

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

GRADE-TONNAGE MODEL OF HOT-SPRING GOLD-SILVER:

A SUPPLEMENT TO U.S.GEOLOGICAL SURVEY BULLETIN 1693

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Survey editorial standards.

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# GRADE AND TONNAGE MODEL OF HOT-SPRING Au-Ag

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INTRODUCTION This model applies to the descriptive model for Hot-spring Au-Ag, number 25a, by Berger (1986). Estimated pre-mining tonnages and grades from the deposits listed below were used to construct the model. Where several different estimates were available for a deposit, the estimated tonnage associated with lowest cutoff grades were used.

The grade-tonnage model is presented in a graphical format to make it easy to compare this type with other deposit types (Cox and Singer, 1986), and to display the data. The plots (figures 1-3) show either grade or tonnage on the horizontal axis, whereas the vertical axis is always the cumulative proportion of deposits. The units are all metric and a logarithmic scale is used for tonnage and gold and silver grade. Each dot represents an individual deposit and the deposits are cumulated in ascending grade or tonnage. Smoothed curves, representing percentiles of a lognormal distribution that has the same mean and standard deviation as the observed data, are plotted through the points. Intercepts for the 90th, 50th, and 10th percentiles of the lognormal distributions are constructed.

COMMENTS Some of the recently discovered hot-spring gold deposits have reported grades that are much higher than those presented here. These higher grades may reflect the incomplete drilling of these deposits. No significant correlations between grades and tonnages were observed.

## DEPOSITS

<u>Name</u>	<u>Country</u>	<u>Name</u>	<u>Country</u>
Borealis	USNV	Lewis	USNV
Buckhorn	USNV	McLaughlin	USCA
Hasbrouck	USNV	Paradise Peak (FMC)	USNV
Hog Ranch	USNV	Round Mtn.	USNV
Ivanhoe	USNV	Sleeper	USNV

## REFERENCES

- Berger, B. R. 1986, Descriptive model for hot-spring Au-Ag deposits, in Cox, D. P. and Singer, D. A., eds., Mineral deposit models: U. S. Geological Survey Bulletin 1694, p. 143-144.
- Cox, D. P. and Singer, D. A., eds., 1986, Mineral deposit models: U. S. Geological Survey Bulletin 1694, 379p.

