DEDICATED TO OKLAHOMA'S DEVELOPMENT

THE HOPPER

NEW HOMES
NEW INDUSTRIES AND EMPLOYMENT
NEW INCOME
NEW MARKETS

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REPORT ON OKLAHOMA RADIOACTIVE MATERIAL ISSUED

The Oklahoma Geological Survey released a new mineral report on November 10, 1954. In it, Gerald W. Chase described two known occurrences of radioactive material in Cotton County and Jefferson County. He points out that the material occurs in lenses below a wide-spread carbonaceous sandstone which lies at the base of the Garber sandstone. Further search along that contact (shown on the accompanying map) might reveal a commercial deposit.

Mineral Report 26, Occurrences of Radioactive Material in Sandstone Lenses of Southwestern Oklahoma, by Gerald W. Chase, can be purchased for $0.25 from the Oklahoma Geological Survey.

NEW OKLAHOMA GRAPTOOLITE DISCOVERY

An exposure of Viola limestone along U.S. Highway 77 near Springer, Carter County, has yielded remarkable specimens of graptolites. Dr. W. E. Ham of the Survey knew the locality and showed it to Dr. Harry B. Whittington of Harvard University. Whittington dissolved the limestone in hydrochloric acid, then dissolved the residue in hydroflouric acid. Numerous uncrushed specimens belonging to 7 genera and 8 species were recovered. One of these is the remarkable new genus Orthoretiolites, with its only known and type species O. hami, named in honor of Dr. Ham.

The new graptolite is described and beautifully illustrated by Dr. Whittington in Journal of Paleontology, Vol. 28, No. 5, pp. 613-621, September 1954.
OKLAHOMA SUBSURFACE STRATIGRAPHIC NAMES

by Carl C. Branson

Geologists in any older and geologically complex oil producing area are plagued by numerous subsurface names. These fall into a variety of categories:

1. Names of another oil region imported by drillers or by transplanted geologists. Examples: Big lime, Salt sand.

2. Descriptive names, indicative of color, texture, compactness, paleontologic features. Examples: Irish sand, Golf Ball zone, Dense lime, Fusulinid sand, Black Ostracod lime.

3. Surface names used in subsurface. Examples: Verdigris lime, Oswego lime (invalid on surface because of prior usage), Simpson.

4. Names derived from farm owners. Examples: Mollman sand, School Land sand, Hotson sand, Endicott sand.

5. Names of companies, operators, or drillers. Examples: Wilcox sand, Nichlos sand, Fortuna sand.


8. Invented, humorous, or contrived names. Examples: Section Two sand, Chicken Farm sand, Suitcase sand, Ninety-sixth Meridian sand.

The misunderstandings and errors arising from this system of nomenclature are myriad. Names are used informally in an oil company, use spreads to other oil geologists, then the names appear in print without original authorship, correlation, or definition. Misspellings are inevitable: Nichlos, Nicholas, Nichols; Mussellem, Musselem, Musselman; Misener, Misner, Meisener; Sims, Simms, Symmes; McEwan, McEwin, McEwen. Duplications are assured: 3 Smith sands, 2 Ramsey sands, 2 Thomas sands. Seldom is the type well mentioned or is a previous reference cited. It would seem that the oil geologists would abandon excess names, but they do not for many reasons. An oil company's records are voluminous and can not readily be altered, the other name may not actually be that of an equivalent unit, sands are in many cases local in distribution, and geologists may not agree on the best name for the unit.

This article is an attempt to bring the subsurface names to light, to examine them, define the units, kill the unnecessary ones. The attempt can succeed only if geologists will search their memories and help us to record the information. Needed are the following details:

- source of name, well in which first found
- person or company who first used the name
- person, place, and date of first publication where now used
- age, correlation, thickness, description
- present status of name: commonly used, rarely used, obsolete, never established

We need and here solicit help from any and all informed geologists. Lacking information is
indicated in the following pages. Let us know of other names, type well, original use of name, occurrence of unit, correlation, thickness, description. The Survey proposes to publish a list of names and a set of correlation tables when reliable data are obtained. Your help is asked for and will be appreciated.

The following listing is of subsurface names of which I have some information. Other names are separately listed at the end. It should be remembered that the term sand is indicative of porosity, and not necessarily of lithology. The Wheeler sand is a limestone. Most limes are marker beds.

Subsurface names have no status in stratigraphic nomenclature and are thus subject to no rules. Wilcox sand would be invalid because preoccupied by the older name Wilcox formation of Alabama (Eocene). Oswego, Hart, Jackson, Jefferson, Yates are all preoccupied. Descriptive names are invalid as surface names, but are recognized and used in subsurface.

In the following list, Line 1 gives name, series, and period; Line 2 gives first published reference so far located; Line 3 gives origin of name; Line 4 gives occurrence and data on correlation.

OKLAHOMA SUBSURFACE NAMES

Abernathy lime Des Moines Penn.
Author not identified.
Abernathy lease of Cities Service SE SW SE sec.
13, T. 3 N., R. 2 W.
East Antioch pool, Garvin Co.

Ada Mayes Meramec Miss.
Mayes formation as identified in SC Oklahoma.
Mayes is Meramec-Chester of NE Okla. SC counties. Is lower Caney

Adkins sand Virgil Penn.
First ref.-Hayes 1952, Shale Shaker, 3-2, p. 7.
Adkins lease of Peppers, SE\(\frac{1}{4}\) sec. 4, T. 2 N.,
R. 8 W.
West Marlow pool. Equals upper Coline sand.

Aldridge sand Springer Penn.
Aldridge lease of Skelly, SE\(\frac{1}{4}\) sec. 16, T. 1 S.,
R. 4 W.
Velma field. "Second Springer."

Allen sand Des Moines Penn.
First ref.-Buchanan 1927. CGS 40-S, p. 25, footnote.
Named for Allen pool, Pontotoc Co., for village
of Allen.
Used for Calvin sandstone in Allen pool

Anderson sand Springer Penn.
First ref.-Pate 1953. Shale Shaker, 4-3, p. 11.
Anderson lease of Amorada, SE NE SE sec. 36, T. 4 N.,
R. 6 W.
Carter-Knox field. Lowest Springer producing sand

Arbuckle line U. Cambrian-L. Ordovician
Adopted from surface Arbuckle group in old sense.
Equal to all Cambrian formations above Reagan
sandstone and all Lower Ordovician.
Used throughout Oklahoma oil fields.

Atkins sand See Adkins sand

Atlantic sand Virgil Penn.
First ref.-Tomlinson and Storm 1924. AAPG 8, p. 605.
Named for Atlantic Oil Co., discoverer in N\(\frac{1}{2}\) sec.
25, T. 2 S., R. 3 W.
Graham pool, Carter Co. Lies below Johnson sand
Avant lime  Missouri  Penn.
Name of upper member of Iola limestone on surface.
Incorrectly applied to several subsurface limes
NC Oklahoma

Avant-Dewey lime  Missouri  Penn.
Name applied to subsurface lime identified as
Avant and thought to be equal to Dewey lime-
stone of surface.
NC Oklahoma, May be Wildhorse dolo.

Bad Hole sand  Atoka  Penn.
First ref.-Bullard 1928. GGS 40-Q, p. 159.
Origin of name not determined
Timber Ridge pool, Muskogee Co.

Barnes sand  Virgil  Penn.
First ref.-Snider 1920. Oil and Gas in Mid-
Name for Barnes pool. Garfield Co., which was
named for Barnes lease of Oil State Petroleum
Co., discoverer in NWA sec. 15, T. 23 N., R.3W.
Lies below Turkey Run Ls. in upper part of Paw-
huska fm.

Barnett sand  Des Moines  Penn.
First ref.-Snider 1920, Oil and Gas in Mid-Cont.
Fields, p. 80.
Origin of name not determined.
NC Okla.

Bartlesville sand  Des Moines  Penn.
First ref.-Snider 1913. Pet. and Nat. Gas in
Oklahoma, p. 85.
Name for Bartlesville, Washington Co.
NE, C, NC, Oklahoma.

Bayou sand  Missouri  Penn.
First ref.-Williams 1954. Shale Shaker, 4-9, p.7.
Name for Bayou field, Carter Co.
In Boxbar 300-400 feet below Anadarche 1s.

Belveal sand          Virgil       Penn.
First ref.–Vanderpool 1925. Okla. Acad. Sci. 6,  
                         p. 288.
Name for F. M. Belveal lease of Exchange Oil Co.,  
               NE_{1/4} sec. 24, T. 22 N., R. 14 W.  
Garber pool, Garfield Co.: 100 feet below Walker  
sand, 100 feet above Campbell sand.

Belleville sand       See Belveal sand.

Bennett sand          Penn.  
First ref.–Tomlinson and Storm 1924. AAPG 8, p. 608.
Name from J. F. Bennett lease, sec. 31, T. 2 S.,  
               R. 2 W.
Graham Pool, Carter Co. Below Graham sand, above  
Sutherland.

Big lime              Des Moines     Penn.
Name originated by drillers in Pennsylvania.  
In Appalachian fields a Middle Mississippian 1s.  
Applied to Cologah 1s., Altamont 1s. at places,  
and to a Permian lime in Panhandle  
C, NE, NC Oklahoma

Bilbo sand            Trinity       L. Cret.
Author not identified.
Name for Geo. W. Bilbo, partner in discovery  
well of Madill pool, SE_{1/4} sec. 24, T. 5 S.,  
               R. 5 E.

