Vangorda Mine Production Geology

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CURRAGH RESOURCES INC.
Inter-Office Memorandum

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Faro Minesite

cc Gregg Jilson, V.P. Exploration
Whitehorse Office

From: Cam Reed, Exploration Geologist
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10 26 90

RE: Testing of secondary metal enrichment/depletion at Vangorda

Recent metallurgical bench testing at Faro of the upper more oxidized Vangorda ore zones yielded less than satisfactory results. Poor selectivity of sphalerite and galena and unexpected high concentrations of copper in the lead rougher concentrate are the major problems. Explanations for these results are currently being pursued.

A possible explanation is the hypothesis of higher than average copper concentration near the top of the Vangorda Orebody due to weathering and supergene sulphide enrichment. The copper may be rimming some of the sphalerite and galena grains which would result in poor sphalerite/galena separation for material in this zone. The higher copper concentration may partly be the result of secondary copper and zinc enrichment due to the percolation of groundwater (supergene enrichment) through the orebody. As water percolates through the oxidized orebody above the water table it would leach out soluble zinc and copper. As the water moved downwards through the zone of oxidation it may precipitate copper and zinc oxides above the water table and also precipitate secondary copper and zinc sulphides as the metal bearing water descended into a more reducing environment below the water table. This would result in secondary sulphide enrichment of the orebody in a thin zone below the groundwater table. This zone may have characteristically poor metallurgical response.

If this zone does exist, it is likely to be thin and near the overburden surface. It would make up an anomalous high proportion of the current Vangorda stockpile because we have been mining the most shallow reserves SE of section 12.

To test for this zone , I have plotted copper histograms down each drillhole trace for those holes which have been assayed for copper from section 12 to 26. Although some holes show that there does seem to be elevated copper concentrations near the overburden interface, the trend is not consistent from hole to hole and is far from conclusive.

I have compiled a list of samples from selected 1990 drillholes SE of section 12 in areas where the ore zone subcrops. The samples will have to be recovered from Grum camp (Preferably the pea sized rejects because after they would likely oxidize at a slower rate than the pulp samples). The samples would be sent out to be analyzed for non sulphide lead, non sulphide zinc, and non sulphide copper.

This study would give us a better understanding of the size and distribution of the oxidized ore zone and the amounts of recoverable metal in this zone. It will also give some insight into possible local sulphide and nonsulphide metal enrichment or depletion due to weathering or the movement of groundwater.

If time permits, It would be beneficial to have polished thin section descriptions completed for some of the split core samples sent out for these analyses.

Should the testwork confirm the existence of a copper enriched zone in the shallow SE section of the orebody, then I recommend additional testing of 1990 drillholes in the upper zones in the NW part of the orebody.

I have not been able to contact Northern Analytical to confirm that they are capable of performing these analyses. It is likely that we may have to send the samples to a lab in Vancouver to complete the assaying.