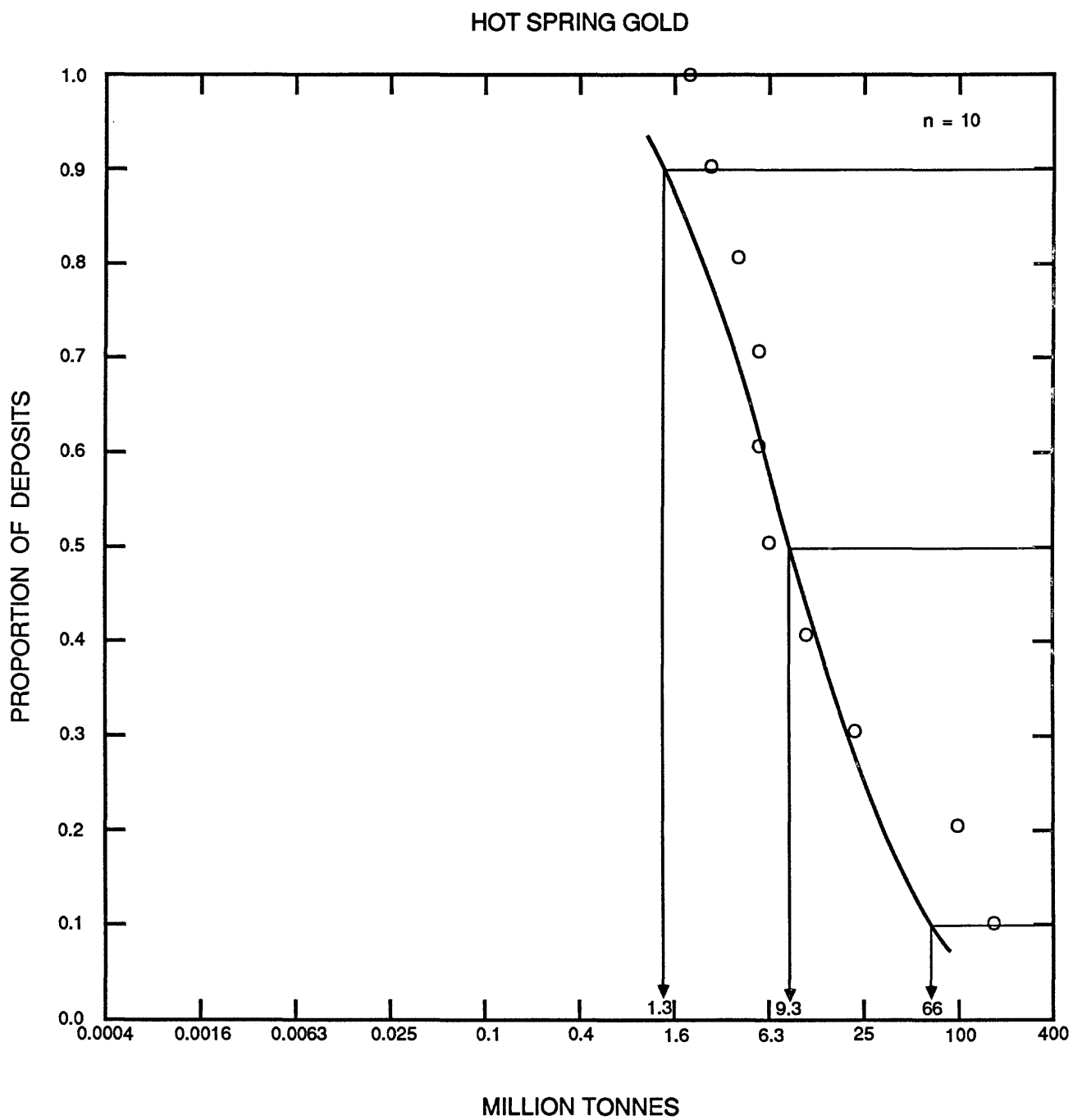
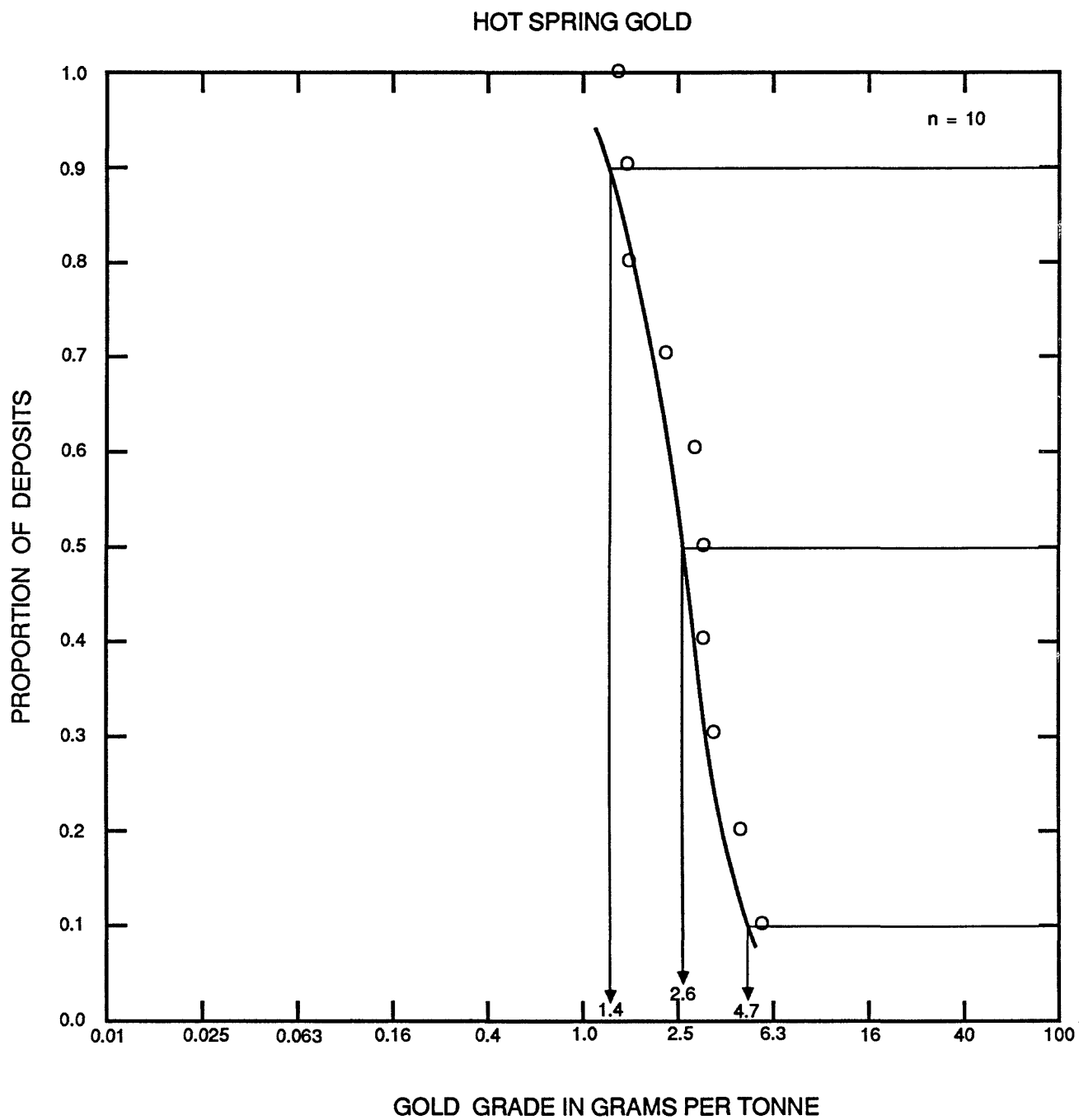


Figure 1. Tonnages of hot-spring Au-Ag deposits.