Billings sand         Virgil       Penn.
First ref.–Vanderpool 1925. Okla. Acad. Sci. 6,  
                         p. 288.
Name for Billings pool.  
Noble Co.
Birdseye lime McLish M.Ord.
First ref.—Hyatt 1926. AAPG 20, p. 955.
Descriptive of spotted appearance
OC Oklahoma

Bixler sand Des Moines Penn.
First ref.—Snider 1913. Petr. Nat. Gas in Okla.,
p. 100.
Nancy Bixler lease of Midland Oil Co. SW¼ sec. 11,
T. 26 N., R. 13 E.
Used in Hogsheader pool, Ponca field. Probably
Prue sand.

Black and Simons sand Bromide M.Ord.
Mentioned by White and Green 1931. AAPG 5, p. 405.
Origin of name not determined.
C. Okla. Not now in use.

Black Ostracod lime Missouri Penn.
Descriptive of color and fauna of marker limestone
Cement pool.

Black lime Meramec-Chester Miss.
First ref.—Aurin, Clark and Trager 1921. AAPG 5,
p. 127.
Descriptive of dark color
Applied to Moorefield fm., Hindsville ls. and
ls. of Fayetteville fm.
Okmulgee Co.

Blackwell sand Virgil Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil Jour.,
Aug. suppl.
Name from Blackwell field, Kay Co.
Lies above Newkirk sand, below Hotson sand

Blades sand See Blaydes sand.
Slaydes sand

Virgil Penn.
First ref.—Gouin 1926. OGS 40-E, p. 4l.
Name for Blaydes lease, sec. 32, T. 1 S., R. 6 W.,
Empire pool.
Stephens Co., 100 feet below Brown sand, 100
feet above Kagay sand

Boatwright sand

Springer Penn.
First ref.—Wallace 1954. Shale Shaker 4-7, p. 10.
Ira Boatwright lease of Magnolia, secs. 33, 34,
T. 5 N., R. 6 W.
Equal to Fourth Springer sand. Chitwood area.

Boche sand

Misspelling of Booch sand

Booch sand

Des Moines Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil Jour.,
Aug. suppl.
Name for Booch farm, sec. 20, T. 13 N., R. 14 E.
Morris pool.
C. Okla. Equal to Warner ss. At places Upper,
Lower, First, Second, Third Booch.

Booth sand

Virgil Penn.
D. Booth lease of Texas, NW_4 sec. 21, T. 2 N.,
R. 8 W.
West Marlow field. Upper Booth Lower Booth.

Boyon ton sand

Atoka Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Name for town of Boynton
Okmulgee and Muskogee Cos. Below Leidecker sand

Britt sand

Springer Penn.
A. Britt lease of Magnolia, SW_4 sec. 3, T. 4 N.,
R. 6 W.
Chitwood area. Second Springer.
Bromide Dense Simpson M. Ord. No author identified. Descriptive of compact upper bed of Bromide fm. Marker zone in SC Oklahoma


Brown line Des Moines Penn. No author identified Descriptive of clay-ironstone For Doneley, Sam Creek, Spaniard limestones C and NE Oklahoma


Bruner sand Missouri Penn. First ref.–White 1941. AAPG, Strat., p. 390. Name for Bruner lease of McQueen et. al., NE sec. 4, T. 6 N., R. 6 E., Dora pool (?) In lower part of Francis fm. Equal to Layton sand (?)

Burbank sand Des Moines Penn. Sands 1924. AAPG 8, p. 585. Name for town of Burbank, Osage Co. Roughly equivalent to Red Fork sand = Taft sandstone
Burgen lime
Simpson
Boyle 1929. OGS 40-KK, p. 11
Name from Burgen ss. which is below; Tyner above.
Okfuskee Co.

Burgess sand
Des Moines
Penn.
First ref.—Snider 1913. Petr. Nat. Gas in Okl.,
p. 86.
Cooie Burgess lease of Prairie Oil and Gas Co.,
sec. 32, T. 21 N., R. 13 N.
S and NE Oklahoma. Basal Des Moines.

Burns sand
Des Moines
Penn.
Author not identified.
Burns lease of Ohio, SE NE SW sec. 17, T. 3 N.,
R. 2 E., Garvin Co.

Burr sand
Springer
Penn.
Author not identified
Origin of name not determined.
First Springer, Above Aldridge sand. S. Okla.

Buttermilk lime
Fernvale
U.Ord.
Green and Aurin 1925. Oil and Gas Jour., Oct. 15.
Descriptive of coarse white cuttings
C Oklahoma

Buzzard sand
Missouri
Penn.
First ref.—Kennedy 1937. Tulsa Geol. Soc. 9, p.80.
Origin of name not determined
Osage County

Caddo sand
Leonard
Permian
Reeves 1922. USGS 726, p. 72.
Name for Caddo Petroleum Co., Discoverer in Ree
No. 2.
Cement pool. Equal to Nichlos sand
Campbell sand             Virgil            Penn.
Thos. Campbell lease of Sinclair NW NE NW sec. 30,
   T. 22 N., R. 3 W.
Garber field, 100 feet below Sleveal sand,
   Disc. 1919.

Cantrell sand             Penn.
First ref.-Bullard 1928. OGS 40-Q, p. 56.
Cantrell lease of Empire Gas and Fuel Co. in
   sec. 32, T. 1 S., R. 8 S., Empire pool.
100 feet below Surber sand, 106' above Shelton
   sand.

Canyon lime               Missouri           Penn.
Used in southern Okla. by some geologists for
   Houston reefy lime.
Canyon series is Missouri of C. Texas.

Carmichael sand           Virgil            Penn.
J. C. Carmichael lease of Comar Oil Co., NE 4
   sec. 3, T. 24 N., R. 1 W., Tönkawa pool
250 feet below Pawhuska lime.

Carpenter sand            Des Moines        Penn.
Origin of name not determined.
Equal to Edwards and Hefner sands. First and
   second Carpenter. NW Fox-Graham pool and Milroy

Castle Rock sand          Springer          Penn.
Mention by Roth 1928. Econ. Geology 23, p. 45.
Appears to be surface name; applied to sand at
   2,250 feet in Schermerhorn Ardmore Co.-Jolliff
   No. 1, sec. 24, T. 5 S., R. 1 E., Carter Co.

Charleston sand           See Charleston sand
Charlson sand
First ref.—Hayes 1952. Shale Shaker 3-2, p. 10.
Thos. Charlson lease of Sinclair, SE\(\frac{1}{4}\) sec. 22,
T. 5 N., R. 8 W.
Chickasha field. Below Glover sand, above Pooler
sand. Same as Kistler sand.

Charleston sand
See Charlson sand

Chickasha sand
Leonard
Permian
1943 Oil Scouts and L. Assoc. 13, p. 444.
Name for Chickasha gas pool.
Grady Co. Not now used.

Chicken Farm sand
Simpson
M. Ord.
No author identified
Name from a chicken farm in Nikoma Park
Equal to Oil Creek sand (?) Oklahoma City area.

Chubbbee sand
Missouri
Penn.
First ref.—Williams 1954. Shale Shaker 4-9, p. 7.
J. Chubbbee lease of Texas, NW, NW, SW, sec. 5, T. 5 S.,
R. 1 W. SW Lone Grove pool. 1944.
Near base of Hoxbar fm., SW Carter Co.

Cisco
Virgil
Penn.
Texas series name used by some geologists for
Hoxbar rocks in S. Oklahoma.

City Lake sand
Springer
Penn.
Mention by Roth 1928. Econ. Geology 23, p. 45.
Name for Overbrook ss. used in Schermerhorn-
Ardmore Co., Jolliff No. 1 sec. 24, T. 5 S.,
R. 1 E.
Carter Co. Not used.

Cleveland sand
Missouri
Penn.
First ref.—Hutchison 1911. OGS 2, p. 198.
Name from Cleveland, Pawnee Co.
NC Okla. Upper and Lower Cleveland at places.
Seminole fm.
Clive sand
Leonard Permian
Source of name not determined
Lower part of Clearfork-Wichita

Colbert sand
Atoka Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil Jour.
Aug. suppl.
Name for Colbert pool, Tulsa Co.
Equal to Dutcher sand.

Coline sand
Virgil Penn.
Coline Oil Co.
Lower Coline sand, Upper Coline sand = Adkins sand.
West Marlow pool.

Cosden sand
Des Moines Penn.
First ref.-Clark and Bauer 1921. AAPG 5, p. 289.
Name for Cosden Oil Co.
Okmulgee Co. In Boggy fm.

County Line lime
Missouri Penn.
Town of County Line
Stephens and Grady Cos. Near top of Hoxbar.

Covington sand
Virgil Penn.
First ref.-Bullard 1928. OGS 40-Q, p. 62.
Name for Covington Oil and Gas Co.
Garber pool, Garfield Co., 150' above Pawhuska lime.

Crews sand
Virgil Penn.
First ref.-Bullard 1928. OGS 40-Q, p. 62.
Crews lease of Exchange Oil Co., sec. 19, T. 22 N.,
R. 4 W.
Garber pool, Garfield Co., 400' below Foraker 1s.

Crinoidal Lime
Virgil Penn.
No author
Descriptive of limestone with crinoid columnals.
In Cement pool; equal to Marlow lime.

Cromwell sand Morrow Penn.
First ref.-Levorsen 1920, OGS 40-83, p. 324.
Cromwell Oil and Gas Co., drillers of wells in
sec. 15, T 10 N., R. 8 E.
C. Okla. Equal to Union Valley ss.

Culberson sand Des Moines Penn.
Culberson lease of British-American, NW ¼ SE ¼ SE ¼
sec. 4, T. 1 N., R. 5 W.
Equal to First Fusulinid sand. Doyle, Velma pools.

