

THE UNIVERSITY OF BRITISH COLUMBIA
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VANCOUVER, B.C. CANADA
V6T 2B4

DEPARTMENT OF
GEOLOGICAL SCIENCES

April 12, 1982

Dave Jennings
Cyprus-Anvil Mining Corporation
Marine Building
Vancouver, B.C.

Dear Dave,

Here are the galena analyses from M8189, M8118, and Sun/Moon. I ran each galena in duplicate and ran three Broken Hill galenas as internal standards to assure accuracy in the precision of measurements. The agreement on duplicates is good for M8118 but not fabulous for the other two; this could be the result of inhomogeneities in Pb isotopic composition from grain to grain in galena. Each duplicate represents a different dissolution on a separate galena crystal.

The results for the Broken Hill data are as follows:

ratio	ave. of 3 (95% conf.)	accepted value	fractionation
207/204	15.3428+/-0.05%	15.389	-0.1%/At.Mass Unit
208/204	35.4903+/-0.04%	35.657	-0.12%/AMU
206/204	15.9802+/-0.02%	16.003	-0.06%/AMU

Applying a fractionation correction of +0.1%/AMU to the analyses of the samples, we get the following:

sample	206/204 (95%CI)	207/204 (95%CI)	208/204 (95%CI)	
M8118	19.4310+/-0.1%	15.7406+/-0.1%	39.4299+/-0.1%	n=2
M8189	19.2889+/-0.3%	15.6848+/-0.4%	39.1969+/-0.4%	n=2
Sun/Moon	19.1499+/-0.3%	15.8264+/-0.4%	39.2965+/-0.4%	n=2

note: these errors include all errors related to reproducibility.

Our National Bureau of Standards Common Pb also shows about 0.1%/AMU fractionation.

11:15:00
11:15:00
WILSON

THE UNIVERSITY OF BRITISH COLUMBIA

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The accompanying graph shows where your samples and their 95%CI errors plot in relation to Stacey-Kramers growth curve for average crustal Pb and to the model growth curve for Cordilleran shale basins of Godwin and Sinclair (orange dashed line). The field of analyses of the major ore deposits (Pb-Zn) in shale-hosted rocks is also shown by the penciled dashed field.

Interpretation:

M8189 and M8118 fall near the shale growth curve opposite 50Ma to 140Ma, and I would say that the source of the Pb is the shales, but that the Pb has been mobilized only recently, perhaps by Cretaceous-Eocene plutons. It would be surprising to me if these deposits turned out to be anything but vein deposits, not related to stratiform syngenetic sulphides. At least, that would be the interpretation based on Pb isotopes.

Sun/Moon, however, falls closer to the field of stratiform deposits—it may be either—the data is not clearcut, although it does not fall within the field of shale-hosted stratiform Pb-Zn deposits.

On the basis of the Pb isotopes, none of these look like good candidates for Anvil or Driftpile-Cirque-type deposits.

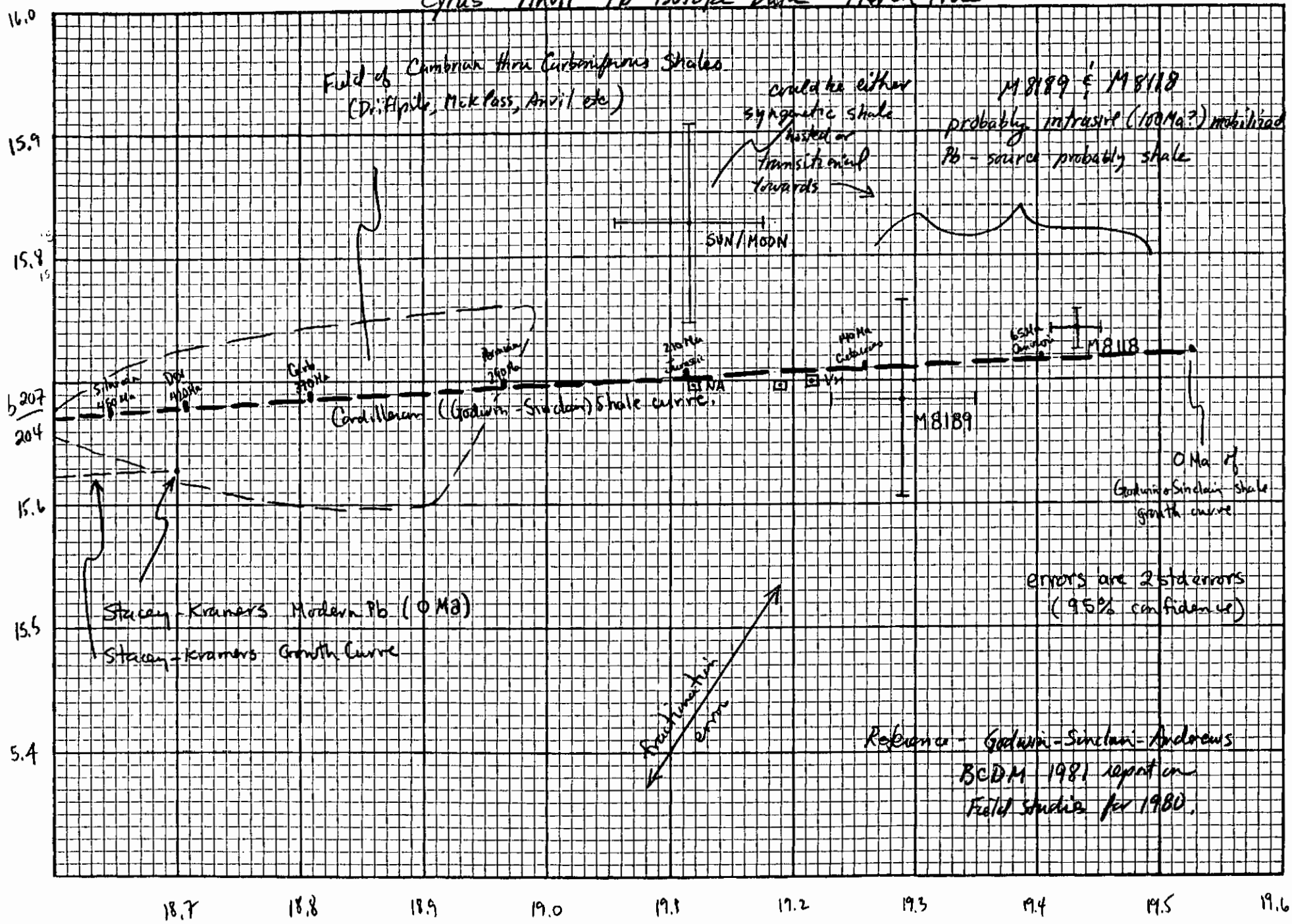
See the attached sheet for charges; if you would like further work done, please don't hesitate to let me know. Your results will be held in confidence. Turnaround time for further work will be shorter.

Regards,

Randy

Randy Parrish,
Research Associate

Cyrus - Anvil Pb Isotope Data March 1982



Pb $\frac{206}{204}$