OKLAHOMA GEOLOGICAL SURVEY
Charles J. Mankin, *Director*

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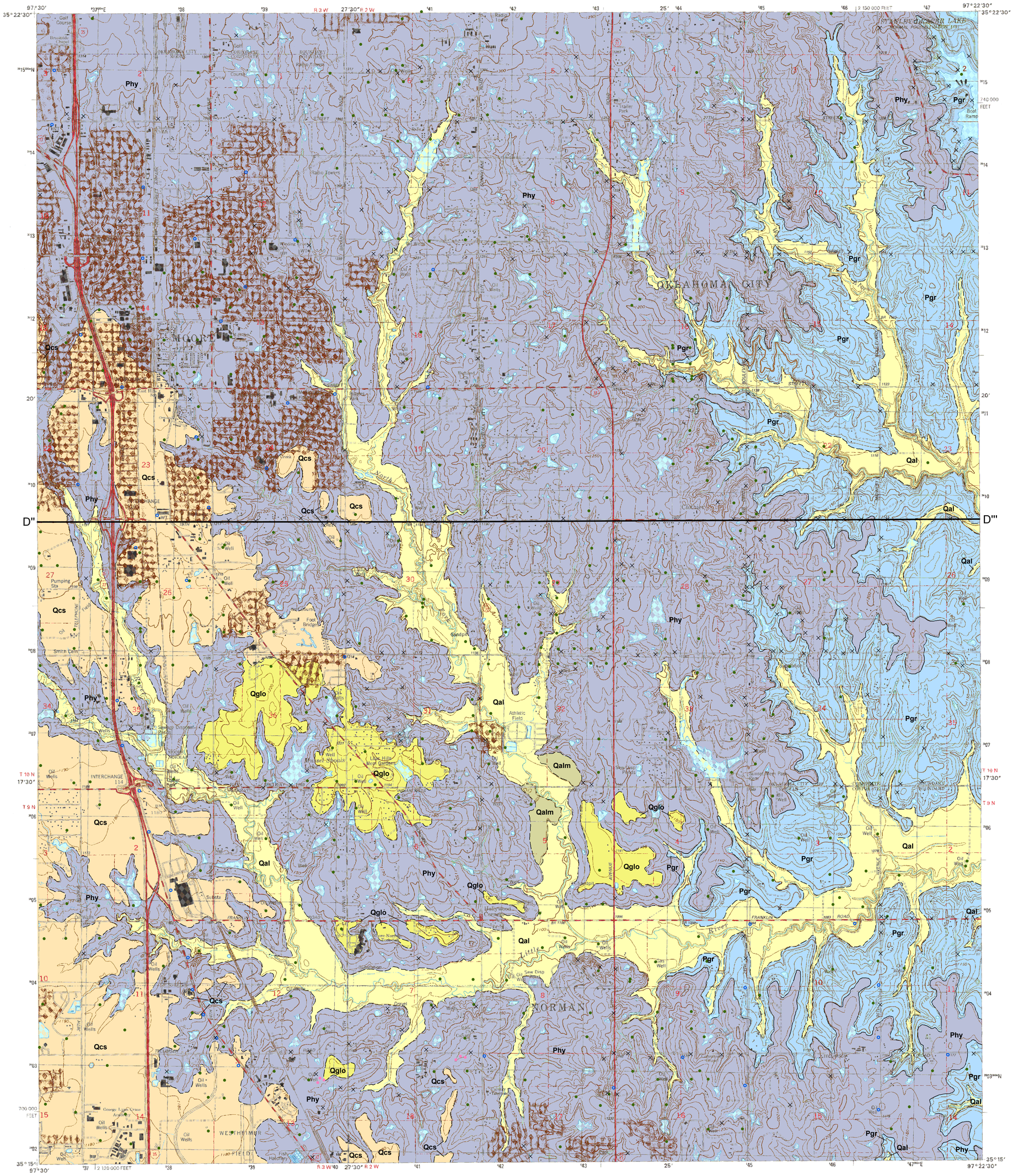
Oklahoma Geologic Quadrangle **OGQ-25**
**Geologic Map of the Moore**
**7.5 Quadrangle**
(previously Open-File Report OF7-2001)




## CORRELATION OF MAP UNITS

| | | |
|---|---|---|
| Qal | HOLOCENE | QUATERNARY |
| Qalm | | |
| Qcs | PLEISTOCENE | |
| Qglo | | |
| **UNCONFORMITY** | | |
| Phy | LEONARDIAN | PERMIAN |
| Pgr | | |

## DESCRIPTION OF UNITS

**Qal** ALLUVIUM (Holocene)–Clay, silt, sand, and gravel in channels and on flood plains of modern streams. Includes terrace deposits of similar composition located directly above and adjacent to modern channels and flood plains. Thickness: 0 to about 30 ft