Culbertson sand Misspelling of Culberson

Culp sand Missouri Penn.
First ref.-Wheeler 1947, World Oil 127-5, p. 46.
Preston Culp lease of Peppers Ref. Co., NE ¼ sec. 6,
T. 5 N., R. 9 W.
Cement field. Below Marchand sand.

Cunningham sand Springer Penn.
W. D. Cunningham lease of Magnolia, C. SE ¼ SE ¼
sec. 33, T. 5 N., R. 6 W.
First Springer. Chitwood area, Grady Co.

Cushing lime Wolfcamp Permian
No author identified
Name for Cushing field where it is marker bed.
Equal to Red Eagle limestone

Deaner sand Atoka Penn.
First ref.-Bullard 1928. OGS 40-Q, p. 47.
Name for Deaner, discoverer in T 11 N., R. 11 E.
Okfuskee County
Dense lime  Bromide  Ord.
No author identified
Descriptive of compact ls.
Upper unit of Bromide fm., also called Bromide Dense

Detrick sand  Tyner  Ord.
First ref.-Clark and Bauer 1921. AAPG 5, p. 591.
Origin of name not determined.
Morris pool.

Detrital zone  Penn.
Used in various senses and for different zones.
Basal Hoxbar in South Palacine, basal Des Moines in Oklahoma City pool, Carber pool.

Dewey-Avant lime  Missouri  Penn.
No author
Name for subsurface Avant of Dewey ls. age.
NC Okla. Lukert thinks Wildhorse dolo.

Dillard sand  Missouri  Penn.
First ref.-Greene 1928. OGS 40-CC, p. 11.
Origin of name not determined.
Equal to Lower Cleveland sand. Pawnee Co.

Dixie sand  Des Moines  Penn.
Name for Dixie Oil Co.
Wewoka pool. Above Smith sand.

Doggett sand  Atoka  Penn.
First ref.-Lockwood 1925. Oil and Gas Jour., April 16.
Origin of name not determined.
Above Deeaner sand.

Dora sand  Des Moines  Penn.
Ingham 1941. AAPG, STRAT, p. 419.
Name for Dora pool, Twp. 6 and 7 N.; R. 6 E.
Equal to Thurman ss. Seminole Co.

Doyle lime Missouri Penn.
Author not known
Name for Doyle field.
White ls. in base of County Line lime.

Dutcher sand Atoka Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil Jour.
Aug. suppl.
Origin of name not determined
C. Oklahoma. Locally First, Second, Third Dutcher

Dyer sand Penn.
First ref.—Hardwick 1950. AAPG 34, p.1113.
Origin of name not determined.
South Marlow pool, Stephens Co.

Earlsboro sand Des Moines Penn.
First ref.—Powers 1927. AAPG 11, p. 1098.
For town of Earlsboro, Seminole Co.
Equal to Bartlesville sand

Eason sand Des Moines Penn.
First ref.—Engleman 1951. AAPG 35, p. 1243.
Sidney Eason lease of Carter, NW¼ sec. 6, T. 2 S.,
R. 3 W.
Local sand in Tussy zone, Milroy-Fox area

Edwards sand Virgil Penn.
Origin of name not determined.
C. Okla.

Endicott sand Virgil Penn.
First ref.—Clark and Aurin 1924. AAPG 8, p. 278.
No. 5 well on Pennok Endicott lease, Tonkawa field.
NC Okla. Lower, Middle, Upper Endicott SE¼ sec. 34,
T. 25 N., R. 1 W.
Enterprise sand
   Des Moines Penn.
   Author not identified.
   Origin of name not determined.
   Equal to Bluejacket ss.

Evansville sand
   Leonard Permian
   Named for village of Evansville
   Logan Co. In Iconium member of Wellington fm.

False Mayes
   Same as Ada Mayes

Fields sand
   Penn.
   First ref.—Fohs and Gardner 1914. Fuel Oil Jour.,
   Aug. suppl.
   Name for Fields pool
   Okfuskee Co.

First Oolitic lime
   Missouri
   No author identified
   Description of lithology
   Checkerboard ls. of C. Oklahoma

Fortuna sand
   Leonard Permian
   First ref.—Clapp 1921. AIME 65, p. 161.
   Name for Fortuna Oil Co., discoverer in sec. 31,
   T. 7 N., R. 9 W. 1917.
   Cement pool. Equal to Ramsey sand, basal Wellington

Frenslcy sand
   Wolfcamp Permian
   Author not identified
   Frenslcy lease of Skelly, NE 1/4 sec. 35, T. 1 S.
   R. 5 W.
   Stephens Co., Velma pool. 1917.

Fulton sand
   Des Moines Penn.
   First ref.—Williams 1954. Shale Shaker 4–9, p. 6.
   Source of name not determined Fulton–Hewitt
   Carter Co. In lower Deese.
Fusulinid sand Des Moines Penn.
Descriptive of faunal content
Equal to Third Deese

Garber sand Virgil Penn.
First ref.-Gardner 1917 GSA 28, p. 693.
Name for Garber field
Garfield Co.

Garner sand Virgil Penn.
First ref.-Sweeney 1953. Petroleum Eng. 25-13,
Col. Garner lease of Miller SE_{2}^{1} SE_{4}^{1} SW_{4}^{1} sec. 26,
T. 6 N., R. 10 W.
Cement pool. Below Gregory lime in upper Virgil

Garrett zone Missouri Penn.
First ref.-McNeal 1953. AAPG 37, p. 2688.
Cora Garrett lease of Carter, SE SE SE sec. 32,
T. 11 N., R. 25 W.
Roger Mills and Beckham Cos.

Garvin beds Wolfcamp-Leonard Permian
First ref.-Denison 1923. AAPG 7, p. 627.
Named for Garvin Co.
Roberson area

Gibson sand Des Moines Penn.
First ref.-Wheeler 1947. World Oil 127-5, p. 46.
Name for Melinda Gibson lease of SW Antioch pool.
Grobe and Vickers, SE_{2}^{1} NE_{4}^{1} sec. 30, T. 3 N., R. 2 W.
6,535-41 feet.

Gibson zone Des Moines Penn.
First ref.-Jacobson 1949. AAPG 33, p. 698.
Name from associated Gibson sand.
Thin ls. above Gibson sand, Garvin Co.

Gilcrease sand Atoka Penn.
First ref.—Roark 1926. OGC 26, p. 17.
Gilcrease Oil Co., discoverer in sec. 20, T. 7 N.,
R. 9 E., Papoose field.
Dutcher sand at most places, Hartshorne ss. at places

Gilcrest sand  Misspelling of Gilcrease sand

Glen sand  Misspelling of Glenn sand

Glenn sand  Des Moines, Penn.
Ada Glenn farm, SW ¼ sec. 10, T. 17 N., R. 12 E.
Equal to Bluejacket ss. (Bartlesville sand).

Glenn—of—Morris sand  Atoka, Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil Jour.,
Aug. suppl.
Glenn sand as misidentified in Morris pool.
Equal to Second Dutcher sand

Glaucnietic lime  Sil.
First ref.—Swesnik 1950. AAPG 34, p. 397.
Descriptive of glaucnietic limestone.
Middle part of Chimneyhill limestone. S. Okla.

Glover sand  Des Moines, Penn.
Glover lease of Little Nick Oil Co. NE ¼ sec. 27,
T. 5 N., R. 8 W.
Chickasha field. Upper sand of Deese fm.

Golf Ball zone  Simpson, Ord.
No author; in use since 1930.
Descriptive of large frosted quartz grains
Top of First Wilcox

Goodwin sand  Springer, Penn.
Goodwin lease of Magnolia, SE ¼ sec. 3, T. 1 S.R. 4 W.
Garvin Co. Lowest Springer sand.
Graham sand
First ref.—Clapp 1921. AIME 65, p. 162.
For Graham lease of Kirk Oil Co.,
Carter Co. Above Bennett sand, below Picketts sand

Gregory lime
Gregory lease of Fortuna Oil Co., W\frac{1}{2} SW\frac{1}{2} sec. 31,
T. 6 N., R. 9 W.
Cement field. Marker in upper part of Virgil

Griffin lime
Name from associated sand
Cement pool. Marker bed in middle part of Virgil.

Griffin sand
Griffin lease of Roy Stephens, Inc., SW\frac{1}{2} SE\frac{1}{4} NE\frac{1}{4}
sec. 27, T. 6 N., R. 10 W.
Cement pool, Conglomeratic ss. below Griffin lime.

Hallett sand
First ref.—Bullard 1928. OGS 40-4, p. 68.
Village of Hallett, Hallett pool.
Equal to Wayside sand (?)

Hammar-Haindl sand
See Hammar-Haindl sand

Hammer-Haindl sand
First ref.—McGee and Clawson 1932. AAPG 16, p. 974.
Rose Hammer (N 1/3 SW\frac{1}{2} sec. 11) and Margaret Haindl
(C 1/3 SW\frac{1}{2} sec. 11) T. 11 N., R. 3 W. leases
of I.T.I.O.
Oklahoma City field. Below Mollman sand

Hamilton Switch sand
First ref.—Clark 1926. OGS 40-4, p. 10.
Hamilton Switch village and pool.
Equal to First and Second Butcher sands
Marjo sand Atoka Penn.
First ref.
Marjo lease of Independent C.G.& E. Gas Co.
sec. 21, T. 10 N., R. 8 E.
Cromwell pool.

Harriman sand Des Moines Penn.
Harriman lease of Ramsey Petr. Co., C W\frac{1}{2} SE NW
sec. 27, T. 2 N., R. 9 E.
Centrahoma pool. Equal to Booch sand (?) Disc. 1941.
1,208-1,275 feet.

Hart sand Des Moines Penn.
First ref. - Wheeler 1947. World Oil 127-5, p. 46.
Hart lease of Magnolia, sec. 14, T. 1 N., R. 3 W.
Robberson pool and vicinity. Equal to Fourth Deese.