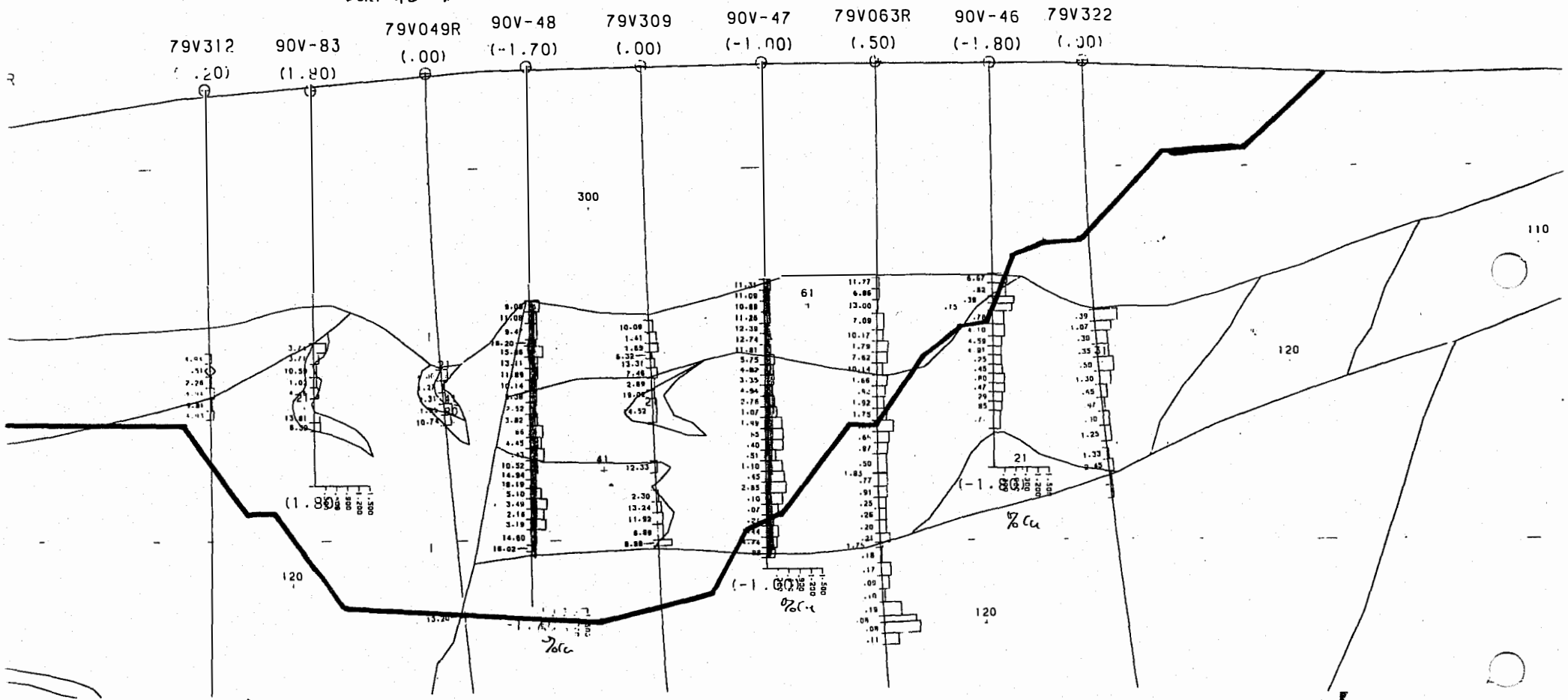
If you have any suggestions which may help explain the less than satisfactory metallurgical results of the initial testing of the Vangorda stockpile, please let me know.