**Qalm** ALLUVIUM OF LITTLE RIVER (Holocene)–Clay, silt, sand, and gravel on Recent flood plain of Little River about 5 - 10 ft above most recent alluvial valley. Areas rarely subject to flooding. Thickness unknown, possibly as much as 20 ft

**Qcs** COVER SAND (Pleistocene)–Very fine grained to coarse-grained silt and clay, moderately to poorly sorted. Consists mainly of rounded to subrounded quartz grains, with abundant silt and clay-size material. Forms extensive nearly flat topographic surfaces as much as 50 ft above modern alluvial valleys. Probably represents eolian reworking of older Pleistocene-aged terrace deposits. Thickness: from a thin veneer to as much as 10 ft, averages closer to 3 ft

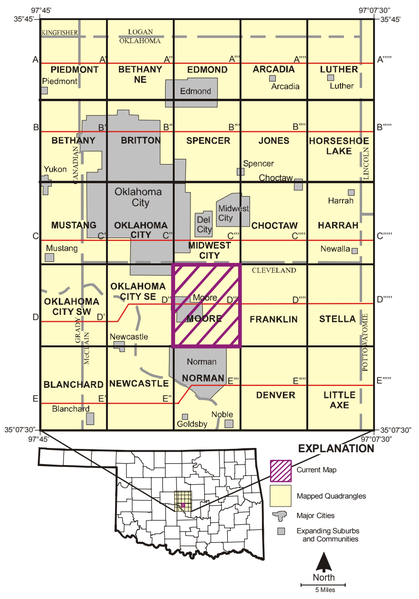
**Qglo** REMNANTS OF OLDER TERRACE DEPOSITS (Pleistocene)–Clay, silt, sand, and gravel adjacent to flood plain of Little River. Sand commonly is medium- to coarse-grained and very light colored; gravel locally consists of concentrations of distally derived pebbles and cobbles, mostly well rounded and sub-discoidal quartz and metaquartzites. Base of unit is about 30 ft to 60 ft above the modern flood plain and ranges in elevation from 1130 ft to 1190 ft above sea level. The top of the unit is as much as 70 ft above the modern flood plain and is as high as 1230 ft above sea level. The majority of these deposits occur along the north side of Little River. Thickness: 0 to 35 ft, averages about 10 ft

**Phy** HENNESSEY FORMATION (Permian)–Shale and siltstone, poorly exposed, mostly moderate reddish brown (10R4/6), moderate red (5R4/6), to moderate reddish orange (10R6/6) with conspicuous light greenish gray (5GY8/1) iron-reduction spots. The lower 20 - 30 ft is predominantly a blocky-weathering, silty shale and clayshale that exhibits good paleosol development; locally with lenticular beds of sandstone and siltstone-pebble conglomerate and fine- to very fine grained sandstone. Shale typically unstratified and highly fractured; rarely with small-scale slickensides that are evidence of paleosol development. Above the lower part, thin-bedded to laminated, stratified to well stratified siltstones and very fine grained sandstones are more common. Siltstone moderately to well stratified. Sandstone locally cross-stratified on large and small scale, uncommonly trough-cross-stratified and/or ripple marked. Trace fossils and shale rip-up clasts very rare. Sandstone rarely forms channelform deposits. Shale outcrops locally weather to blocky, very fractured, or "hackly" appearance; form bare, rounded outcrops and/or "badlands"-type topography. In other places, shale weathers to muddy soil with abundant small calcareous nodules. Calcite veinlets uncommon. Interbedded siltstone and shale weather to bench-and-slope topography. Siltstone and sandstone exhibit platy to flaggy weathering. Siltstone and sandstone beds with small-scale cross-stratification and ripples. Moderately indurated, occur as resistant beds capping tops of hills and ridges. Overall, unit is expressed as highly weathered, muddy soil. Thickness: 0 - 220 ft, top not exposed

**Pgr** GARBER FORMATION (Permian)–Sandstone, mostly fine-grained to less commonly very fine to medium-fine-grained; appears to be very fine grained near base; moderate reddish brown (10R4/6), moderate reddish orange (10R6/6), moderate red (5R5/4), light brown (5YR5/6), and dark yellowish orange (10YR6/6); minor siltstone, shale, siltstone-pebble conglomerate. Sandstone typically porous and friable. Commonly weathers to smooth, rounded outcrops; locally with platy to flaggy to rarely slabby appearance. Locally weathers to hard, dark-colored (grayish black [N2]) beds completely cemented with hematite, calcite, and/or silica. Dark-colored sandstone blocks locally form lag deposit over weathered outcrops. Large- and small-scale crossbeds, trough crossbeds common; many outcrops characterized by inclined beds and channelform deposits, although plane-parallel stratification also present. Shale and/or siltstone rip-up clasts uncommon; burrow extremely rare. Sandstone locally color-banded (e.g., moderate reddish brown (10R4/6), grayish red purple (5RP4/2), and grayish yellow green (5GY7/2)) or with mottled appearance. Small calcareous and iron-oxide spheres occur locally on weathered surfaces. Circular iron-reduction spots very rare. Siltstone and shale sandy, color-banded (e.g., moderate reddish brown (10R4/6) and yellowish gray (5Y7/2)), stratified to unstratified, and with uncommon iron-reduction spots as large as 2 in. in diameter. Typically soft, weather to "badlands"-type topography. Siltstone and shale common near the base and top of formation. In places, siltstone and shale contain evidence of paleosol development such as blocky weathering, fractures with fracture surfaces marked by small slickensides, through-going curved fractures, and calcareous concretions. Thickness: about 140 ft; however, base not exposed