Healdton sand Penn.
First ref. - Powers 1918. AIME 59. p. 574.
Town and pool of Healdton Carter Co.

Hedland sand Missouri Penn.
Hedland lease

Hefner sand Des Moines Penn.
Probably named for Robert A. Hefner lease of Sunray
NW\frac{1}{4} sec. 12, T. 1 N., R. 5 W.
Doyle and Velma pools. Equal to Morris sand.

Helm sand Virgil Penn.
S. J. Helm lease of Texas, NW\frac{1}{4} sec. 21, T. 2 N.,
R. 8 W.
West Marlow pool. Above Booth sand.
Hewitt sand
Des Moines and Missouri Penn.
Hewitt pool. Divided into First to Seventh Hewitt sands.

Hewitt lignite
Missouri Penn.
Author not identified
Name from association with Hewitt sand
Marker below Crinerville ls. in Lone Grove and Hewitt areas.

Hogshooter sand
Des Moines Penn.
First ref. - Berger 1918. AAPG 2, p. 212.
Name for Hogshooter pool, Washington Co.
Equal to Burgess sand

Holland sand
Des Moines Penn.
First ref. - Chenn and Garrett 1912. OGS 16, p. 16.
Birdie Holland lease of Wolverine Oil Co. NW ¼ sec. 4, T. 25 N., R. 13 E.
Ochelata area. Equal to Peru sand

Hodges sand
Leonard Permian
First ref. - Marovich 1953. AAPG 37, p. 1344.
Origin of name of determined.
Southeast Duff pool, Garfield Co.

Hominy lime
Virgil Penn.
No author identified
Hominy town and pool
Marker bed equal to Lecompton ls.

"Hominy sand
First ref. - White and Greene 1924. Oil and Gas Jour. 23-15, p. 68.
Name for Hominy pool and town, Osage Co.
Lies on Siliceous lime. May be Burgess or Burgen

Hoopes sand
Oil Creek Ord.
First ref.—McGee and Clawson 1932. AAPG 16, p. 974.
Hoopes lease of Skelly, NE $\frac{1}{4}$ sec. 31, T. 11 N.,
R. 2 W.
Oklahoma City field. Equal to Kinter sand.

Hoover sand
Virgil
Penn.
First ref.—Snider 1920. Oil and Gas in Mid-Cont.
Fields, p. 229.
Name for Hoover lease of Mid-Co., sec. 22, T. 23 N.,
R. 2 W.
Billings pool. Equal to Elgin ss.

Hotson sand
Wolfcamp
Permian
First ref.—Snider 1920. Oil and Gas in Mid-Cont.
Fields, p. 228.
D. Hotson lease of Empire Gas and Fuel Co. NW $\frac{1}{4}$
sec. 25, T. 22 N., R. 4 W.
Garber pool, Garfield Co., 230 feet below Hoy sand

Hoy sand
Wolfcamp
Permian
First ref.—Snider 1920. Oil and Gas in Mid-Cont.
Fields, p. 228.
Hoy lease of Exchange Oil Co., NE $\frac{1}{4}$ sec. 25, T. 22 N.,
R. 4 W.
Garber pool, Garfield Co.

Hudspeth sand
Des Moines
Penn.
First ref.—Maravich 1953. AAPG 37, p. 1344
Origin of name not determined.
Northeast Thackerville pool, Love Co.

Humphrey sand
See Humphries sand

Humphreys sand
See Humphries sand

Humphries sand
Morrow
Penn.
Origin of name not determined.
Velma pool. Third Springer or Second Morrow
Hutson sand  Springer  Penn.
First ref.--Pate 1953. Shale Shaker 4-3, p. 11.
Hutson lease of Texas, sec. 31, T. 4 N., R. 5 W.
Carter-Knox field. Equal to Britt sand

Ingraham sand  Miss(?)
First ref.--Bullard 1928. OGS 40-Q, p. 91.
E. C. Ingraham lease of Magnolia, S\(\frac{1}{2}\) SW\(\frac{1}{4}\) sec. 34,
T. 15 N., R. 5 E.
Davenport and Lyons-Quinn pools. Below Jefferson sand

Ingram sand  See Ingraham sand
Irish sand  Tyner  M.Ord.
First ref.--White and Greene 1921. AAPG 5, p. 406.
Humorous, for green color
Tulsa area.

Jackson sand  Penn.
First ref.--Snider 1920. Oil and Gas in Mid-Cont.
F i e l d s , p . 237.
Simeon Jackson lease of Gates Oil Co., NE\(\frac{1}{4}\) sec. 16,
T. 4 N., R. 3 W.
Healdton pool. Above Simpson sand, below Healdton sand

Jefferson sand  Springer (?)  Miss(?)
First ref.--Bullard 1928. OGS 40-Q, p. 91.
Probably Amy Jefferson lease of Atlantic, NW\(\frac{1}{4}\) sec.
Lyons-Quinn pool. Above Ingraham sand, below Sykes.

Jester sand  Word  Permian
First ref.--Becker 1930. AAPG 14, p. 56.
Town of Jester, Greer Co.
Creek, Beckham, Harmon Cos. Base of Flowerpot sh.

Johnson sand  Virgil  Penn.
First ref.--Tomlinson and Storm 1924, AAPG 8, p. 604.
Named for Roy M. Johnson of Healdton Petroleum Co.,
discoverer in sec. 31, T. 2 S., R. 2 W., Graham pool.
Below Kirk sand, above Atlantic sand

Johnson sand  Oil Creek  Ord.
First r.f.-McGee and Clawson 1932. AAPG 16, p. 974.
Bertha Johnson lease of I.T.I.O., NW$, sec. 25,
T. 11 N., R. 3 W.
Oklahoma City field. Equal to Kinter sand.

J. N. Bateman sand  Virgil  Penn.
First r.f.-Hayes 1952. Shale Shaker 3-2, p. 7.
Disc. SW NW NE J. N. Bateman lease of Texas NW$
NE_1$, sec. 21, T. 2 N., R. 8 W.
West Marlow pool. Above Helms sand.

Jones sand  Missouri  Penn.
First r.f.-Snider 1913. Petr. Nat. Gas in Okla.,
p. 127.
Origin of name not determined. Not to be confused
with well known Jones sand (Jurassic) of Ark-La.
Creek Co. Equal to Upper-Cleveland sand; Seminole fm.

Kagay sand  Virgil (?)  Penn.
First r.f.-Gouin 1926. OGS 40-E, p. 42.
Kagay lease of Magnolia, sec. 34, T. 2 S., R. 8 W.
Empire and Duncan pools, 100 feet below Blaydes sand

Kagey sand  See Kagay sand
Kelsa sand  See Kelso sand
Kelso sand  Missouri  Penn.
First r.f.-Hutchison 1911. OGS 2, p. 198.
Kelso farm SW of town of Cleveland.
Pawnee Co.

Keyes sand  Morrow  Penn.
First r.f.-Totten 1954. AAPG 38, p. 1137.
Name for Keyes gas pool, and Keyes village.
Oklahoma Panhandle. Basal Morrow
Keys sand
Walters field, p. 3.
J. C. Keys lease in T. 1 S., R. 10 W., Walters pool
Cotton Co. Above Zypsie sand, below Priddy sand.

Kilso sand
See Kelso sand

Kiefer sand
Simpson
Author not identified
Kiefer pool for L. R. Kiefer farm, Tulsa Co.
Tulsa Area

Kingwood lime
Atoka
First ref.—Boyle 1929. OGS 40-Q, p. 16.
Name for associated Kingwood sand.
Okfuskee Co. Calcareous phase of Kingwood sand.

Kingwood sand
Atoka
First ref.—Bullard 1928. OGS 40-Q, p. 61.
Named for Kingwood Oil Co.
Okfuskee and Okmulgee Cos. Below Deaner sand.

Kinter sand
Simpson
First ref.—McGee and Clawson 1930. AAPG 16, p. 966.
Kinter lease of Sinclair and Amerada, SE ¼ sec. 30,
T. 11 N., R. 2 W.
Oklahoma City field. Below Hammer-Maind sand

Kirk sand
Virgil
First ref.—George and Bunn 1924. U.S. Bur. Mines,
Rept. on Graham field, p. 13.
Kirk Oil Co., discoverer in sec. 31, T. 2 S., R. 2 W.
Carter Co., 400 feet above Johnson sand

Kisner sand
Wolfcamp
Permian
First ref.—Bullard 1928. OGS 40-Q, p. 62
R. R. Kisner lease of Exchange Oil Co., NW ¼ sec. 19,
T. 22 N., R. 4 W.
Garber field. Above Hotson sand, below Hoy sand.

Kistler sand
Des Moines
Penn.
First ref.—Mont 1952. Shale Shaker 3-2, p. 7.
Name for W. L. Kistler, driller in SE ¼ sec. 14, T. 5 N., R. 8 W.
Cement field. Equal to Charlson sand

Knox sand	Leonard	Permian
First ref.—Becker 1930. AAPG 14, p. 48.
Name from Knox pool
Carter-Knox field. Base of Wellington. Equal to Ramsey sand

Lackey sand	Missouri	Penn.
First ref.—Wheeler 1947. World Oil 127-5, p. 46.
Name for Lackey lease
Cement field

Lawton sand	Leonard	Permian
Lawton pool and city.
Equal to Garber ss. of surface

Layton lime	Missouri	Penn.
First ref.—Beal 1917. USGS 658, p. 14.
Name for associated Layton sand.
Creek Co. Equal to Hogshooter 1s.

