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Item 4

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MINERAL EXPLORATION  
MINING GEOPHYSICS  
MINING GEOLOGY

August 13, 1969

Mr. Robert D. Cowdery  
Petroleum, Inc.  
860 Petroleum Club Building  
Denver, Colorado 80202

Dear Bob:

In the final paragraph of my report on geologic examinations of the Nevada Garvey Ranch lands I recommended special exploration for gold in the Tertiary volcanic rocks of the volcanic plateau in the northeast part of the Garvey area. The chief basis for this proposal is the fact that the general geologic situation here is very similar to two other localities in central Nevada where gold occurs in young basic volcanics.

*108*  
*Eureka*  
In the Buckhorn district, Eureka County, north and east of the old camps of Cortez and Mill Canyon, a \$1.6 million gold ore body was mined in a small open pit, in a complex north-south fault zone in fairly young Tertiary basaltic andesite. In the mineralized zone the hard black andesite has been hydrothermally altered to a white kaolin clay. The gold is extremely fine and cannot be panned or seen under ordinary magnification.

The entire east slope of the Cortez Range in this area is a dip slope on the andesite, which is cut by a series of these north-south normal faults. Recently I have been associated in exploration work that has greatly extended the mineralized zone along the strike and has found a second similar zone farther up the dip. Showings now are such that one of the large exploration companies has taken over for drilling and other development work.

*153, 156*  
*Lander*  
Also in the Shoshone Range, next west of the Cortez Range, gold occurs in Piro Canyon in hydrothermally altered and bleached basaltic andesite. Again, the entire east slope of the range is a dip slope on the andesite, which is cut by similar faults.

*133, 138, 142*  
*Humboldt*  
A very similar geologic situation exists in the northeast part of the Garvey area, where the volcanic flows form the north part of the Santa Rosa Range and dip gently eastward into the volcanic plateau. Rich gold mineralization occurred in the volcanic rocks at the National mine in the Santa Rosa Range (see geologic map), and it is quite possible that mineralization occurs elsewhere in these rocks. To the best of my knowledge they have not been thoroughly explored, nor would the extremely fine gold be found by ordinary prospecting methods.