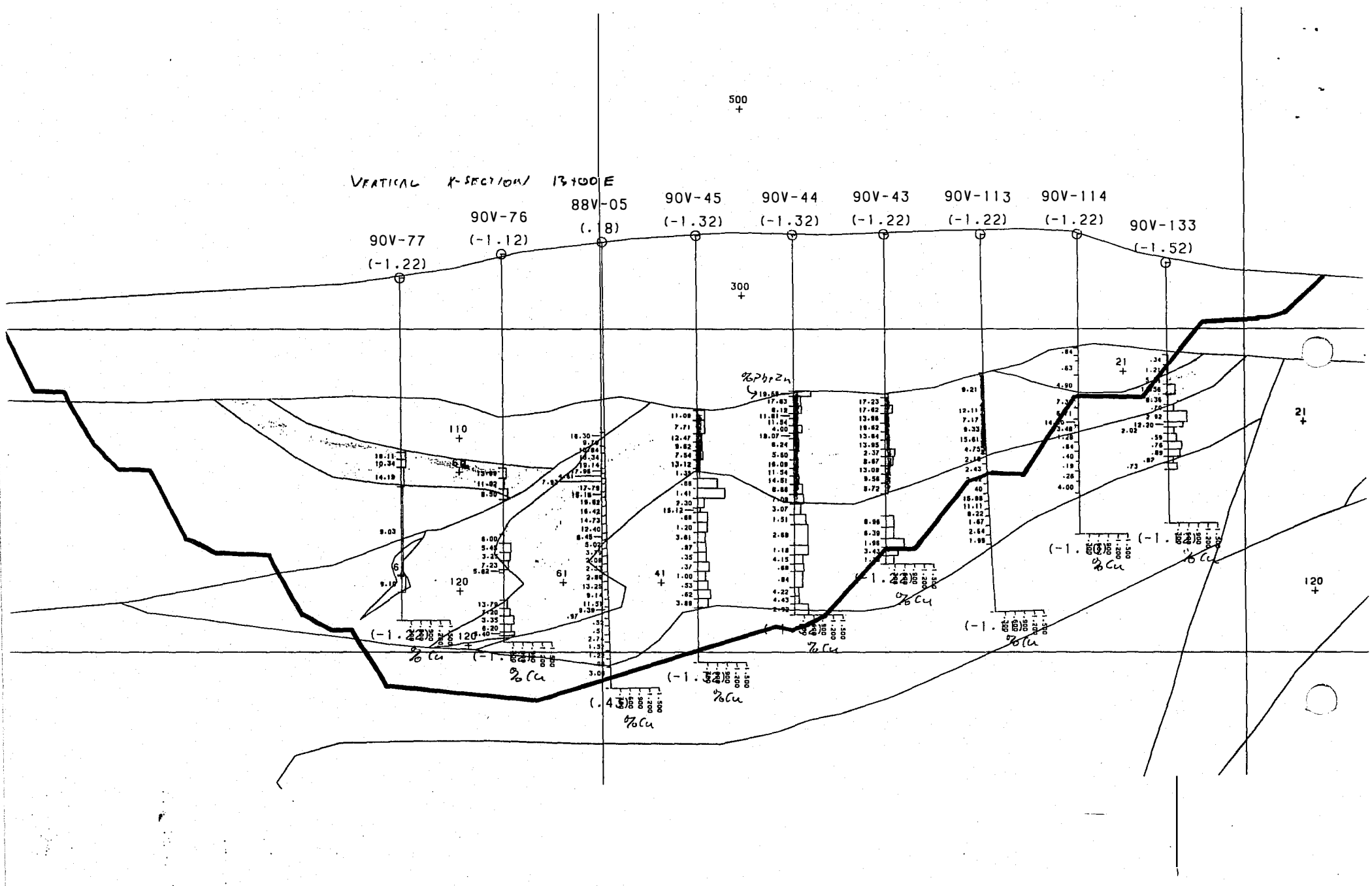
The following samples are to be assayed for non sulphide lead, non sulphide zinc, and non sulphide copper.