**Figure 2. Gold grades of hot-spring Au-Ag deposits.**

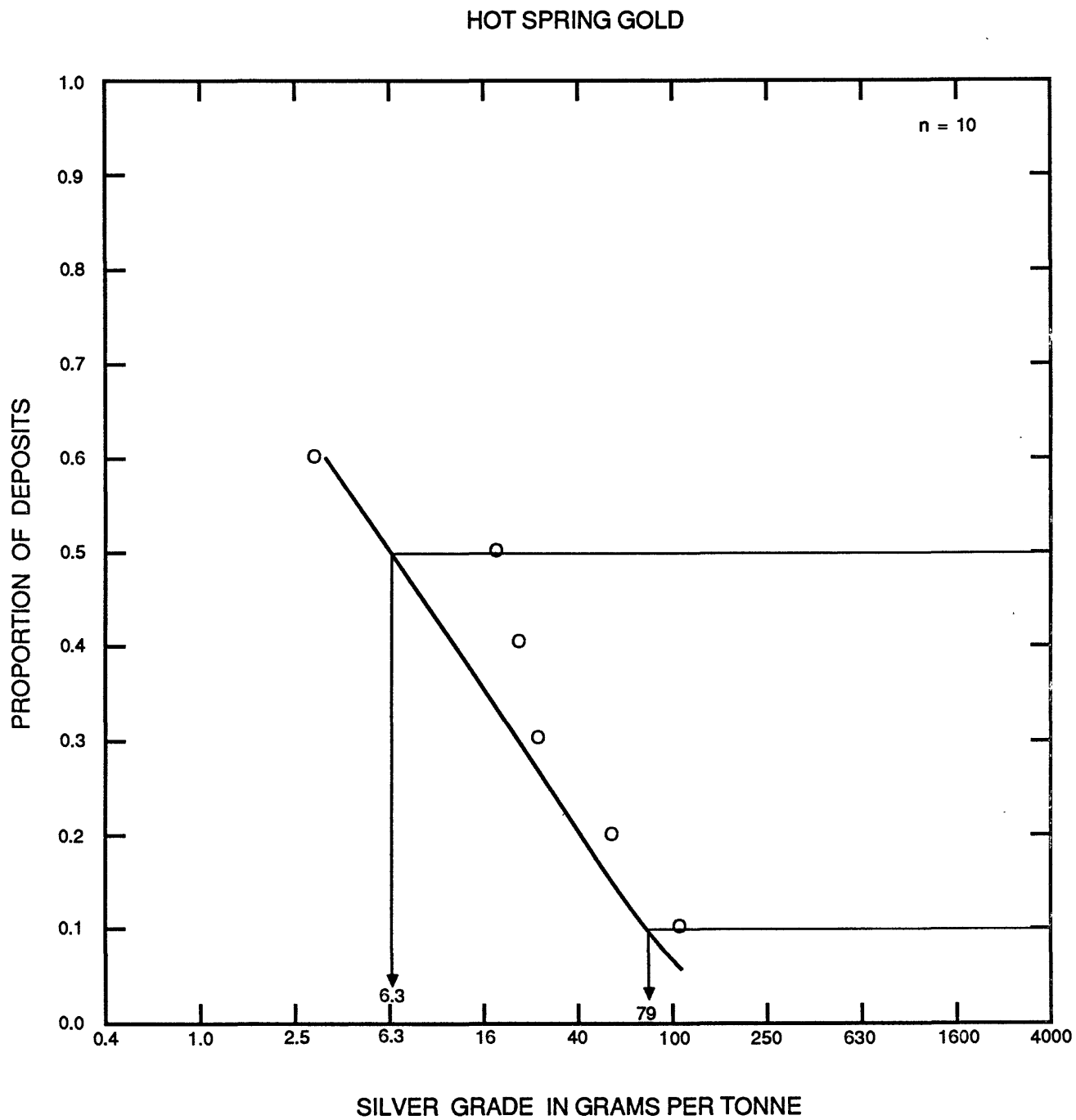


Figure 3. Silver grades of hot-spring Au-Ag deposits.