

4-5
13

016068

1978 REVIEW OF THE SWIM LAKE
AND VANGORDA DRILLING DATA AND
RECOMMENDATIONS FOR FURTHER WORK

by

J. PAXTON and A.Y. PO

May, 1978

TABLE OF CONTENTS

	<u>PAGE</u>
SUMMARY	1
INTRODUCTION	2
THE SULPHIDE ZONES	2
STRUCTURE	2
PRESENT DEVELOPMENT STATUS	3
OPEN PIT MINING POTENTIAL	4
EXPLORATION POSSIBILITIES	4
CONCLUSIONS	6
RECOMMENDATIONS	7
APPENDIX A - Drill Site Schedule	8 and 9

SUMMARY

During the early part of 1978 the drilling data covering the Swim, Vangorda and Grum deposits was reviewed and reinterpreted. The reinterpretation resulted in relatively few changes to the previously inferred shape of the deposits.

It was concluded that the central core of the Vangorda deposit had the best open pit potential. The following drilling programme is recommended for this zone.

- 5,175 feet (1577.3 m.) first priority
- 1,500 feet (457.2 m.) second priority
- 900 feet (774.4 m.) of exploration drilling

A hoped for additional benefit would be to establish a link between the Vangorda and DY deposits.

INTRODUCTION

This report is in compliance to a request by J.K. Carrington that the data on the Swim Lake and Vangorda deposits be re-evaluated to determine the steps required to bring these properties up to a status comparable to the Grum, short of doing underground work.

The drill logs of the Swim and Vangorda deposits have all been re-studied and re-drafted on metric scale (1:1000). The geologic structure has been re-interpreted in the light of knowledge gained from the work on Grum. A proposal for further work has been made.

THE SULPHIDE ZONES

The Grum deposit consists of approximately 25 million tons of 10.3% Pb-Zn material.

The Vangorda deposit consists of approximately 9 million tons of 8% Pb-Zn material.

The Swim deposit consists of 5 million tons of 9% Pb-Zn material.

STRUCTURE

All three deposits appear to have a similar gross structure and stratigraphic sequence. They all have the form of a recumbent fold with the nose to the south. Previous to this study a fold structure was not recognized in the Vangorda. However, several key sections especially 6E (holes 95, 47, 94) offer convincing evidence that a fold nose exists.

Also in this study several fault offsets are recognized which are similar to the faults observed underground at the Grum. The stratigraphy of all three deposits is similar and is summarized in the following diagram.

Grum, less reliable for the Swim and least reliable for the Vangorda.

OPEN PIT MINING POTENTIAL

From a cursory examination of the data it would appear that the Vangorda central sulfide zone has the greatest open pit mining potential due to its nearness to the surface and low stripping ratio. However, due to oxidation it may not be as amenable to milling as the Grum ore. Therefore, we feel that because the open pit mining potential is greatest here and because its state of development is the least satisfactory, that any new work should be done on the Vangorda.

EXPLORATION POSSIBILITIES

According to mapping done by Cyprus Anvil geologists based on outcrops, rotary drilling through the overburden, diamond drill holes and interpreted EM and Turam survey data, the deposits are all associated with a sinuous band of graphite phyllite which has been traced from the Anvil deposit to Swim Lake.

The established exploration technique in the area has been to locate this graphitic band with an EM survey and follow it with a gravity survey and then drill test all gravity residual highs associated with the graphite zone. This method is effective to a depth of about 150 m.

In 1976, Cyprus Anvil tried tracing a fold in the graphitic phyllite to depth by drilling and were successful in discovering the DY deposit. However, it is apparently on the opposite side of the graphitic band. If this interpretation of the geology is correct then there is a potential for future exploration on the DY side of the graphite, south of the Grum and

Vangorda, as shown on the following diagram.

