

822871

MINNOVA INC.

BRITISH COLUMBIA EXPLORATION

SAMATOSUM DEPOSIT

An Introduction

PC Meeting  
July 3, 1987

A. J. Davidson

## INTRODUCTION

Minnova Inc. has recently discovered a high grade base and precious metal deposit (Samatosum Deposit) on Samatosum Mountain east of Barriere, B. C. (Figure 1).

Exploration work has delineated sufficient reserves to warrant the commencement of a feasibility study leading to a possible production decision.

## LOCATION

The Samatosum Mountain property comprises 107 units in 14 claims (including 5 fractional claims) located approximately 25km east of Barriere, B. c. and 60km north of Kamloops. Coordinates of the claim group are 51o09'N by 119o49'W. Access is by 4 wheel drive vehicles. The Samatosum Deposit is on the northwest slope of Samatosum Mountain at an elevation of 1370m.

## GEOLOGY AND MINERALIZATION

### Geological Setting

The area is underlain by a complex assemblage of weakly metamorphosed volcanics and sediments of the Upper Paleozoic (Carboniferous) Eagle Bay Formation. These volcanics and sediments have undergone several phases of deformation involving folding and thrusting. This deformation has produced a moderate to strong foliation in most of the units. The Eagle Bay Formation is intruded by granite and quartz monzonite of the Cretaceous Baldy Batholith and is overlain by later (Tertiary - Pleistocene) volcanics. The Samatosum Deposit is hosted by these Eagle Bay volcanics and sediments.

### Mineralization

The Samatosum Deposit is located at or near the contact between mafic volcanic pyroclastics and a complex sedimentary package consisting of chert, argillites, siltstones and minor sandstones. The units strike northwest -

southeast and dip 30-50° northeast. The Samatosum Deposit appears to be lying on the easterly overturned limb of a north-west plunging syncline. The deposit is stratabound in nature, has a strike length of about 450m, a dip extent of up to 150m and ranges from 0.1m to 12m thick (average 4m).

Two major types of mineralization have been recognized to date in the Samatosum Deposit. These are:

- 1) bedded pyritic, massive to semi-massive sulphides with sphalerite, tetrahedrite, chalcopyrite and galena  
and
- 2) massive galena - sphalerite (tetrahedrite, chalcopyrite) ore.

The bedded ores appear to predominate at the southern end of the deposit and at depth. It is presently thought that they may represent primary syngenetic volcanogenic massive sulphide mineralization located at the top of a mafic volcanic sequence in a submarine basin. This type of mineralization generally makes up the lower grade (300 - 700 g/T Ag) parts of the Samatosum Deposit.

The massive galena - sphalerite ore appears to predominate at the north end and in the up dip portions of the deposit. This ore is associated with bull quartz veining and appears to be a later crosscutting, structurally controlled type of mineralization. The massive galena - sphalerite ore is often superimposed on the banded syngenetic ores and generally makes up the higher grade (700 - 30,000 g/T Ag) parts of the Samatosum Deposit.

### Preliminary Geological Ore Reserves

The Samatosum Deposit has been delineated by about 35 ore holes and 25 barren or unmineralized holes. Based on these a preliminary geological ore reserve has been calculated (polygonal) as follows:

<u>Category</u>	<u>Tonnes</u>	<u>% Cu</u>	<u>% Pb</u>	<u>% Zn</u>	<u>g/T Ag</u>	<u>g/T Au</u>
Open Pit	303,000	1.51	2.07	4.47	1599	2.09
U/G	? 506,000	.81	1.15	2.12	786	1.23
Total	809,000	1.07	1.49	3.00	1090	1.55

The above reserves have been calculated on a 250 g/T Ag equivalent cutoff based on 20% dilution, a minimum mining width of 2m ~~and an 80% across the board mill recovery.~~

### CONCEPTUAL MINE PLAN

As noted above, part of the Samatosum Deposit can be mined by open pit methods with the rest accessible from underground.

Mining would commence in the open pit and will provide an initial feed of up to 500 tonnes per day or 175,000 tonnes per year. Underground mining would then commence near the end of the open pit operation.

Alternatively, depending on economic factors, the entire deposit may be mined by open pit methods. Although this could entail a strip ratio of up to 10:1, larger equipment etc. could then be used and cost/ton material could be significantly less.