Layton sand	Missouri	Penn.
Layton farm, Cleveland field.
Creek Co. Equal to Dodds Creek ss. In Osage Co. and S. Kansas name is applied to Cottage Grove ss.

Layton of Ponca City	Same as Osage Layton
Layton of Cushing	Same as Osage Layton

Leidecker sand	Atoka	Penn.
Muskocee Co. and Okmulgee Co.

Liedecker sand.	See Leidecker sand

Little lime	Dés Moines	Penn.
First Okla. ref.—Green 1918, AAPG 2, p.120.
Common Appalachian term for lime above Big lime.
Hartley 1922 (AAPG 6, p. 464) says Lenapah ls.

**Little Oswego lime** Des Moines Penn.  
First ref.—Greene 1928. OGS 40—CC, p. 10.  
Pawnee Co. Equal to Verdigris ls.

**Loco lime** Missouri Penn.  
Loco village and pool  
Stephens Co. May be Daube ls. or Anedarche ls.

**Lone Grove formation** Des Moines Penn.  
Williams 1954. Shale Shaker 4-9, p. 10.  
Lone Grove village and pool.  
Includes all of Deese except upper 250 feet.

**Lovell lime** Virgil Penn.  
First ref.—Lukert 1949. AAPG 33, footnote p. 141.  
Credits M. D. Scruggs.  
Dovell lease of Welch et al, SW₁⁄₂ SW₁⁄₂ NW₁⁄₂ sec. 9,  
T. 18 N., R. 4 W.  
Equal to Toronto ls. at places.

**Lowery sand** Simpson Ord.  
First ref.—McGee and Clawson 1926. AAPG 16, p. 974.  
Bill Lowery lease of Wirt Franklin N 2/3, NW₁⁄₄ sec.  
12, T. 11 N., R. 3 W. “Uncle Bill No. 1,” 1615  
Oklahoma City field. Equal to Kinter sand

**Lowrie sand** Leonard Permian  
First ref.—McKenny 1953. Shale Shaker 3-6, p. 6.  
Origin of name not determined.  
Logan Co. In Iconium mem., Wellington fm.

**Lydecker sand** See Leidecker sand

**Lyons lime** Morrow Penn.  
First ref.—Levorsen 1928. OGS 40—BB, p. 43.  
Name from Lyons sand below.  
Chautauqua district. Equal to Wapanucka ls.
Lyons sand    Morrow    Penn.
First ref.—Lockwood 1925. Oil and Gas Jour.,
April 16.
Name from Lyons dome and pool.
Equal to Cromwell sand (Union Valley ss.)

Lyons-Quinn sand    Morrow    Penn.
First ref.—Clark 1926. OGS 40-F, p. 10.
Named for Lyons-Quinn pool.
Same as Lyons sand. Equal to Cromwell sand.

M. A. Bateman sand    Virgil    Penn.
M. A. Bateman lease of Texas, SE 4, NE 4 sec. 21,
T. 2 N., R. 8 W.
West Marlow pool. Below Crinoidal lime

McEwan sand    See McEwin sand

McEwen sand    See McEwin sand

McEwin sand    Missouri    Penn.
First ref.—Fohs and Gardner 1914. Fuel Oil Jour.,
Aug. suppl.
Origin of name not determined.
Bartlesville-Dewey area. Same as Cleveland sand (?)

Mckinney sand    Missouri    Penn.
Author not identified
Mckinney lease of Ohio, SE NE SE sec. 18, T. 3 N.,
R. 2 E.
East Pauls Valley pool, Garvin County.

Madill sand    Trinity    L. Cret.
First ref.—Dott 1944. Oil S. and L. Assoc. 14,
p. 444.
Name for Madill city and pool
Marshall County
Magnolia sand  Missouri  Penn.
First ref.-Clapp 1921. AIME 65, p. 162.
Magnolia Oil Co., Discoverer in Irwin No. 1,
sec. 14, T. 5 N., R. 8 W.
Chickasha gas field.

Main Oolitic lime  Missouri  Penn.
Descriptive of lithology and thickness
Cement field and West Marlow pool.

Manning zone  Chester  Miss.
Author not identified.
Manning lease of Superior, NW\(\frac{1}{4}\) sec. 27, T. 22 N.,
R. 10 W.
Major Co. Pay zone in Ringwood pool. Disc. in
NE\(\frac{1}{4}\) NE\(\frac{1}{4}\) NW\(\frac{1}{4}\).

Maloney sand  Missouri (?)  Penn.
First ref.-Gouin 1926. OGS 40-E, p. 42.
Maloney lease of Westheimer and Daube sec. 4,
T. 2 S., R. 8 W.
Empire pool, 400 feet below Kagay sand

Marchand sand  Missouri  Penn.
First ref.-Wheeler 1947. World Oil 127-5, p. 46.
Marchand lease of Gorton Trust, NW\(\frac{1}{4}\) sec. 2,
T. 5 N., R. 9 W.
Cement field. Below Medrano sand, above Culp sand

Marchland sand  See Marchand sand

Markham sand  Des Moines  Penn.
First ref.-Snider 1920. Oil and Gas Mid-Cont.
Fields, p. 80.
Origin of name not determined.
NE Oklahoma
Marland sand
First ref.—Aurin 1920. AAPG 4, p. 174.
Named for Marland Ref. Co.
Ponca field. Above Tyner. May be Misener sand.

Marlow lime
Virgil
Marlow town and pool.
West Marlow pool. Equal to Crinoidal lime.

Maroon shale
Descriptive name for a Pennsylvanian shale in Carter Co., for an upper Virgil shale in Grady Co., for a Jackfork shale on surface.

Marshall zone
Bromide
First ref.—Marovich 1954. AAPG 38, p. 1124.
Origin of name not determined.
Green shale zone between First Wilcox and Second Wilcox

Maudlin sand
See Maudlin sand

Maudlin said
Leonard (?) Pernian
First ref.—Denison 1923. AAPG 7, p. 627.
Maudlin lease, Robberson field
Stephens Co.

Meadows sand
Des Moines Penn.
First ref.—Wood 1913. USGS 531, p. 32.
Origin of name not determined
Cleveland pool. Equal to Booch sand.

Meander sand
Des Moines Penn.
First ref.—Bullard 1928. OGS 40-Q, p. 46.
Origin of name not determined.
Davenport pool. Equal to Oswego lime.

Medrano sand
Missouri Penn.
First ref.—Wheeler 1947. World Oil 127-5, p. 46.
Megargle lime See Megargel lime

Megargel lime Virgil Penn. Authorship not determined
Origin of name not determined
Cotton Co. Texas marker and pay traced into Oklahoma

Meisener sand See Misener sand

Melton lime Missouri Penn.
Melton lease of Ray Stephens, Inc., SE1/4 sec. 26,
T. 6 N., R. 10 W. Above Glover sand.

Mervine sand Virgil Penn.
Clark and Cooper 1927, CGS 40-H, p. 25.
Name from Mervine anticline.
Mervine pool, Kay Co. Equal to Newkirk sand.

Misener sand Kinderhook L.Miss.
First ref. White and Green 1924. Oil and Gas Jour., 23-15, p. 42.
Name for Fred D. Misener of Tulsa
C, NE, NC Okla. Sand in basal Woodford-Chattanooga

Misener sand See Misener sand

Mississippian chert Osage Miss. No author identified.
Descriptive of chert zone in top of Mississippian lime.
NC Oklahoma

Mississippian lime Miss. No author identified.
Adapted from Mississippian
Applied to limestone at base of Penn., Chester, or Meramec, or Osage at various places.

Miller sand
Gouin 1926. OGS 40-E, p. 42.
Origin of name not determined
Duncan and Empire pools. 100 feet above Surber sand

Mollie Miller sand
Author not identified.
Mollie Miller lease of Marland, sec. 9, T. 25 N., R. 2 E.
South Ponca field. May be Misener sand

Mollman sand
First ref.—McGee and Clawson 1932. AAPG 16, p. 973.
3. T. Mollman lease of Mid Kansas, SE ¼ sec. 23,
T. 11 N., R. 3 W.
Oklahoma City field. Tulip Creek or McLish
Lower part of School Land sand.

Mona sand
First ref.—Hayes 1952. Shale Shaker 3-2, p. 10.
Mona lease of Phillips, SE ¼ sec. 34, T. 5 N.,
T. 9 W., Disc. 1944.
NE Comanche Co. Near base of Deese.
Chickasha pool

Moore formation
Name for Moore City and pool.
Cleveland Co. Atoka age in doubt.

Morris sand
Name for Mattie Morris lease of Gypsy, NE ¼ sec. 29,
T. 2 S., R. 3 W.
Fox-Wheeler area. Equal to Hefner sand
Morris sand

Des Moines, Penn.


Name for Morristown and pool.

Okmulgee Co. Equal to Hartshorne sand or Upper Dutchers.

Mose Carr sand

Simpson, Ord.

First ref. Clark and Bauer 1921. AAPG 5, p. 201.


C. Oklahoma. Considered Atoka by some.

Mounds sand

Tyner, Ord.


Town of Mounds, Tulsa Co.

C. Oklahoma. Equal to First Wilcox.

Moyer sand

Virgil, Penn.

Tomlinson and Storm 1924. AAPG 6, p. 603.

Moyer farm, sec. 31, T. 2 S., R. 2 W.

Graham pool, Carter Co.

Montgomery sand

Des Moines, Penn.


Origin of name not determined.

Carter Co.

Muncriff sand

Missouri, Penn.


Muncriff lease, SW¼ sec. 21, T. 2 S., R. 6 W.

South Palacine field, Stephens Co.

Muskogee lime

Atoka, Penn.

No author identified

Muskogee city and field

Limestone marker in Muskogee Co. and vicinity.