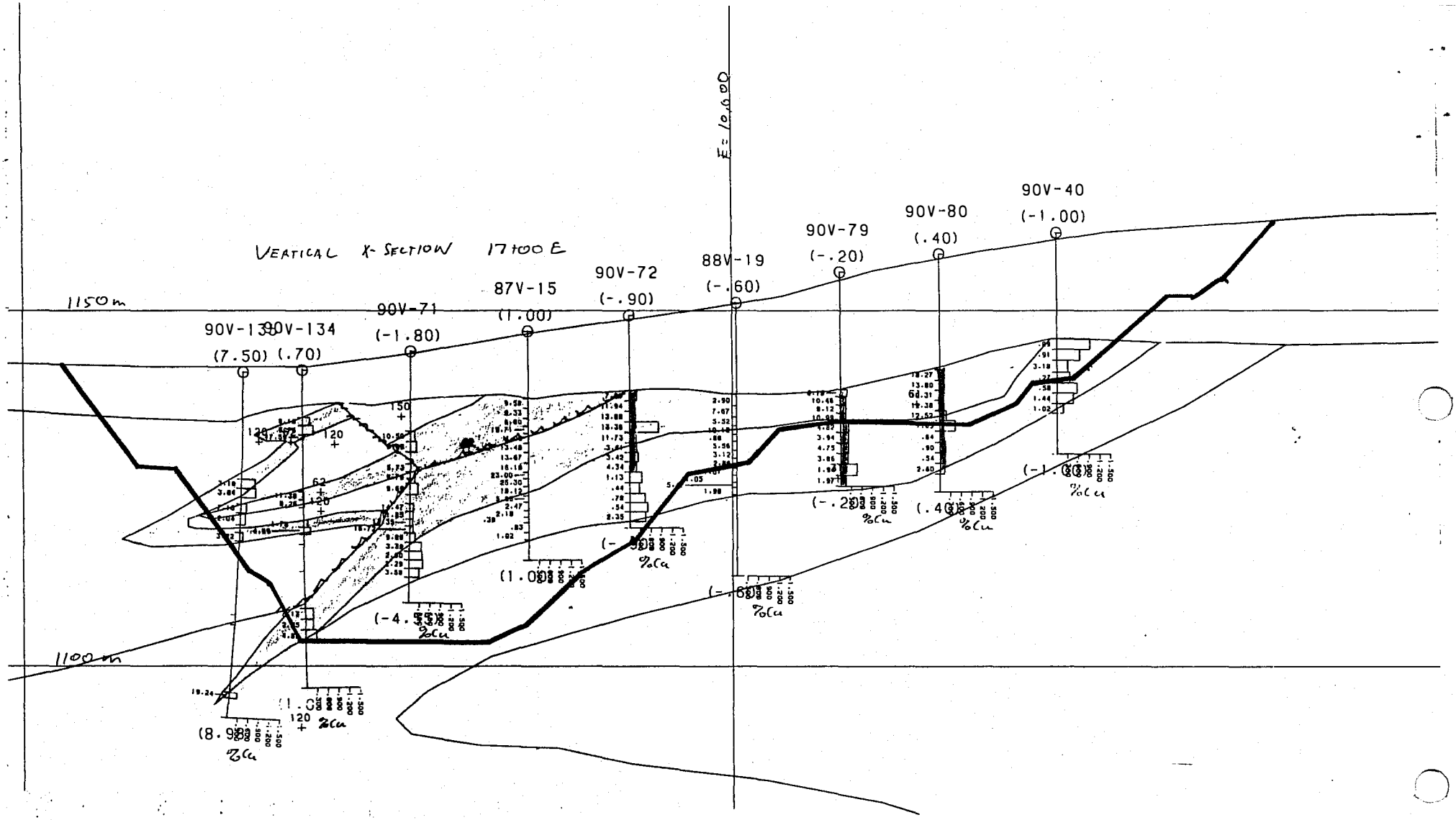
Hole ID	Sample #s	# of samples
Vetical X-section 12E		
90v-47	60317 to 60327	11
90v-48	60442 to 60464	23
Vetical X-section 13E		
90v-43	60595 to 60605	11
90v-44	60611 to 60624	14
90v-45	60559 to 60564	6
* 90v-113	61716 to 61722	7
Vetical X-section 17E		
90v-72	60465 to 60472	8
90v-79	60418 to 60427	10
90v-80	60408 to 60417	10
Vetical X-section 19E		
90v-36	60298 to 60305	8
90v-38	60272 to 60279	8
Vetical X-section 23E		
90v-12	60043 to 60066	24
Total samples:		140