### CONCEPTUAL MILLING PLAN

Several possible sites have been suggested for a plant site. The most obvious and closest to the pit is situated approximately one kilometre downhill from the pit site on the southeast side of Johnson Creek and the Johnson Creek road.

Some preliminary metallurgical test work has been completed on the Samatosum ores and no major metallurgical problems are foreseen. It is expected that operations will employ crushing, grinding and flotation to produce either a bulk concentrate or differential zinc and copper-lead concentrates.

Water (process, domestic and fire) will probably be obtained from Johnson Creek and pumped to storage tanks at the mill site.

#### POWER

The closest existing powerline runs along the Sinmax valley and would be about 7 km away from the suggested mill site by road and about 600m lower in elevation. The existing line would require upgrading as it serves only domestic power requirements at present.

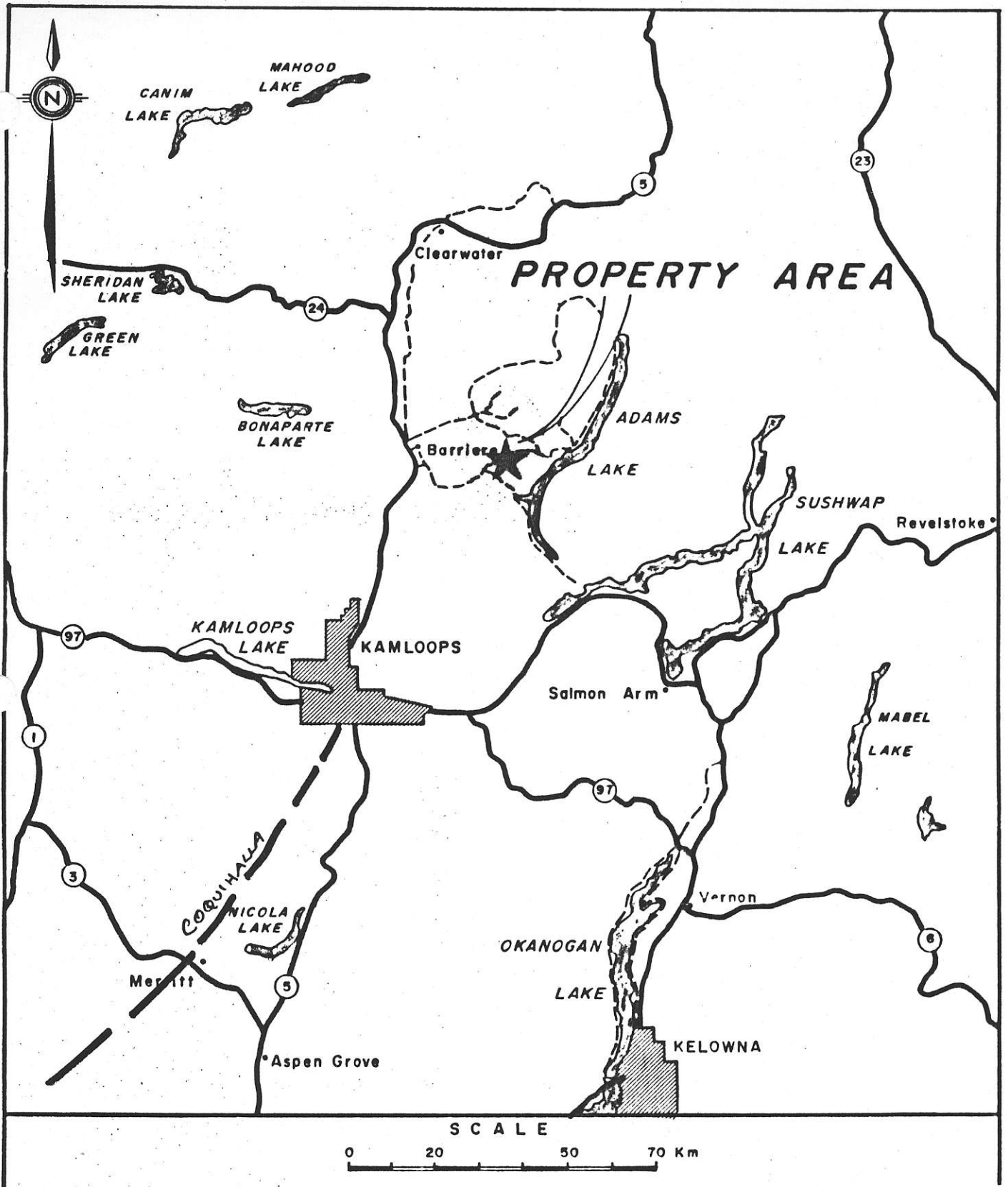
#### CONCEPTUAL TAILINGS DISPOSAL PLANS

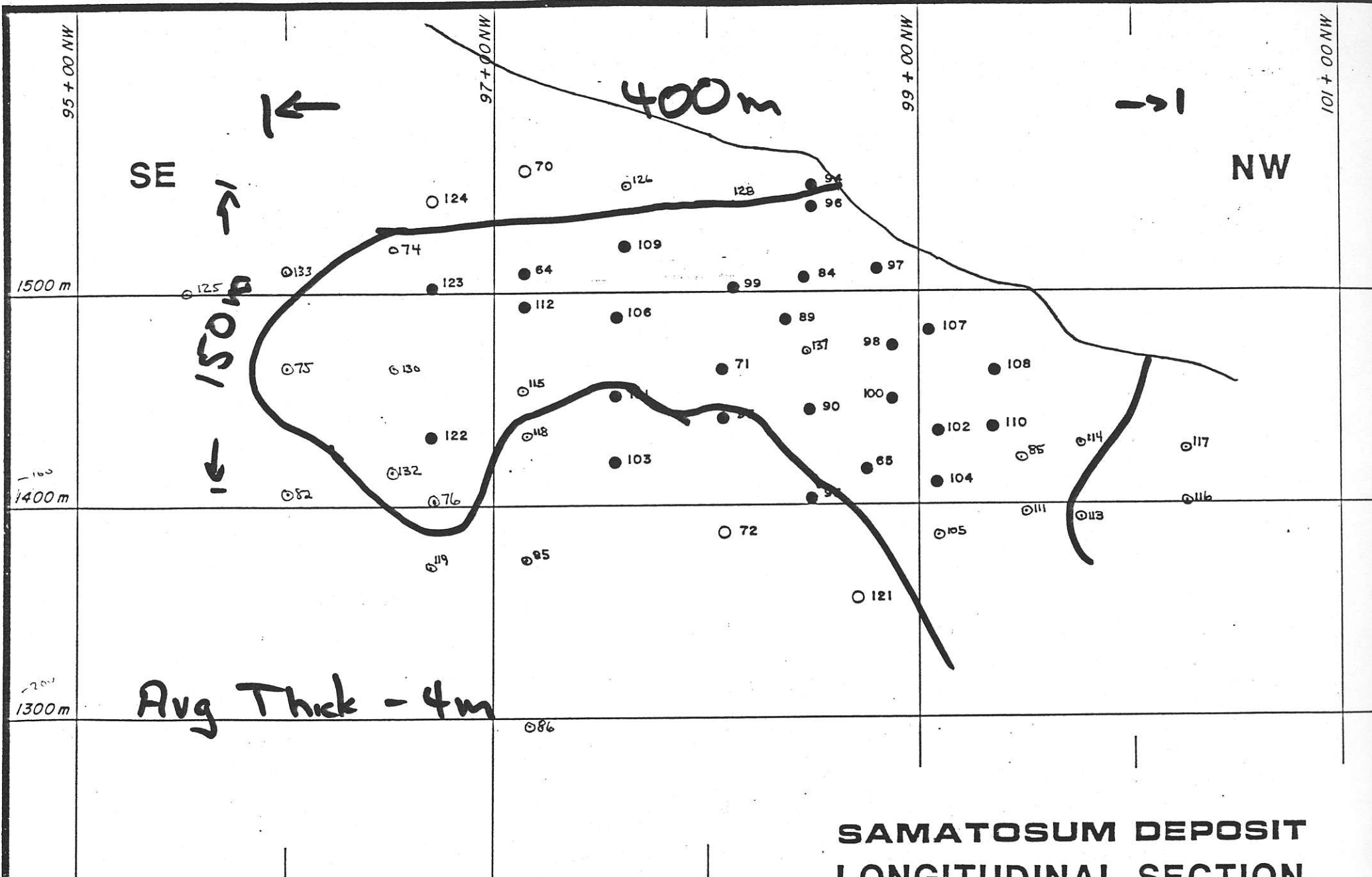
Two sites are immediately suggested for possible tailings areas. Both are in the Adams Lake watershed and both would require "total containment" systems. Perhaps an air dried beach system such as at Myra Falls would be appropriate. One site is on our mining claims about 2-2.5 km northwest from the suggested mill site. The other is about the same distance to the northeast but is not on our claims.