Muskogee sand

Atoka, Penn.


Muskogee field

Wilson 1935 correlates with Pope Chapel ss.
Mussellem sand  See Mussellem sand
Mussellem sand  Missouri  Penn.
Author not identified
M. S. Mussellem lease, 1/2 mis. S. of Oilton
Mussellem of Bass 1940 is Cottage Grove ss.

Musselman sand  Missouri  Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Seems to be a misspelling of Mussellem, but
used for a different sand
Cushing field.

Nellie sand  Penn.
Dillard 1928. CGS 40-Q, p. 179. (as Nellis)
Name for village of Nellie
Nellie Pool, Stephens Co.

Nemire sand  Des Moines  Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Origin of name not determined.
In Joggly, above Bartlesville, below Red Fork.

Newberry sand  Virgil (?)  Tenn.(?)
Newberry lease, sec. 14, T. 1 N., R. 3 W.
Robberson field. Virgil or Wolfcamp

Newkirk sand  Virgil  Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Town of Newkirk, Kay Co.
Above Hoover, below Blackwell sands

Nichlos sand  Leonard  Permian
John 3. Nichlos, discoverer, well in sec. 26,
T. 5 S., R. 8 W.
Chickasha field, Grady Co.
Nicholas sand  
See Nichols sand

Nichols sand of authors  
See Nichols sand

Nichols sand  
Missouri  
Penn.
Nichols lease, NW\textsubscript{4} sec. 21, T. 2 S., R. 6 W.
Equal to Lower Hoxbar

High sand  
Permian
Cousin 1926. OGS 40-E, p. 42.
Elmer Nigh lease of N. Amer. O. & G. Corp., SW\textsubscript{4}
sec. 34, T. 1 S., R. 8 W.
Empire pool, Stephens Co. 100 feet below Miller,
100 feet above Surber.

Niles lime  
Virgil  
Penn.
Name for associated sand
Cement field.

Niles sand  
Virgil (?)  
Penn.
F. A. Niles lease of Magnolia, NW\textsubscript{4} sec. 36,
T. 6 N., R. 10 W.
Cement field, Lower Virgil or U. Missouri

Ninety-sixth Meridian sand  
Atoka  
Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Name for 96th Meridian
Equal to Dutcher sand

Noble-Olson sand  
Leonard  
Permian
First ref.-Becker, Wells and Fulton 1932.
Name for Noble-Olson Drilling Co. Disc. in 1929.
Grady Co., Cement field.
Oil City lime Missouri Penn.
Green 1918. AAPG 2, p. 121.
For Oil City town and pool.
S. Osage Co. Equal to Avant 1s. of surface.

Oklahoma City Checkerboard lime Missouri Penn.
Mckenny 1953. Shale Shaker 3-6, p. 6.
Checkerboard as identified in Oklahoma City pool.
Equal to Hogshooter 1s.

Okmulgee Wilcox sand Simpson Ord.
First ref.-Lockwood 1925. Oil and Gas Jour., April 16.
Wilcox sand of Okmulgee district CE Oklahoma.

Olds sand Oil Creek Ord.
Olds lease of College Oil Co., NW\(\frac{1}{4}\) sec. 24, T. 11 N., R. 3 W.
Oklahoma City field. Equal to Kinter sand.

Olympic sand Des Moines Penn.
Orig. des.-Tillotson 1938. AAPG 22, p. 1579.

Oolitic lime Sil.
First ref.-Swensnik 1950. AAPG 34, p. 397.
Descriptive of 1s. with oolites in dense matrix.
S. Oklahoma. Equal to lower Chimneyhill fm.

Osage Layton sand Missouri Penn.
No author identified.
Layton sand as misidentified in Osage Co.
Equal to Cottage Grove ss. Not the Layton of Creek Co.
Osborne sand
Des Moines, Penn. 
Origin of name not determined.
Equal to Fifth Deese. Golden Trend

Oswego lime
Des Moines, Penn.
No author identified.
Abandoned preoccupied surface name, from town of Oswego, Kansas.
Equal to Fort Scott and Breezy Hill limestone.

Panhandle Big lime
Leonard (?), Permian
Name in reference to drillers Big lime as identified in Panhandle.
Marker zone of dolomite, anhydrite, salt, in Panhandle.

Papoose sand
Morrow, Penn.
Roark 1926. OGC 36, p. 18.
Papoose Oil Co., discoverer of Papoose pool.
Okfuskee and Hughes Cos.
Equal to Cromwell (Union Valley ss.).

Patsy sand
Leonard, Permian
Patsy Oil and Gas Co., discoverer in sec. 6, T. 3 S., R. 2 W.
Graham pool.

Patty sand
Missouri, Penn.
Patty lease, SE₁/₄ sec. 27, T. 2 S., R. 6 W.
South Palacine field, Stephens Co., 300 feet below Loco 1s.

Pawhuska lime
Virgil, Penn.
First ref.–Green and Aurin 1925. Oil and Gas Jour., Oct. 15, cross sect.
From surface name derived from city of Pawhuska, 
Equal to Lecompton

Penn Caney Springer Penn.
No author.
Name for upper or Pennsylvanian part of Caney shale.
Equal to Goddard shale and Springer shale.

Peoples sand Missouri Penn.
Origin of name not determined.
Equal to Cottage Grove ss. (Osage Layton). 
Pawnee Co.

Perry sand Des Moines Penn.
First ref.-Lukert 1949. AAPG 33, p. 147.
Perry city and pool.
Noble Co. Perry gas sand at 1,500 feet.

Perryman sand Des Moines Penn.
First ref.-White and Greene 1921. AAPG 5, p. 402.
E. Perryman farm, N\frac{1}{2} SW\frac{1}{4} sec. 14-13N-12E.
Devonian pool, Okmulgee Co. Equal to Prue (?) .

Peru sand Des Moines Penn.
Peru pool, Montgomery Co., Kansas.
Equal to Englevale ss. in Labette shale. Way- side sand called Peru in Osage Co.

Pharaoh sand Des Moines Penn.
First ref.-Swesnik 1954. AAPG 34, p. 392.
Laura Pharaoh lease of Biffle et al, NW NW NW sec. 15, T. 3 N., R. 2 W.
Antioch pool, Garvin Co. 1947. 5,563-71 feet.
J. Deese.
Pickens sand  Des Moines  Penn.
First ref. - Maravich 1954. AAPG 38, p. 1124.
Name for Pickens pool.
In lower Deese of S. Oklahoma

Pink lime  Des Moines  Penn.
First ref. - Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Descriptive of pink calcite crystals.
Equal to Pawah 1s.
Name used for Pawnee in Nowata Co. and in S.
Kansas.

Pink Crinoidal lime  Sil.
First ref. - Swesnik 1950. AAPG 34, p. 397.
Descriptive of pink crinoid columnals.
S. Oklahoma. Upper Chimneyhill fm.

Ponca sand  Virgil  Penn.
First ref. - Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Ponca field, Kay Co.
Equal to Elgin ss. (Hoover).

Pooler sand  Des Moines  Penn.
Elmer S. Pooler lease of Sinclair Prairie,
NE ¼ sec. 22, T. 5 N., R. 8 W.
Chickasha field, Upper, Middle, Lower Pooler.

Prague Limestone  Virgil  Penn.
Author not identified.
City of Prague, Lincoln Co.
Marker in C. Oklahoma. Equal to Lecompton 1s.

Preston sand  Atoka  Penn.
First ref. - Lockwood 1925. Oil and Gas Jour.,
April 16, map.
For Alex Preston, discoverer of Hamilton Switch
Pool.
Okmulgee Co. First, Second Preston. Equal to Dutcher sand.

Priddy sand

B. F. Priddy lease, McMan Oil Co., SE\textsubscript{4} sec. 4,
T. 3 S., R. 10 W.
Walters pool, Cotton Co., 100 feet above Keys.

Prosperity sand

Leonard Penn.
Named by Reeves 1922. USGS, B 726, p. 72.
Prosperity Oil Co., discovery well in SE\textsubscript{4} sec. 5,
T. 5 N., R. 9 W. 1918.
Cement pool, 100 feet below Fortuna sand.

Prue sand

Des Moines Penn.
First ref.—White and Green 1921. AAPG 5, p. 402.
Prue pool, T. 21 N., R. 10 E., Osage Co.
Equal to Lagonda ss. (Squirrel, Perryman, Bixler).

Pugh sand

Penn.
First ref.—Snider 1920. Oil and Gas in Mid-Cont.
Fields, p. 237.
Origin of name not determined.
Healdton and Robberson pools. Above Dunlap sand.

Quinn sand

Morrow Penn.
First ref.—Lockwood 1925. Oil and Gas Jour.,
April 16, map.
Quinn pool.
Equal to Union Valley ss. (Cromwell)

Ragan sand

Wolfcamp Permian
Bullard 1928. OGS 40-Q, p. 121.
Ragan lease of Twin States, NW\textsubscript{4} sec. 29, T. 21 N.,
R. 1 W. Disc. 1923.
Perry pool, Noble Co. Below Vann, 900 feet above
Tonkawa sand.
Ragsdale sand, Des Moines, Penn.  
Origin of name not determined.
Carter Co. Equal to Morris sand.

Ramsey sand, See Ramsey sand

Ramsey sand, Des Moines, Penn.  
Williams 1921. AAPG 5, p. 296.
Name for Ramsey pool, Washington Co.
Equal to Wayside sand.

Ramsey sand, Leonard, Permian
Mines, Rept., p. 5.
W. R. Ramsey, 1923 discoverer in sec. 23, T. 5 N., R. 8 W.
Chickasha field. Equal to Fortuna sand.