## SYMBOLS

- Unit contact; dashed where approximate
- Mappable bed of conglomerate
- Outcrop, geologic observation
- Petroleum well. Includes oil, gas, oil and gas, dry service (water supply or injection), junked and abandoned, unknown. Modified from Natural Resources Information System database
- Municipal water well
- Exotic (quartz, quartzite) pebbles and cobbles

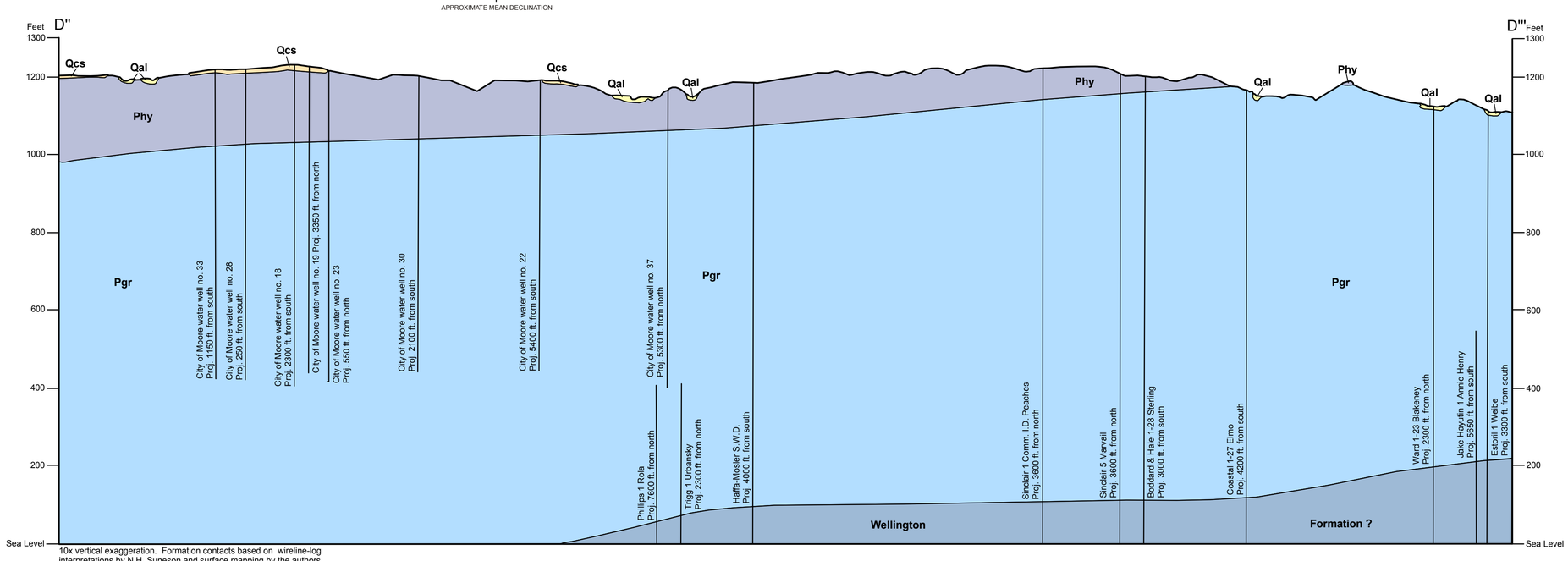



Base Map Credits

The base map was compiled by the U.S. Geological Survey. Topography compiled 1954. Planimetry derived from imagery taken 1995. Universal Transverse Mercator (UTM) projection. 1983 North American Datum. 10,000-foot grid ticks based on Oklahoma coordinate system, south zone. 1,000-meter UTM grid, zone 14.

Geologic Map Credits

Geology by Thomas M. Stanley and Neil H. Suneson, 2000-2001. Research supported by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under Assistance Award Number 00HQPA0002. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. Originally published as Open-File Report OF7-2001. Map revised and published as OGQ-25. Cartography and layout prepared by G. Russell Standridge, 2002.




10x vertical exaggeration. Formation contacts based on wireline-log interpretations by N.H. Suneson and surface mapping by the authors. Vertical lines show logs used in interpretations.

# GEOLOGIC MAP OF THE MOORE 7.5′ QUADRANGLE, CLEVELAND COUNTY, OKLAHOMA

Thomas M. Stanley and Neil H. Suneson

2001