THE UNIVERSITY OF TEXAS AT AUSTIN
**Bureau of Economic Geology**
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## MINERAL RESOURCE SURVEY
**Circular No. 29**

The information contained in this circular was gathered by a unit of the WPA Mineral Resources Survey of Texas, a project sponsored by The University of Texas, Bureau of Economic Geology. The purpose of this survey is to assemble information concerning mineral products and to gather other geologic data and make it available to the public. With this information in the hands of the public, it is reasonable to suppose that industries of value to the State may be developed. The following report is based on work done in Collingsworth County by Work Project No. 4094, from June 1 through August 15, 1936.

## REPORT OF THE MINERAL RESOURCES OF COLLINGSWORTH COUNTY, TEXAS*
**by Ben F. Baldwin, Supervisor**

The purpose of this survey was to locate and map deposits of mineral products and to determine the quantity and quality of these natural resources available for commercial use.

### *SAND AND GRAVEL*

Deposits of sand and gravel are present in terraces of the major streams, Buck Creek, Salt Fork of Red River, and Elm Creek. These materials are usually more abundant in the third terrace, which terrace varies in height from 40 to 80 feet above the present stream level. The sands and gravels are intermixed, the percentage being about one-third gravel and two-thirds sand. Materials taken from terrace deposits in the county were used on State Highway No. 4 and as an aggregate for concrete in the construction of U. S. Highway No. 66 in Wheeler County.

*Gravel pits in the county.* — Following is a list of gravel pits examined in the county.

(1) *Location:* NE corner NW½ Sec. 62, Blk. 16.
*Size:* The present pit covers an area of about 5 acres. The deposit varies in thickness from 40 to 60 feet and extends over about 20 acres. There is from 1 to 3 feet of overburden.
*Remarks:* Gravel from this pit was used by the city of Wellington for paving streets.

(2) *Location:* SW corner Sec. 62, Blk. 16.
*Size:* This pit covers 30 acres, and the deposit extends over an area several times as large. The deposit is from 40 to 50 feet thick.
*Remarks:* Sand and gravel from this pit have been used in the construction of 14 miles of pavement. The gravel has to be washed.

(3) *Location:* On the south side of Elm Creek on old Shamrock-Wellington highway.
*Size:* This deposit covers 120 acres and is from 20 to 30 feet thick.
*Remarks:* This gravel caps rounded hills. The base of the deposit is 100 feet above the stream bed. Gravel from this pit was used in the construction of approximately 20 miles of pavement in Wheeler County.

(4) *Location:* Six miles south of Wellington on pavement, 2½ miles east on north side of the road.
*Size:* This pit covers 5 acres, with the depth of the deposit varying from 18 inches to 5 feet
*Remarks:* This deposit is not in the stream terrace. It covers the summits of small rounded hills. Material from this location has been used by the city of Wellington to hard surface streets.

### *VOLCANIC ASH*

Deposits of volcanic ash are present at various places in a gypsum belt 20 miles wide which runs 25 degrees east of north across Collingsworth County. The writer believes that this gypsum outcrop is the Childress gypsum of the Blaine formation, a division of the Double Mountain group, of Permian age.

Nearly pure volcanic ash has been found at seven localities. The thickness of these deposits ranges from 4 to 34 feet. It is reported to be over 100 feet thick in some places, but this report could not be verified with the facilities available to the project. These deposits of soft ash are covered with a thin overburden, from 1 to 6 feet in thickness, and could be easily mined by the open pit method.

Volcanic ash has a number of uses, its use in the refining of petroleum products being the most important. Large quantities are used in the manufacture of soaps and various polishing agents. It is also used in the manufacture of paints, asphalt, cement, and sweeping compounds.

*Deposits in the county.* — Following is a list of volcanic ash deposits examined in the county.

(1) *Location:* SE corner Sec. 90, Blk. 14, 0.75 mi. south of Buck Creek School house on west side of the road.
*Size:* 78 feet in diameter, 24 feet thick.
*Remarks:* The outcrop is the form of a rounded hill. There is no overburden.

(2) *Location:* SW ½, Sec. 89, Blk. 14, along a small ravine draining into Buck Creek.
*Size:* 50 feet long, 10 feet thick, width undetermined. The thickness of the overburden varies from 1 to 8 feet.

*Assistance in the preparation of these materials was furnished by the personnel of Works Progress Administration Official Project No. 65-66-4975 and Work Projects Administration Official Project No. 665-66-3-233.

(3) *Location:* SE ¼, NE ¼, Sec. 81, Blk. 19.
*Size:* 11 feet long, 10 feet thick, width undetermined.
*Remarks:* This deposit is overlain by 5 feet of red clay and 5 feet of sandstone.