#### DEVELOPMENT SCHEDULE

Attached is a schedule developed by Hatfield Consultants Ltd. which envisages the Sam Deposit in production by mid-1988.







**SAMATOSUM DEPOSIT  
LONGITUDINAL SECTION  
IN PLANE OF MINERALIZATION**

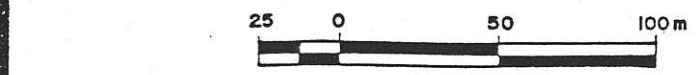
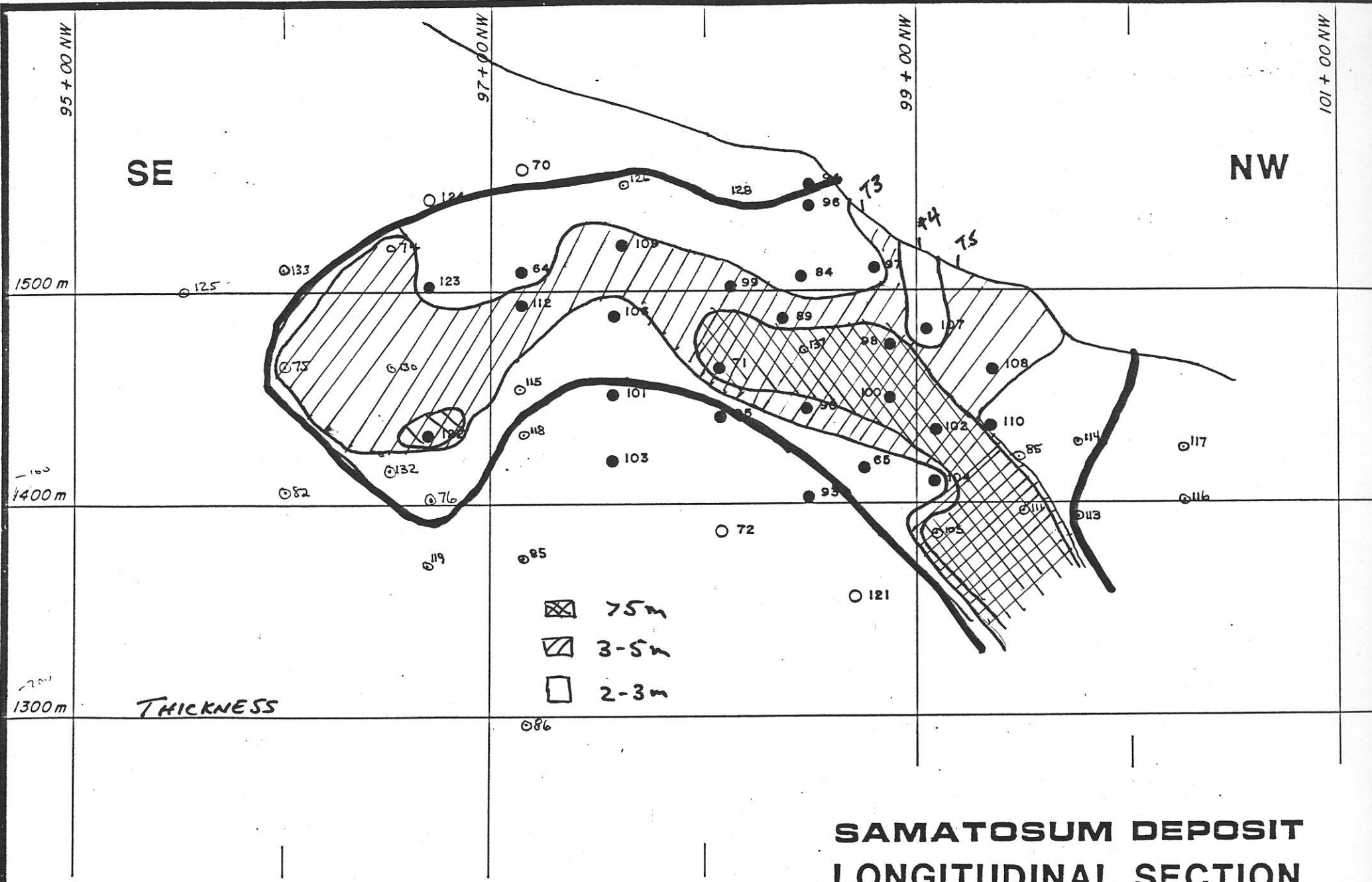
(ASSUMING SINGLE PLANAR MINERALIZED STRUCTURE)