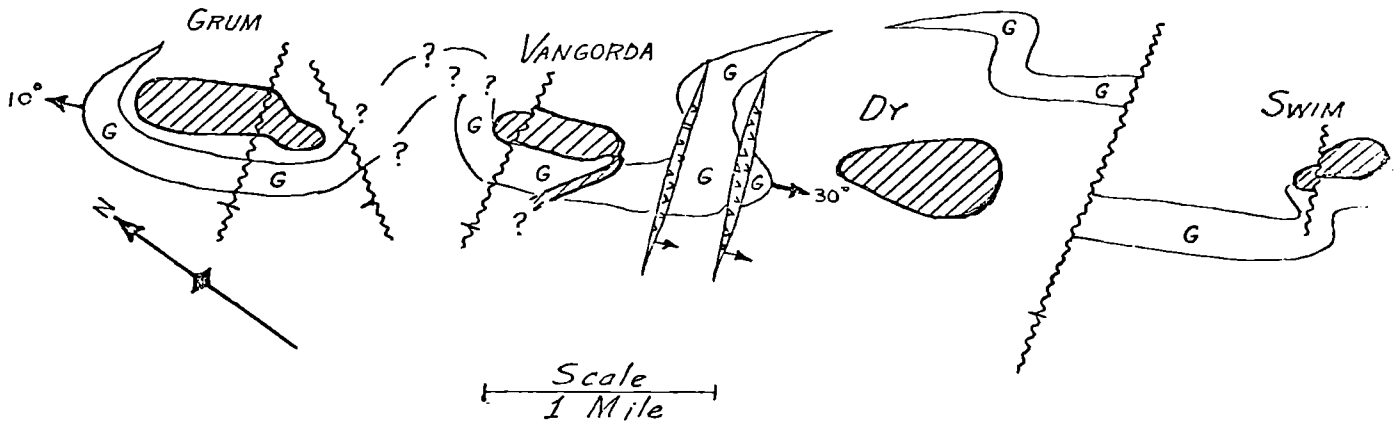


Figure 2 - Generalized plan of the ore deposits relative to the main graphitic phyllite band

It is also possible that the position of the DY relative to the Vangorda is due to fault displacement and this it may connect with the Vangorda via the band of sulphides south of Vangorda (Holes 51, 54, and 102) which appears to lie within the graphite band. This band of sulphides coincides with a small gravity residual anomaly and a very strong magnetic anomaly.

CONCLUSIONS

At Grum, a tight drilling pattern in conjunction with the mapping of the underground workings gave us a detailed picture of the shape and grade of the deposit. No amount of new drilling on the Vangorda or the Swim deposits can achieve the same result unless it is allied with underground openings into the sulphides. However, more drilling can certainly add to our knowledge. After reviewing the possible benefits of additional drilling on the Grum, Vangorda and Swim deposits, we would recommend concentrating on the west end of the Vangorda for the following reasons.

- (1) The central sulphide zone of the Vangorda comprising approximately four million tons lies close to the surface in a compact body and therefore has the highest potential for open pit mining, even though the grade is slightly lower than in the upper part of the Grum.
- (2) Core recovery and assay data from the Vangorda is the least reliable. New drilling here would greatly increase the reliability of the tonnage and grade estimate for the Vangorda.
- (3) If a link exists between the Vangorda and DY, or between the Vangorda and Grum, it would be important from an exploration point of view. New drilling on the Vangorda might establish such a link.

RECOMMENDATIONS

It appears to us that the first ore to be mined in the Grum, Vangorda-Swim group will be the central high grade core of the west end of the Vangorda deposit comprising approximately four million tons.

To establish the tonnage and grade of this ore more reliably, and also to check some of our assumptions about the structure of the zone, we would recommend drilling 5175 feet (1577.3 m.) of first priority and 1500 feet (457.2 m.) of second priority vertical BQ hole.

To test the zone south of Vangorda, lying in the graphitic phyllite which may form a link with the DY deposit, we would recommend 900 feet (274.3 m.) of BQ exploration drilling.