Red Fork sand, Des Moines, Penn.
First ref.-Hutchison 1911. OGS 2, p. 220.
Red Fork pool, Tulsa Co.
Equal to Taft ss.

Rhodes sand, Atoka, Penn.
First ref.-Fohs and Gardner 1914. Fuel Oil
Jour., Aug. suppl.
Lena D. Rhodes farm, SE\textsuperscript{1}/4 NW\textsuperscript{1}/4 29-17N-12E, Tulsa
Co.
Equal to Dutcher.

Richter sand, Missouri, Penn.
Hosterman 1924. AAPG 8, p. 290.
Richter lease to Amerada, SE cor. NE\textsuperscript{1}/4 34,
T. 25 N., R. 1 W., Tonkawa field.
Below Tonkawa sand, above Layton.

Ricketts sand, Tomlinson and Storm 1924. AAPG 8, p. 607.
Ricketts farm, sec. 30-28-2W. Graham pool.
Carter Co.
Above Graham sand, below Atlantic sand. 
Considered by George and Bunn (1924) to be Graham sand.

Roll sand  
Leonard  
Permian 
Author not identified. 
Roll lease of Texas, C SE SW sec. 5, T. 3 N., R. 10 W. 
Comanche Co. 947-974 feet.

Rose sand  
Wolfcamp  
Permian 
First ref. - Maravich 1953. AAGP 37, p. 1344. 
Rose lease of Shell, sec. 6, T. 1 N., R. 3 W. 
at 3,683 feet. 
Royal pool, Garvin Co.

Rowe lime  
Virgil  
Penn. 
Name for associated sand. 
Below Marlow lime. Cement field.

Rowe sand  
Virgil  
Penn. 
Ed Rowe lease of Caddo Petr. Co., SW 1/4 sec. 36, 
T. 6 N., R. 10 W. 
Cement field. Possibly upper Missouri

Ruel Blake sand  
Virgil  
Penn. 
Ruel Blake lease of Texas, NW 1/4 SE 1/4 sec. 21. 
T. 2 N., R. 8 W. 
West Marlow pool.

Salt sand  
Des Moines  
Penn. 
Term brought from Pennsylvania. Used in Oklahoma since 1905. 
Carries brine in Penn. 
Applied to Bartlesville sand (Bluejacket ss.)
Sames sand       Des Moines       Penn.
N. J. A. Sames lease of Magnolia, NE NE NE
sec. 35, T. 6 N., R. 10 W.
Cement pool.

Sepulpa sand    Atoka       Penn.
First ref.–Snider 1913. Petr. Nat. Gas in Okla.,
p. 106.
City of Sepulpa.
Equal to Bock. Name not now is use.

School Land sand  Missouri    Penn.
School Land lease.
Cement field. Equal to Hedland sand.
Not to be confused with School Land sand of
Oklahoma City field, which is Ordovician.

School Land sand    Leonard       Permian
School Land lease of Ohio Fuel Oil Co., NW 1/4
sec. 36, T. 5 N., R. 8 W.
NE Comanche Co. Disc. 1923.

School Land sand    Simpson       Ord.
First ref.–McGee and Clawson 1932. AAPG 16,
p. 973.
School Land lease of Sinclair, sec. 36, T. 11 N.,
R. 3 W.
Oklahoma City field. Above Hammer–Haindl sand.

Scott sand    Atoka       Penn.
First ref.–Path 1917. USGS 661, p. 76.
Name for Scott pool, near Kellyville.
EC Oklahoma.

Sears sand    Missouri       Penn.
Rosa Sears lease of Texas, NE ¼ sec. 20, T. 2 N., R. 8 W.
West Marlow pool. Upper Sears, Lower Sears.

Seay sand    Wolfcamp    Permian
First ref. - Marovich 1952. AAPG 36, p. 1109.
Seay lease of Dudley et al, sec. 20, T. 6 S.,
R. 5 W. at 1,746 feet.
Woodrow pool, Jefferson Co.

Second Oolitic lime    Missouri    Penn.
No author identified.
Descriptive.
90 feet below base of First Oolitic

Seminole sand    Viola    Ord.
First ref. - Levorsen 1928. OGS 40-3B, p. 322.
Seminole city and field, disc. in sec. 16,
T. 9 N., R. 5 E.
Below Viola dolomite, above Bromide dolomite.
Seminole Co.

Seminole Wilcox    Same as Seminole sand.

Seminole Mayes    Meramec    Miss.
Mayes fm. as identified in Seminole district.
Seminole Co. Equal to Sycamore ls.

Senora lime    Des Moines    Penn.
No author identified.
Thin ls. in Senora fm., a surface name.
Hughes and Okfuskee Cos. Surface ls. marker.

Shelton sand    Penn.
Gouin 1926. OGS 40-E, p. 43.
Shelton lease, sec. 32, T. 1 S., R. 8 W.
Empire pool, Stephens Co. 100 feet below Cantrell,
100 feet above Smith.
Sholem Alechem lime Missouri (?) Penn.
Name for Sholem Alechem pool.
Cotton Co. Base of Missouri or top of Deese.
Equal Confederate I.s. (?).

Siliceous lime Canadian Ord.
First ref.–Aurin 1920. AAPG 4, p. 177.
Descriptive of chert content.
Upper part of Arbuckle group.

Sims sand Springer Penn.
Sims lease of Stanolind, NE NE SE sec. 2, T. 1 S., R. 4 W., Sholem Alechem pool.
Carvin and Stephens Co. Equal to Fourth Springer.
Rutledge says Morrow.

Simons sand See Black & Simons sand

Simpson sand Simpson Ord.
Origin informal
From Simpson group of surface.
Used in general sense throughout area.

Simpson sand Penn.
First ref.–Snider 1920. Oil & Gas Mid–Cont.
Fields, p. 237.
Origin of name not known. Mistaken identification?
Healdton pool, in sec. 15, T. 4 S., R. 3 W.

Skinner sand Des Moines Penn.
Name for Skinner lease of Magnolia, NW cor. sec.
5, T. 7 N., R. 8 E.
Equal to Chelsea ss. of surface.
Smith sand
Tomlinson and Storm 1924. AAPG 8, p. 610.
Name for C. R. Smith, partner in well in sec. 31,
T. 2 S., R. 2 W.
NW Carter Co.

Smith sand
Gouin 1926. OGS 40-E, p. 42.
Smith lease, sec. 32, T. 1 S., R. 8 S.
Rainola pool, Stephens Co. 100 feet below
Shelton, 100 feet above Brown.

Smith sand (Smith of Wewoka) Morrow
First ref.—Lockwood 1925. Oil and Gas Jour.,
April 16, map.
For R. H. Smith, discoverer in sec. 33, T. 8 N.,
R. 8 E.
Equal to Cromwell sand. Wewoka field.

Southerland sand
See Sutherland sand

Spencer sand
Leonard Permian
Author not identified.
Spencer lease of Texas, C NW NW sec. 8, T. 3 N.,
R. 10 W.
Comanche Co. At 790 feet.

Spiers sand
Springer Penn.
A. V. Spiers lease of Magnolia, C SW SW sec. 28,
T. 5 N., R. 6 W., 11,722-35 feet.
Chitwood area. Equal to Third Springer.

Spires sand
See Spiers sand

Squaw sand
Atoka Penn.
First ref.—Snider 1913. Petr. Nat. Gas in Okla.,
p. 108.
Origin of name not determined.
Equal to Booch sand or Atoka.
Squirrel sand  Des Moines  Penn.  
First ref. - Snider 1920. Oil and Gas in Mid-Cont. Fields, p. 185.  
Linnie Squirrel farm, NW$^1_4$ sec. 7, T. 26 N., R. 14 E.  
Equal to Lagonda ss.  

Stalnaker sand  Virgil  Penn.  
First ref. - Greene and Aurin 1925. Oil and Gas Jour., Oct. 15.  
Stalnaker farm, SE$^1_4$ sec. 11, T. 35 S., R. 2 E., Kansas.  
Equal to Tonkawa sand. NC Oklahoma.  

Stamper zone  Ord.  
Stamper lease, of Sinclair, S$^1_2$ of NW$^1_2$ sec. 30, T. 11 N., R. 2 W.  
Oklahoma City field. Below Kinter sand.  

Suber sand  Misspelling of Surber sand  

Suitcase sand  Missouri  Penn.  

Surber sand  Virgil  Penn.  
Gouin 1926. OGS 40-E, p. 40.  
O. B. Surber lease of Empire Oil and Gas Co., SW$^1_4$ sec. 33, T. 1 S., R. 8 W.  

Sutherland sand  Penn.  
Tomlinson and Storm 1924. Aapg E, p. 609.  
Sutherland Petroleum Co., discoverer in Poland No. 1, sec. 5, T. 3 S., R. 2 W.  
Graham pool, Carter Co. Equal to Lower Graham sand.
Swaggart sand  
Misspelling of Swaggart sand

Swaggart sand  
Missouri  
Penn.
First ref.—Lockwood 1925. Oil and Gas Jour.,  
April 16, map.  
Swaggart lease of Western States, sec. 15, T. 27  
N., R. 3 W.  
Grant Co. Deer Creek pool. Equal to Tonkawa  
sand.
Swenson sand  
Penn.(?)
First ref.—Ambin 1917. OGS 19, pt. 2, p. 268.  
Gus Swenson lease, Kay Co. SW¼ sec. 32, T. 29 N.,  
R. 1 E.  
Equal to Oswego (?), Misener (?).

Sykes sand  
Morrow  
Penn.
First ref.—Lockwood 1925. Oil and Gas Jour.,  
April 16, map.  
Named for Louis Sykes, discoverer in sec. 31,  
T. 8 N., R. 8 E., in Boggs No. 1.  
Wewoka pool, Seminole Co. Sand below Cromwell  
in Morrow.