(4) *Location:* SW ¼, Sec. 71, Blk. 14.
*Size:* 380 feet long, 120 feet wide, and from 4 to 15 feet thick.
*Remarks:* This outcrop is found on the sides and tops of rounded hills. These hills are covered with a mantle of soil and gravel ranging from 6 inches to several feet in thickness.

(5) *Location:* NE ¼, Sec. 13, Blk. 12, in vertical banks along the east side of Wolf Creek.
*Size:* 724 yards long, 300 yards wide, from 4 to 24 feet thick.
*Remarks:* The overburden ranges from 6 inches to 10 feet in thickness. This deposit is quite pure except along the northern portion of the outcrop.

(6) *Location:* SE ¼, NE ¼, Sec. 32, Blk. 12.
*Size:* 50 feet long, 20 feet wide, thickness undetermined.

(7) *Location:* NW corner Sec. 14, Blk. 12.
*Size:* 4 feet long, 3 feet wide, thickness undetermined.
*Remarks:* The outcrop is along a barrow ditch. There is from 1 to 3 feet of overburden.

(8) *Location:* SE ¼, SE ¼, Sec. 13, Blk. 12, on a small tributary of Wolf Creek.
*Size:* 100 feet long, 10 feet thick, width undetermined.

(9) *Location:* NE ¼, Sec. 86, Blk. 11, along the bed of a small intermittent stream.
*Size:* 300 feet long, 200 feet wide, 20 feet thick.
*Remarks:* The overburden varies from 0 to 5 feet.

(10) *Location:* SW ¼, SW ¼, Sec. 95, Blk. 15, on top of a small hill.
*Size:* 15 feet in diameter.
*Remarks:* Surrounding this outcrop are higher hills capped with gypsum and dolomite.

(11) *Location:* Center of the NW ¼, NW ¼, Sec. 86, Blk. 11, on top of a small hill, a short distance from a dry creek.
*Size:* 15 feet in diameter.
*Remarks:* The overburden ranges from 1 to 3 feet in thickness.

(12) *Location:* NE ¼, Sec. 99, Blk. 15, along a small intermittent stream.
*Size:* 640 yards long, 127 yards wide, from 4 to 12 feet thick.
*Remarks:* The overburden ranges from 0 to 4 feet.

(13) *Location:* NW ¼, NE ¼, Sec. 52, Blk. 12, along the crest of a small elongated hill.
*Size:* 60 feet long, 40 feet wide, 8+ thick.
*Remarks:* This deposit is discontinuous. There is no overburden.

(14) *Location:* SW ¼, SW ¼, Sec. 16, Blk. 15, along a small ravine.
*Size:* 110 feet long, 100 feet wide, 5 feet thick.
*Remarks:* The overburden ranges from 0 to 4 feet. This deposit of ash is stratified.

(15) *Location:* SE ¼, NW ¼, Sec. 15, Blk. 15, along a small ravine.
*Size:* 51 feet long, 42 feet wide, 8 feet thick.
*Remarks:* The overburden ranges from 0 to 4 feet.

(16) *Location:* Along a ravine near a windmill in the W ¼, Sec. 15, Blk. 15.
*Size:* 210 feet long, 105 feet wide, 8+ feet thick.
*Remarks:* The overburden ranges from 6 inches to 4 feet.

(17) *Location:* Center of the NW 80, SW ¼, Sec. 15, Blk. 15, along the side and top of a small rounded hill.
*Size:* 288 feet long, 168 feet wide, 8 feet thick.
*Remarks:* The overburden ranges from 2 to 3 feet

(18) *Location:* Center of Sec. 6, Blk. 15, on the west side of a small creek.
*Size:* There are two main deposits, one 195 feet long and 51 feet wide; the other is 210 feet long and 120 feet wide. The average thickness is about 10 feet.
*Remarks:* Faulting has separated this deposit into two parts. The overburden ranges from 0 to several feet.

(19) *Location:* NE ¼, Sec. 6, Blk. 15, along a small creek.
*Size:* 300 feet long, 150 feet wide, 35 feet thick.
*Remarks:* About 1 mile west of this deposit a well dug for water is reported to have been put down 100 feet in volcanic ash without passing through the deposit. The overburden ranges from 6 inches to 3 feet.

## *BUILDING STONE*

Dolomite caps the Childress gypsum in a belt 12 miles wide. The writer believes that this dolomite is the Childress dolomite of the Blaine division of the Double Mountain group. Most of the dolomite occurs in layers from 1 to 8 inches thick. The stone is easily quarried and is an excellent building stone. It is fairly soft when freshly exposed but after being exposed to air, becomes very hard. This dolomite has been used in the construction of many houses in the county.