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Memorandum

USGS
Washington, D.C. 20242
Nov 7, 1966

TO : whomever it may concern

DATE: October 26, 1966

FROM : Paul Barton

SUBJECT: Sphalerite "standards" for microprobe work

In the move to the new lab here at the GSA building I have misplaced or lost, the standards that I used in the calibration for the Fe-Zn-S paper. However, I do have small amounts (a few tens of milligrams) of a great many synthetic sphalerites whose composition should be known accurately. These have accumulated over the years and have been prepared under a variety of conditions not all of which are necessarily found in my notebooks. Moreover, the grain size of some of these may be so small as to provide difficulty in preparing good polishes. It is also possible, tho I think not probable, that 1 or 2 of these may be heterogeneous due to incomplete homogenization. Therefore, I offer these for your entertainment and expect that good results may be obtained, but don't you be too surprised if a sample gives unacceptably large scatter -- just chalk it up to your experience and my poor bookkeeping.

Sample number	Mole percent FeS
430A	30.0
435A	35.0
440A	40.0
445A	45.0
450A	50.0
58	7.47
108	17.60
103	10.0
104	5.0
ZnS	0.0

Several of these may contain small amounts of native iron. In synthesis the iron was added to FeS + ZnS to assure the very low f_{S_2} necessary for homogenization. It does not shift composition from that advertized.

Pyrrhotites

	Atom % Fe
Fe 47.585	47.585
Fe 49.240	49.240
Fe 47.995	47.995
FeS + Fe	50.00