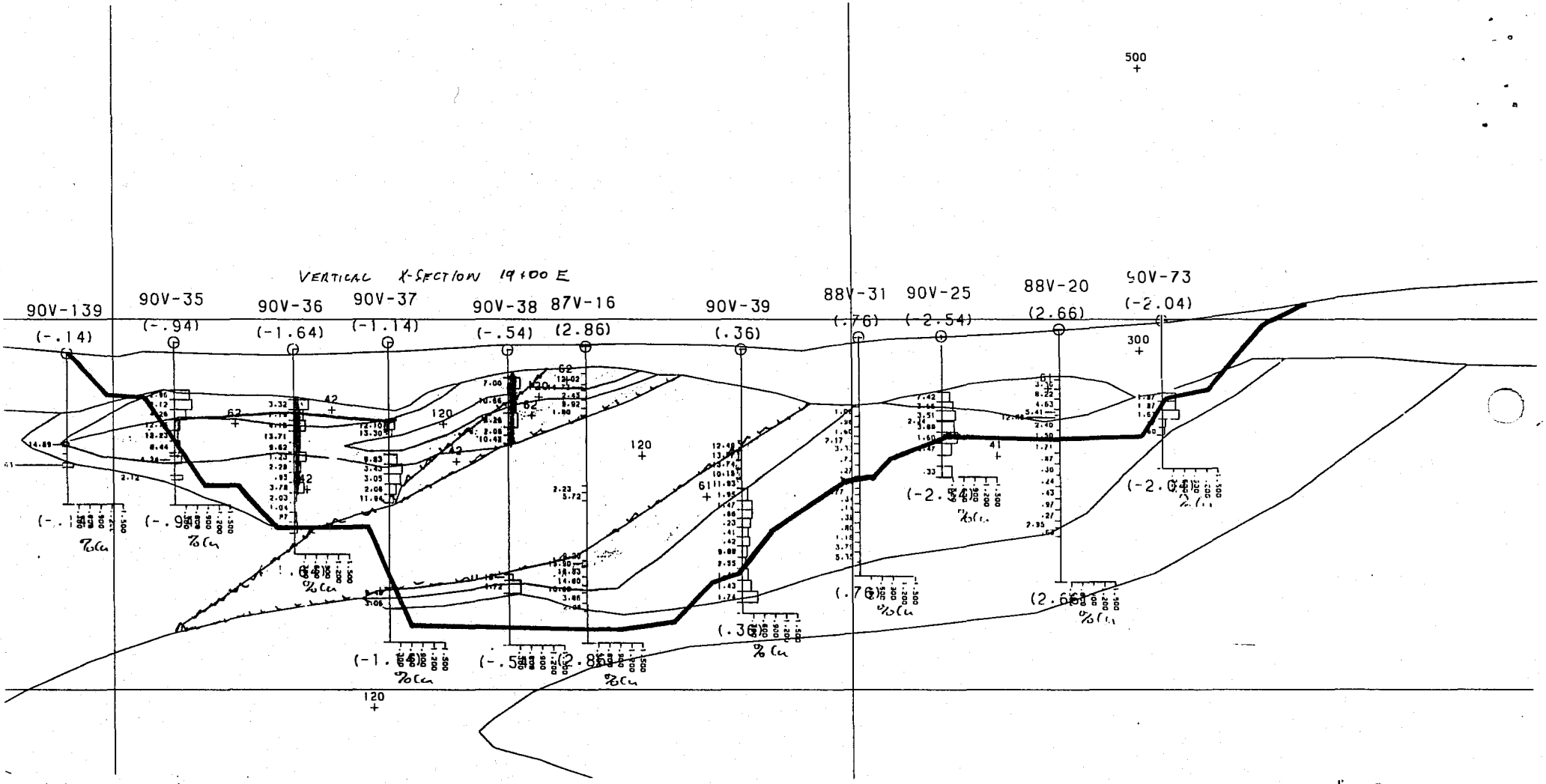
* TOTAL COPPER ASSAYS ARE REQUIRED FOR THIS HOLE.