Symmes sand  
See Sims sand
Tanaha sand  
Misspelling of Taneha sand

Taneha sand  
Des Moines  
Penn.
p. 108.  
Village of Taneha, Tulsa Co.  
Equal to Warner ss. (Booch sand).

Tanneha sand  
Misspelling of Taneha sand

Tatum sand  
Des Moines  
Penn.
Tatums and Tatums pool.  
Tatums pool, Carter Co. A local Deese sand.
Thomas sand  Virgil   Penn.
  Couin 1926. OGS 40-E, p. 50.  
  Thomas lease of Magnolia, sec. 25, T. 1 S.,  
  R. 9 W.  
  N. Duncan pool. Equal to Brown sand.

Thomas sand  Virgil   Penn.
  Named by Clark 1926. AAPG 10, p. 644.  
  A. M. Thomas lease of Marland, sec. 15, T. 25 N.,  
  R. 2 W.  
  Kay Co. Lies on Pawhuska lime.

Timber Ridge sand  Atoka   Penn.
  Bullard 1928. OGS 40-Q, p. 255.  
  Timber Ridge pool.  
  Muskogee Co. Equal to Coody ss.

Todd sand  Missouri, Penn.
  Pate 1953. Shale Shaker 4-3, p. 10.  
  Todd lease of Dick Wegener, SE 4 sec. 1, T. 3 N.,  
  R. 6 W.  
  Carter-Knox field. Equal to lower Hoxbar.

Tonkawa sand  Virgil   Penn.
  Tonkawa pool, Tps. 24 and 25 N., R. 1 W.  
  Kay Co.

Trenton Viola  Trenton   Ord.
  Informal origin. Distinguished from "Fernvale"  
  ls.  
  For Viola ls. of Trenton age.  
  C. Oklahoma.

Trosper sand  Virgin   Penn.
  Edinger and Elliott 1949. AIME, Petr. Stat.,  
  p. 254.  
  Trosper Park  
  Oklahoma City and Nikoma Park pools.


Turkey Mountain sand. Arbuckle. Ord. First ref.—White and Greene 1924. Oil and Gas Jour. 25—15, p. 42. Turkey Mountain pool, Tulsa Co. Tulsa area.


Tussy town and pool.
In Deese. Below Fusulinid sand.

Unconformity sand  Des Moines  Penn.
McGee and Clawson 1932. AAPG 26, p. 970.
Name for sand at an unconformity.
Oklahoma City pool. Equal to Burgess sand.

Upper Skinner sand  Des Moines  Penn.
Author not identified.
Sand above true Skinner sand.
Sandstone below Verdigris 1s., above Croweburg coal.

Vann sand  Penn.
Ballard 1928. OGS 40-Q, p. 121.
Vann lease of Twin States, NE_4 sec. 29, T. 21 N.,
R. 1 W. Disc. 1921.
Perry pool, Noble Co.

Vertz sand  Wolfcamp  Permian
Author not identified.
Vertz lease of Phillips, sec. 7, T. 21 N.,
R. 1 W. At 2,000 feet.
Fourdee pool, Noble Co.

Viola Dense  Trenton  Crd.
Informal origin.
For dense 1s. in upper part of Viola 1s.
C and S Oklahoma.

Wade sand  Missouri  Penn.
Wade lease of Corton Trust, Mid-Kansas Wade No. 9,
SW_4 sec. 2, T. 5 N., R. 9 W.
Cement field. Below Main Oolitic lime.

Wainwright sand  Penn.
Clark and Bauer 1921. AAPG 5, p. 290.
Wainwright town and pool.
Muskogee Co., Okmulgee Co.

**Walker sand**  
*Virgil*  
Penn.  
C. K. Walker lease of Exchange Oil Co., SE\(\frac{1}{4}\)  
sec. 24, T. 22 N., R. 4 W.  
Garber pool, 70 feet below Hotson.

**Walker sand**  
*Missouri*  
Penn.  
Walker lease, sec. 16, T. 2 S., R. 6 W.  
South Palacine field. Equal to Lower Hoxbar.

**Wanette sand**  
*Des Moines (?)*  
Penn.  
Author not identified.  
Name for village of Wanette.  
Asher field. Pottawatomie and Pontotoc Cos.

**Watchorn sand**  
*Penn.*  
Author not identified.  
Robert Watchorn of Watchorn Oil and Gas Co., drilled discovery in 1915.  
Morrison pool, Pawnee Co.

**Wayside sand**  
*Des Moines*  
Penn.  
First ref.–Gardner 1917. GSA 28, p. 694.  
Wayside pool, Montgomery Co., Kansas  
Equal to Walter Johnson ss–member of Nowata sh.

**Wellington anhydrite**  
*Leonard*  
Permian  
No author identified.  
An anhydrite zone in Wellington fm.  
Marker bed in N. Oklahoma.

**Wheeler lime**  
*Des Moines*  
Penn.  
Buttram 1914. OGS 18, p. 38.  
Name from associated Wheeler sand.  
Equal to Pawnee limestone.
Wheeler sand  Des Moines  Penn.
Buttram 1914. OGS 18, p. 41.
F. M. Wheeler farm, NW W sec. 31, T. 18 N.,
R. 7 E., well drilled by C. B. Shaffer in 1912.
Cushing field. May be oolitic Oswego lime.

White lime
First ref.—Aurin, Clark, and Trager 1921. AAPG
5, p. 127.
Descriptive.
Equal to Frisco limestone (?): St. Clair lime-
stone (?); Viola (?).

Whiting sand  Des Moines  Penn.
First ref.—Snider 1920. Oil and Gas Mid-Cont.
Fields, p. 212.
Origin of name not determined.
Equal to Peru sand. Bartlesville area.

Whitney sand  Wolfcamp  Permian
First ref.—Bullard 1928. OGS 40-Q, p. 62.
J. R. Whitney lease of Exchange Oil Co., NE ¼
sec. 16, T. 22 N., R. 4 W.
Garber pool. Above Hotson, below Hoy.

Wigdon sand  Des Moines  Penn.
Reed 1923. AAPG 7, p. 53, fig. 2.
Origin of name not determined.
In T. 13 N., R. 12 E. Equal to Peru sand (?).

Wilcox sand  Simpson  Ord.
First ref.—Aurin, Clark and Trager 1921. AAPG
5, p. 118.
H. F. Wilcox Oil & Gas Co. well, sec. 7, T. 16 N.,
R. 13 E. in Beggs or Bixby pool.
C. Oklahoma.

Wildcat Jim sand  Morrow  Penn.
Bullard 1928. OGS 40-Q, p. 179.
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From name of pool and Wildcat Jim Oil Co. Wildcat Jim pool, Carter Co.

L. C. Williams lease of Skelly, NE ¼ sec. 16,
T. 1 S., R. 4 W.
Lower Deese. Milroy-Fox area, local member of Tussy sand.

Wilson sand Permian
Clara Wilson lease in sec. 30, T. 2 S., R. 7 W.
Comanche pool, Stephens Co. Originally as Wilson fm.

Wiser sand Des Moines Penn.
Author not determined.
Wiser Hill pool, Osage Co.
Equal to part of Oologah fm. (Not Weiser sand of Kansas.)

Woodmansee sand Des Moines Penn.
First ref.-Maravich 1952. AAPG 36, p. 1109.
Woodmansee lease of Skelly et al, sec. 14,
T. 2 S., R. 4 W.
Northwest Milroy pool, Stephens Co.

Woods sand Morrow Penn.
Pate 1953. Shale Shaker 4-3, p. 11.
Woods lease of Pace Petr., SE SE SE sec. 16,
T. 2 S., R. 6 W.
Equal to Primrose sand. South Palacine field.

Yates sand Missouri Penn.
Yates lease, sec. 16, T. 2 S., R. 6 W.
Equal to lower Hoxbar. Not to be confused with widely known Yates sand of W. Texas and New Mexico.
Youngstown sand  Atoka (?)  Penn.  
Shannon and Rockwell 1920. AAPG 4, p. 277.  
Youngstown pool, Okmulgee Co.  
Equal to Dutcher or Hartshorne.  

Yule and Funk sand  Missouri  Penn.  
Yule lease (SW 1/4) and Funk lease (SE 1/4) of Ray  
Stephens, Inc., sec. 1, T. 5 N., R. 9 W.  
Cement field. Below First Oolitic lime.  

Zypsie sand  Penn.  
Zypsie lease of Pure, sec. 29, T. 1 S., R. 10 W.  
Walters pool, Cotton Co. 80 feet below Keys sand.  

Names with little or no data  

Bland sand  Missouri  Carvin Co.  
Brundage sand  Ordovician  Healdton pool  
Dunlap sand  Virgil  Osage Co.  
Grayhorse sand  Burbank pool  
Hickman sand  Independence sand  
Patchel sand  Missouri  Garvin Co.  
Pawhuska sand  Virgil  Osage Co.  
Section Two sand  Ordovician  
Taylor sand  Penn.  
Tonkawa lime  Penn.  
Verdigris sand  Des Moines
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TULSA GEOLOGICAL SOCIETY DIGEST, 1954.

The annual of the Tulsa Geological Society, volume 22, has just been published. It contains 269 pages including advertising. A number of short papers, each summarizing a talk given before one of the meetings are printed. A complete listing of geologic theses at the University of Oklahoma, compiled by Mrs. Lucy Finnerty, is included. The membership list of the Society is at the end of the book.

The Digest can be ordered from C. A. Weintz, Stanolind Oil and Gas Co., 1214 Stanolind Building, Tulsa, Oklahoma. The price is $2.00.