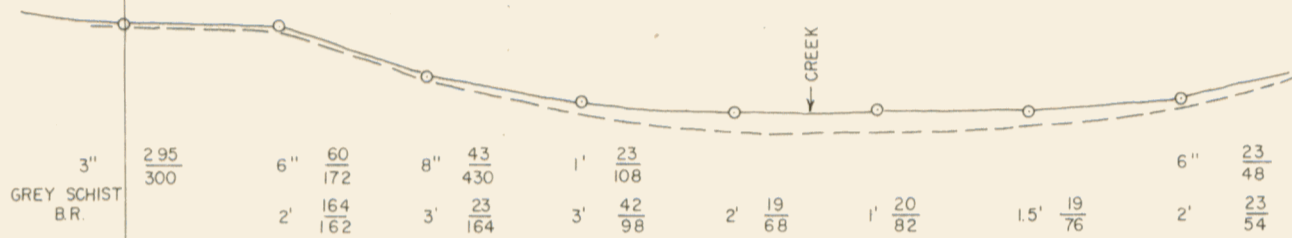
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Base Line 100 N



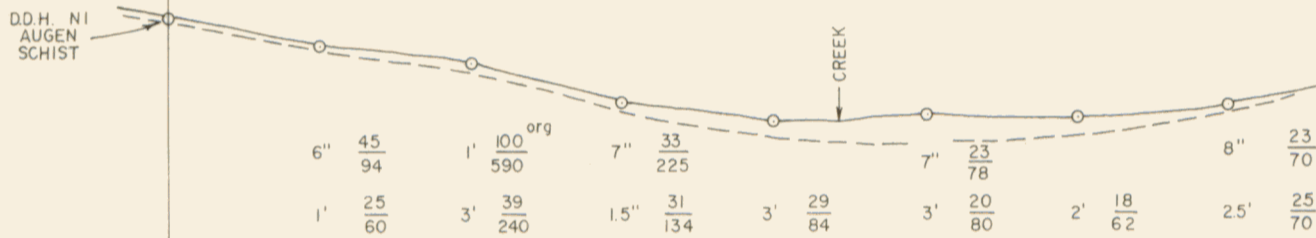
SECTION 104 E.

Elev. 1000 m.



SECTION 102 E.

Elev. 1000 m.



SECTION 100 E.

Elev. 1000 m.



SECTION 98 E.

Elev. 1000 m.

LEGEND

○ Soil sample location

6"  $\frac{28}{100}$  - 6" deep soil sample  
28 p.p.m. Pb.  
100 p.p.m. Zn

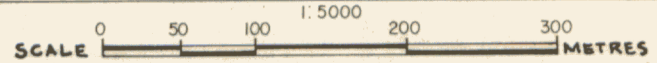


FIGURE 4  
To accompany report dated Oct 6/76  
by D. Hendry and D.C. Miller.

SOVEREIGN METALS CORPORATION (NPL)  
5th FLOOR, 134 ABBOTT ST.  
VANCOUVER, B.C. V6B 2K4

St. JOSEPH EXPLORATIONS LTD.  
TORONTO, CANADA

PELLY CLAIMS  
SOIL SAMPLE SECTIONS



61° 28' N.  
131° 15' E. PROJECT 204 N.T.S. 105-G-6