82M/4W

IDP/sg

JUNE 1987





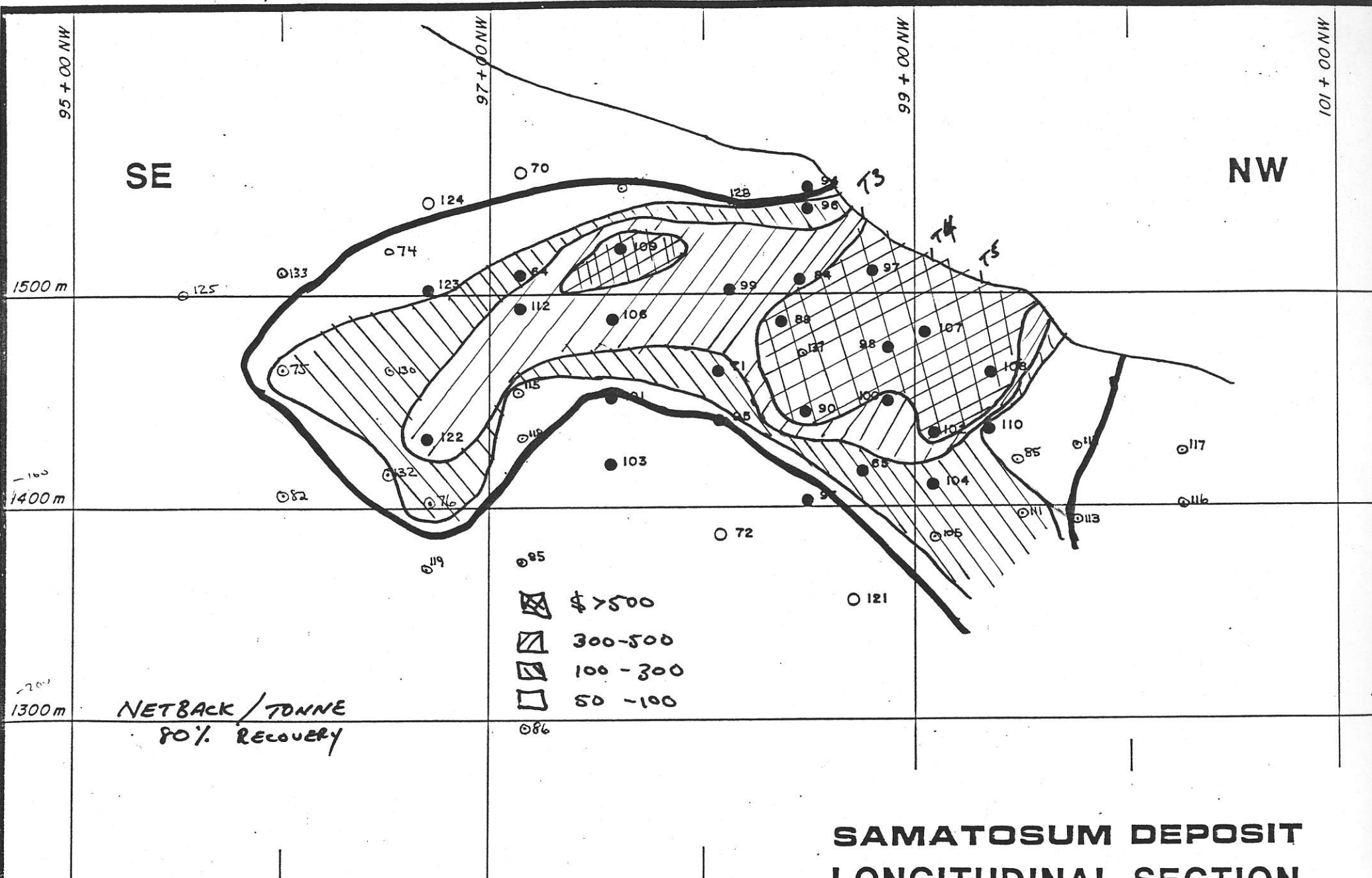
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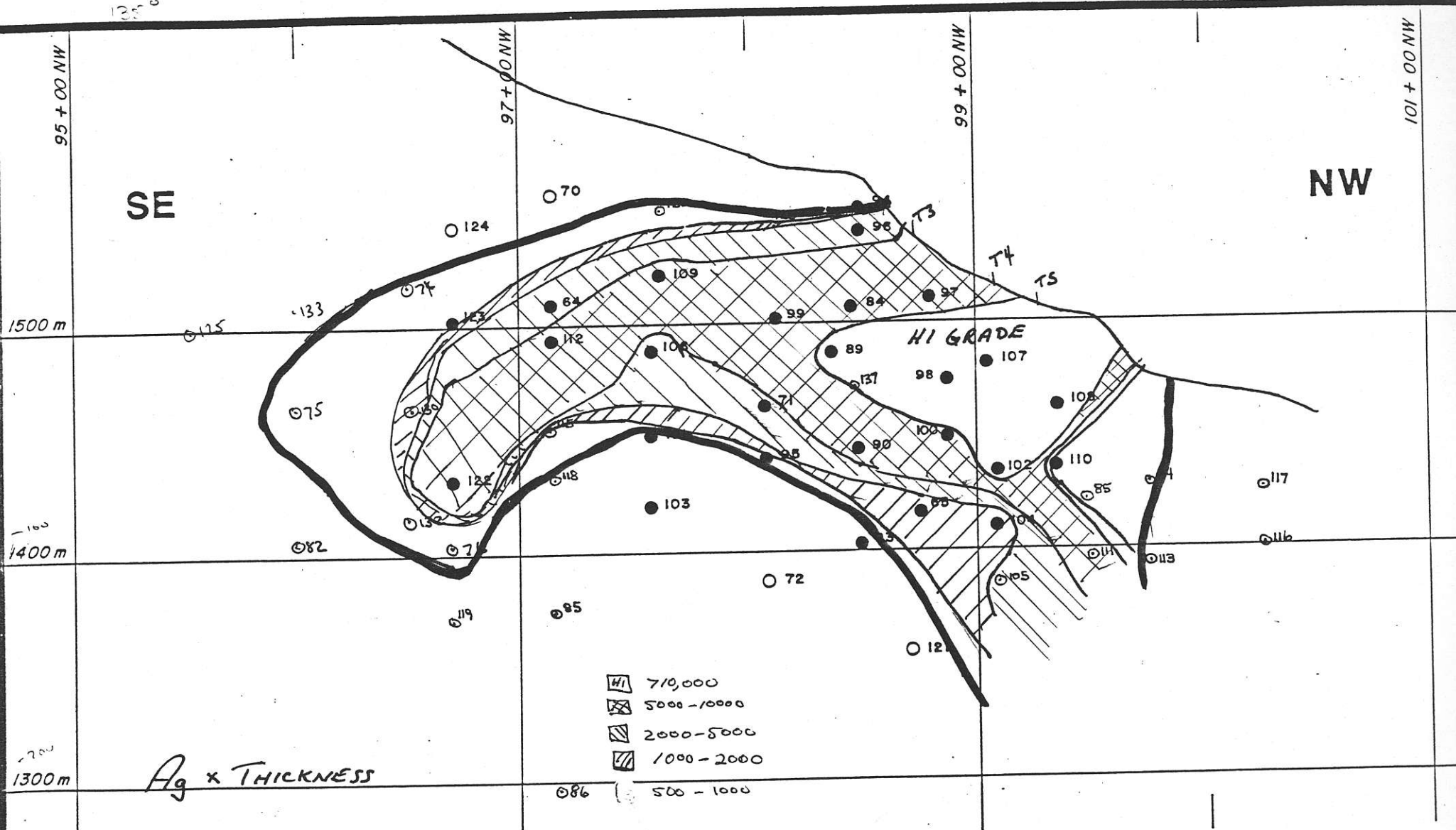
NETBACK / TONNE  
80% RECOVERY

- ⊙ 85
- ▨ \$ > 500
- ▧ 300-500
- ▦ 100-300
- 50-100
- ⊙ 86



## SAMATOSUM DEPOSIT LONGITUDINAL SECTION IN PLANE OF MINERALIZATION

(ASSUMING SINGLE PLANAR MINERALIZED STRUCTURE)



**SAMATOSUM DEPOSIT**  
**LONGITUDINAL SECTION**  
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