

Chicago, October 15, 1946  
11-R23

Mr. B. M. Snell  
Industrial Engineer

Our analyses of the samples of rock, granular and other materials labeled Wallace Bell Nos. 1, 2, 3, 4 and 5, from the vicinity of Riverton, Wyoming, showed as follows:

	Wallace Bell - Samples Numbered				
	#1	#2	#3	#4	#5
Silicon Dioxide	81.32%	53.25%	57.95%	69.12%	3.02%
Ferrous and ferric oxide	Trace	Trace	Trace	Trace	Trace
Aluminum Oxide	11.70%	19.90%	39.50%	23.70%	4.40%
Calcium Oxide	Trace	6.39%	Trace	Trace	30.28%
Magnesium Oxide	1.41%	4.77%	0.94%	2.79%	18.14%
Potassium Oxide	0.93%	6.31%	---	0.14%	0.67%
Sodium Oxide	3.50%	3.00%	---	2.38%	1.39%
Phosphorous pentoxide	---	0.04%	---	---	---
Sulphur Trioxide	Trace	Trace	Trace	0.34%	0.58%
Carbon Dioxide	0.32%	5.63%	0.62%	0.57%	41.09%
Free Moisture	0.23%	0.58%	0.39%	0.56%	0.40%
Total	99.41%	99.87%	99.40%	99.80%	99.97%
Loss on Ignition	0.59%	4.35%	8.07%	4.88%	33.14%
Color	Greenish Gray	Greenish gray	Buff	Gray	Grayish Brown
Appearance	Sand Stone	Fine Texture Rock	Chalky	Fine Chalky Texture	Irregular Texture

Sample No. 1 Does not contain any appreciable amount of Potash but is essentially Aluminum Silicate and Silica.

Sample No. 2 Has an appreciable amount of Potash but it is our opinion it is in the form of Silicates and, therefore, of little value. The Phosphate content is extremely low. This rock material is principally Aluminum Silicate and Carbonate of Lime and Magnesium.

Sample No. 3 Is principally Aluminum Silicate and not a chalk rock nor what is known as Calcite. (7-33, 394) *But about as fine as*

Sample No. 4 Is what is known as Bentonite. It has a decided water absorbing quality and breaks up rapidly when immersed in water. This material is a fine grained alkaline clay, which is a product of volcanic ash. This particular material is of little value as a scouring powder because of its characteristic of forming a gel-like substance when mixed with water and acts similar to a slippery soap.

Mr. B. H. Snell

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10-15-46

Sample No. 5 is definitely not a Potash bearing rock. This rock is principally Calcium and Magnesium Carbonate containing sufficient Aluminum Silicate to form a reasonably hard rock.

*R. E. Longman*



Clay

November 17, 1943

Mr. Daniel Rhodes  
Box 389  
Saratoga, Calif.

Dear Mr. Rhodes:

I wish to thank you for your great kindness in sending the tray made from clay from near Cody, and I am especially pleased to have your sketch map showing the location of the deposit.

The University is establishing a research station for the investigation of Wyoming natural resource materials. The director is Dr. H. G. Fisk who was in charge of the ceramics and non-metals division at Armour Foundation in Chicago. Dr. Fisk is interested to know what disposition was made of the ceramic equipment at the Heart Mountain Relocation Center. Could you suggest to whom I might write to find out whether the equipment would be available for loan or purchase by the University?

I hope you find your new work pleasant and send my sincerest best wishes.

Cordially yours,

Horace D. Thomas  
State Geologist

CLAY  
From the Clowesky

Sept 5, 1943

Dr. Horace Thomas,  
State Geologist  
Jaramie, Wyo.

Dear Dr. Thomas,

I am sending under separate cover a small tray made from clay we found near Heart Mountain. As you may have heard the ceramic project at the center was discontinued except for high school classes. I came to California in February and am now doing ceramic engineering work for the A. J. Kaiser Co.

We did find a pottery clay before I left which I consider to be excellent. It is between two tilted beds of stone, near the first site we visited when you were in Cody. The deposit appears to be about 10 feet thick and extends for at least a mile.

The tray was fired to about 1200° C. The clay could be used for pottery, school modeling, earthen ware or stone ware articles, etc.

I appreciate your assistance in helping to locate this clay deposit.

Sincerely  
Daniel Rhodes  
Box 389, Saratoga, Cal.

September 16, 1942

Re: Clays

Mr. Daniel Rhoades  
War Relocation Authority  
Heart Mountain Relocation Project  
Cody, Wyoming

Dear Mr. Rhoades:

I believe your investigation of clays in the Cody region will necessarily be of the "trial and error" method.

Many of the <sup>C</sup>retaceous clay shales of Wyoming are known to be suitable for brick clay and tile products. Rocks of that age are common around Cody.

Some years ago one of the <sup>oil</sup> companies operating in the state used the ceramic properties of the dark shales as a method of identifying different units in the drilling of deep wells. Different parts of the shale units were found to yield a different product when made into briquets. The brick plant at Parco originated as a result.

Fire clay occurs in the Lakata group near Boulder, Colorado, and not long ago Mr. Robertson, owner of the brick plant at Lovell, consulted with me regarding the possibility of fire clay occurring in the Big Horn Basin. All I could suggest was that he search for it, perhaps in the underclays of some of the coal seams. He perhaps might give you helpful information.

At any rate, if you should have need of my services in the field I should be glad to come to Cody in order to help.

Yours truly,

Harold D. Thoms  
State Geologist

HDT:vh

cc: Mr. W. W. Bradford  
Project Director  
War Relocation Authority  
Cody, Wyoming

7.500000  
Clay

