

MEMORANDUM RELATING TO EXAMINATION OF THE CLAY RESOURCES OF THE  
STATE FARM AT VANDALIA, ILLINOIS

\*\*\*\*\*

C.W.Parmelee

MINERAL RESOURCE  
RECORDS DIVISION  
*Parmelee, C.W.*  
*Ms. 1 -*  
ILLINOIS STATE  
GEOLOGICAL SURVEY

In company with Mr. J. E. LaMar, geologist representing the  
State Geological Survey, and the writer, representing the Department of  
Ceramic Engineering, visited the State Farm north of Vandalia, Illinois,  
on May 13, 1923.

This visit was made for the purpose of examining the property  
to determine the availability of raw materials suitable for making  
brick, drain tile and cement products.

Method of Examination.- In examining the property we had the  
assistance of Mr. Bailey, an attache of the farm who was well informed  
regarding the boundary of the property and also the character of the  
land. Also, we were furnished with two laborers.  
Exploration was carried on by means of pits which were sunk to a conven-  
ient depth. In the bottom of these pits holes were dug by means of  
post hole augers. The location of the various holes was on high  
ground in the western and north-western part of the property, since it  
appeared inadvisable to conduct explorations on the flats, owing to the  
frequent flooding of the same, and also because such locations are  
not likely to be productive of usable clay. Further, we had the  
information that two wells had recently been dug not far from the office.  
Both of these were sunk to a depth of approximately 15 ft. and in both  
instances they passed thru sand and silt without encountering any clay.  
The accompanying map indicates the location of the various test pits  
which were sunk. These are numbered to conform with the text.

Location of test holes:- Holes No.1 and No. 2 were sunk on the top of a deposit of molding sand which is found on the old Capp's farm in the S.W. corner of Section 33.

Hole No. 3:- This was located in the N.W. quarter of the S.W. 1/4 of Section 33, approximately 500 ft. from the property line and at about the same distance from the Lee-Logan Trail. The hole was dug to a depth of 5-1/2 ft. through sand and loam. No consistent deposit of gravel nor clay was encountered.

Hole No. 4:- Located in the N.E. 1/4 of S.W.1/4 of Section 33, about 500 ft. east of the Lee-Logan Trail. The hole was dug to a depth of about 3-1/2 ft. through sandy loam, which at the bottom was somewhat more clayey. Some pebbles were encountered in this clay. This hole is located on the brow of the highland which slope to the flats on the east.

Hole No. 5:- Located in the N.E. 1/4 of N.W. 1/4 of Section 33, on the brow of the slope at a distance of approximately 600 ft. east of the Lee-Logan Trail. The hole was dug to a depth of 4 ft. through loam which became more sandy near the bottom. Small pebbles were encountered in the loam.

Hole No. 6:- Located in the Ireland tract in Section 28 nearly on the line between the S.E. 1/4 and S.W.1/4, at a distance of approximately 300 ft. north of the line between Sections 28 and 33. This hole was sunk to a depth of about 4-1/2 ft. through sandy loam.

The bluff at the N.E. corner of the property on the Kaskaskia River:- The face of the bluff seems to be loam or sandy loam with a small amount of fine gravel scattered through it, and without

indications of clay deposits of any consequence. The line of springs is at a height of approximately 5 ft. above the water level in the creek. In general the absence of springs along the foot of the slope throughout the property would seem to indicate that the uplands consists of loose sandy material through which water drains freely into the lower levels.

Road Section:- The section along the Lee-Logan Trail in the S.W.1/4 of Section 33 was as follows:

Top - One ft. more or less of soil

Six ft. " " " " loam

Four ft. " " " " grit and gravel in size ranging up to that of hickory nut. This is firmly cemented by calcareous material.

Two and 1/2 ft. more or less of material cemented with a calcareous bond.

Two ft. more or less of a sandy loam.

Summary:- All observed indications point to the deposit being of a sand or sandy loam with possibly thin streaks of clay embedded. It is a glacial till deposit. The clay beds, if present, are probably more or less mixed with pebbles and are not likely to be either of much depth or uniformity throughout any considerable area. The clayey material which was found does not seem to be of sufficiently good grade to warrant use in the manufacture of brick.

Suggestions regarding further examination:- In case further examination of this deposit seems to be desired for this purpose, test borings or pits should be sunk at regular intervals throughout the farm. This will involve a very considerable amount of labor

and time.

Cement materials:- No evidence of any lime-stone deposit was observed in this examination.

Molding Sand:- Holes No. 1 and No. 2 previously referred to were sunk on the top of a deposit of molding sand. This deposit was visited in 1920 by Dr.M.C. Leighton of the State Geological Survey . He states that the sand shows excellent molding properties. The deposit is exposed on its western face, which rises to a height of approximately 30 ft.,and which is estimated to be from 12 to 15 ft. thick on the slope, and which occupies a narrow shoulder averaging 30 yds. wide and 150 yds. long.

May 15, 1923.

C. W. PARMELEE, Professor  
and Acting Head of Dept.  
R. K. HURSH, Associate Professor  
E. N. BUNTING, Research Associate  
T. N. McVAY, Instructor

UNIVERSITY OF ILLINOIS

DEPARTMENT OF CERAMIC ENGINEERING

1923-1924

URBANA, ILLINOIS

GERTRUDE COADY, Clerk  
E. G. BOURNE, Potter  
J. H. CAIN, Mechanician  
T. J. WILSON, Laboratory Attendant

2154-49

May 23, 1923

Mr. J. E. Lamar

Geological Survey

Dear Mr. Lamar:-

Warden Brown of the State Farm at Vandalia forwarded to me a sample of clay which was taken from a test hole about 10 ft. from the one which we put down on the Ireland tract. The clay starts about ten inches from the surface and continues for a depth of 5 ft. There is only about 15" of very tough clay, and the remainder is sandy. The test hole stopped at the five foot depth in sand. The sample received is a typical surface clay, but the record which he has sent conforms admirably with the conclusions which we had arrived at regarding the uncertainty of the deposit on that property.

With kindest regards, I am

Very truly yours

*Cullen W. Parmelee*

C.W. Parmelee

CWP/C

*To be placed with  
Parmelee's report  
filed in  
mes. drawer  
in file room.*