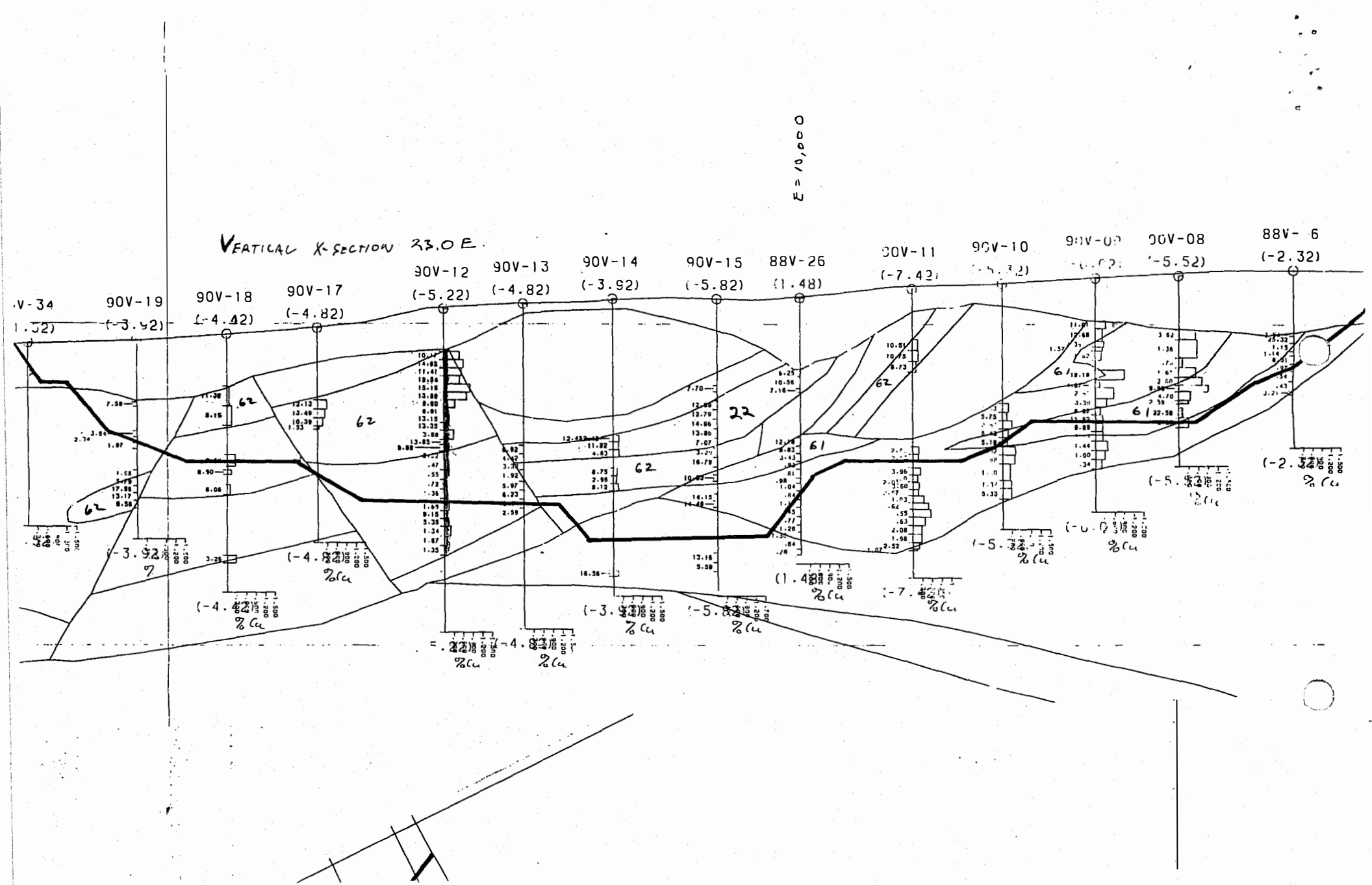
VERTICAL X-SECTION 12+00 E.




VERTICAL X-SECTION/ 13+00 E
90V-77
(-1.22)
90V-76
(-1.12)
88V-05
(.18)
90V-45
(-1.32)
90V-44
(-1.32)
90V-43
(-1.22)
90V-113
(-1.22)
90V-114
(-1.22)
90V-133
(-1.52)
500
300
110
120
61
41
21
%Cu


VERTICAL X-SECTION 17+00 E
E = 10,000
1150m
1100m
90V-139
90V-134
(7.50) (.70)
90V-71
(-1.80)
87V-15
(1.00)
90V-72
(-.90)
88V-19
(-.60)
90V-79
(-.20)
90V-80
(.40)
90V-40
(-1.00)
%Cu


VERTICAL X-SECTION 19+00 E
90V-139
(-.14)
90V-35
(-.94)
90V-36
(-1.64)
90V-37
(-1.14)
90V-38
(-.54)
87V-16
(2.86)
90V-39
(.36)
88V-31
(.76)
90V-25
(-2.54)
88V-20
(2.66)
90V-73
(-2.04)
500
300
120
62
42
61
41
%Cu


E = 10,000
VERTICAL X-SECTION 23.0 E.
90V-34
(1.32)
90V-19
(-3.92)
90V-18
(-4.42)
90V-17
(-4.82)
90V-12
(-5.22)
90V-13
(-4.82)
90V-14
(-3.92)
90V-15
(-5.82)
88V-26
(1.48)
90V-11
(-7.42)
90V-10
90V-08
(-5.52)
88V- 6
(-2.32)
62
61
22
% Cu