A drill site schedule is included in Appendix 'A' of this report, and for detailed information the reader is referred to the new revised metric sections covering the Vangorda and Swim deposits.

SCHEDULE OF PROPOSED VANGORDA DRILLING SITES

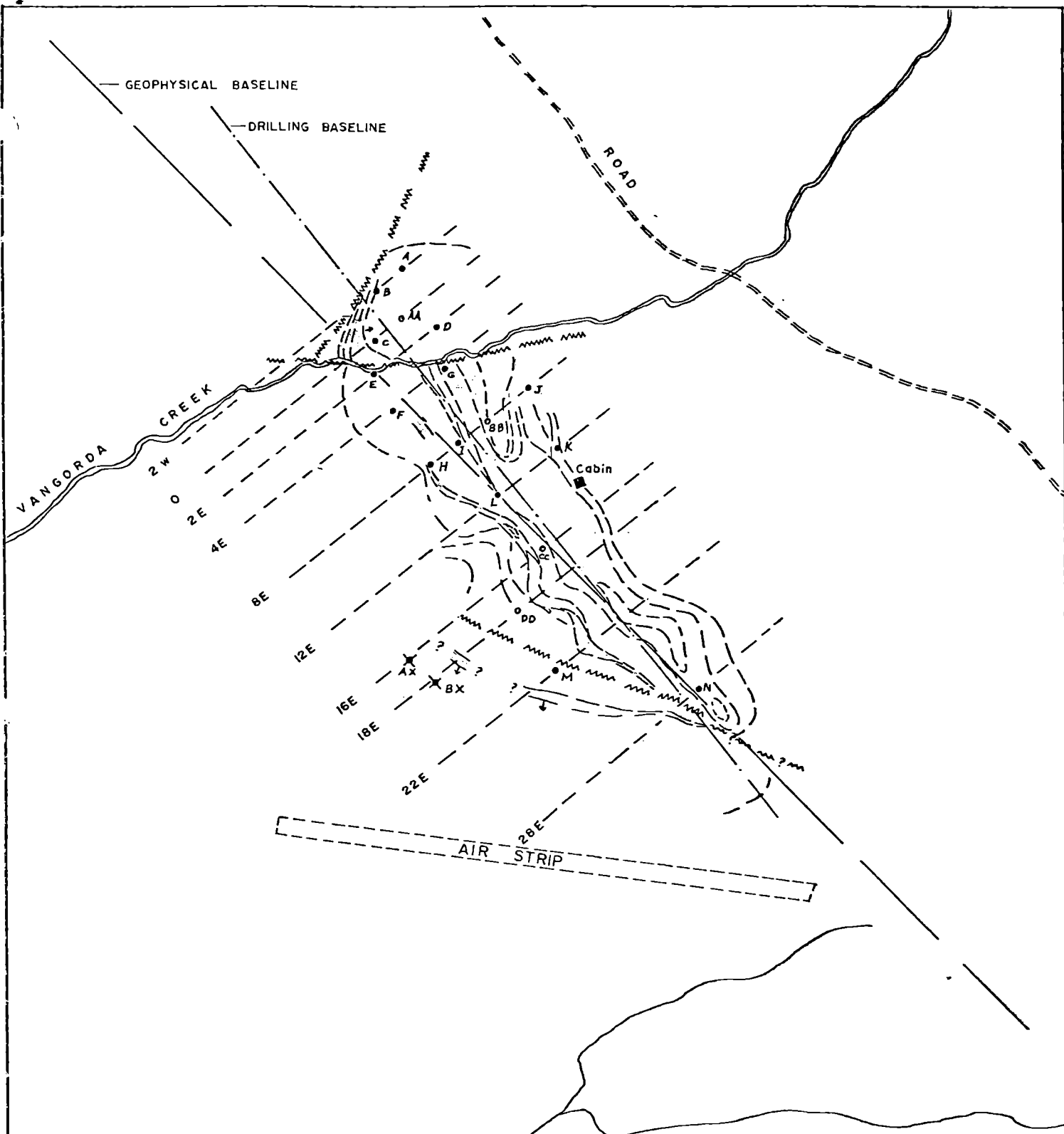
SITE PRIORITY	SECTION	GRUM METRIC	GRID CO-ORDINATES	DEPTH	REMARKS
		NORTH	EAST		
A	2W	9292	9227	400' (121.9m)	Test continuity and tail-end of good grade intercepts fr. DDH #30
B	2W	9253	9180	250' (76.2m)	Test continuity between DDH #28 & 30
C	0	9167	9170	300' (91.4m)	Test correlation and continuity between DDH #1 &
D	2E	9190	9285	350' (106.7m)	Test cut-off of mineralization between DDH #115 & 133. Also confirm good assay at 115
E	2E	9100	9180	300' (91.4m)	Test unknown ground between DDH #13 and 119. Could be a hinge or faulted ground.
F	4E	9035	9207	400' (121.9m)	Test unknown ground between DDH #48 & 10. Suspect intersection of mineralized band correlable w/DDH #10
G	4E	9120	9306	375' (114.3m)	Test unknown ground between DDH #33 & 16
H	8E	8940	9283	500' (152.4m)	Test unknown ground between DDH #64 & 53 - see if intercept at 64 can be correlated w/53.
I	8E	8980	9330	500' (152.4m)	Test for fold nose between 53 & 45, also confirm interpreted continuity of quartz sulfide from DDH 45. Test continuity of lower sulfide band from DDH #53
J	8E	9060	9423	250' (76.2m)	Test continuity of massive sulfide intersection from DDH #18
K	12E	8977	9512	300' (91.4m)	Test continuity and extent of intercept from DDH #63

SITE RST PRIORITY	SECTION	GRUM METRIC	GRID CO-ORDINATES	DEPTH	REMARKS
		NORTH	EAST		
L	12E	8890	9410	500' (152.4)	Test ground between DDH #49 & 57 and probe for extension of intercepts from DDH #49 and lower band from DDH #57
M	22E	8578	9512	400' (121.9)	Trace sulfide band intercept from DDH #100 and test for hinge fold
N	28E	8558	9769	350' (106.7)	Test for extension of intercept from DDH #86 and confirm assay result. Test lower band between DDH #86 and 83

Sub-total 5175 (1577.3)

SITE SECOND PRIORITY	SECTION	GRUM METRIC		DEPTH	REMARKS
		NORTH	GRID CO-ORDINATES EAST		
AA	0	9207	9220	400' (121.9m)	Check continuity of sulfide bands between DDH #26 and 27
BB	8E	9020	9377	300' (91.4m)	Check ground between DDH #45 and 18 and complete section
CC	16E	8795	9486	400' (121.9m)	Check interpreted fol nose and lower band between DDH #43 & 44
DD	18E	8683	9450	400' (121.9m)	Confirm intercept of angle hole #14 and possible continuity of lower band from DDH # 109 and 71
		<u>Sub-total</u>		1500 (457.1)	

SITE EXPLORATION HOLES	SECTION	GRUM GRID		DEPTH	REMARKS
		NORTH	GRID CO-ORDINATES EAST		
AX	16E	8615	9275	500' (152.4)	Test magnetic and gravity anomalies and determine extent of sulfide intercepts from DDH #51
BX	18E	8566	9314	400' (121.9m)	Test extent of sulfide band from DDH #51
		<u>Sub-total</u>		900' (274.3)	
<u>Total of Twenty holes</u>				-	7575 feet (2308.8m)



VANGORDA DEPOSIT
 FARO, YT.

BEDROCK SURFACE SULFIDES OUTLINE
 and

PROPOSED ADDITIONAL DDH LOCATIONS

□ MASSIVE SULFIDE
 □ QUARTZ SULFIDE

A • First priority holes
 AA • Second priority holes
 AX + Exploration holes



SCALE 1: 10 000m

April, 1978