

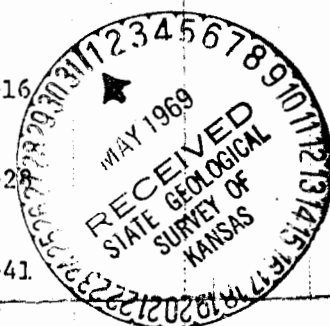
	sand, gray to light brown fine micaceous shaley and partly calcareous to partly friable; shale dark gray to brown micaceous	880-85	
DEER CREEK LIME		908	+456
LECOMPTON LIME		968	+396
OREAD LIME		1056	+308
HEEBNER SHALE		1091	+273
TORONTO LIME		1102	+262
BASE TORONTO - TOP DOUGLAS GROUP		1113	+251
	Sand, gray fine to very fine micaceous shaley tight to slightly friable; interbedded shale, gray micaceous sandy	1132-42	
	Sand, gray-light gray fine micaceous predominantly shaley, friable in part; shale, gray micaceous sandy and some black carbonaceous, red and green	1142-66	
"BROWN LIME" (? IATAN)		1201	+163
LANSING LIME		1255	+109
	Lime, white finely crystalline to sucrosic with crystalline calcite - traces fair oolitic porosity	1292-98	
	Lime, cream to white finely crystalline oolitic in part with some crystalline calcite - traces poor vugular porosity	1311-14	
KANSAS CITY LIME		1350	+14
	Lime, white coarsely fossiliferous slightly oolitic sub-chalky to granular with clear crystalline calcite - scattered poor to fair vugular porosity	1353-58	
	Ditto, with abundant chert, white opaque smooth to devitrified	1358-67	
	Lime, white finely crystalline with some clear crystalline calcite, sub-chalky in part - traces poor vugular porosity; chert, gray to brown	1383-92	
STARK SHALE (Black Carbonaceous)		1490	-126
HUSHPUCKNEY SHALE (Black Carbonaceous)		1522	-158
BASE KANSAS CITY - TOP PLEASANTON GROUP		1549	-185
MARMATON		1587	- 223
	Lime, light gray to light greenish-gray to buff finely crystalline - few traces of poor vugular porosity	1596-1604	
	Lime, light gray to light greenish-gray to white finely crystalline with some coarsely crystalline calcite - slight traces poor vugular porosity	1607-11	
MARMATON SAND		1631	-267
	Sand, white and buff white coarse to very coarse grained sub-angular calcareous fairly friable clusters, no show or fluorescence	1631-36	
	Lime, cream to buff finely crystalline fossiliferous sandy with included coarse to very coarse sub-angular sand grains - slight traces of poor vugular porosity; traces chert, orange	1655-60	
CHEROKEE SHALE		1664	-300
PENNSYLVANIAN BASAL CONGLOMERATE SAND		1667	-303
	Sand, clear to pink and red coarse to very coarse sub-angular to rounded loose grains; some chert fragments, red, brown, orange and light gray weathered to fresh	1667-69	
KINDERHOOK SHALE		1669	-305

7-11-8E



7-11-8E

- Dolomite, yellowish-white medium to fine crystalline brittle, no apparent porosity 1714-15
- Dolomite, pale citrin yellow to light buff medium-coarse crystalline glauconitic with traces of included coarse rounded sand grains and gray chert - abundant good vugular porosity, no show or fluorescence 1715-18
- Dolomite, cream to white medium to med-fine crystalline, traces coarse sand grains and chert, white opaque to devitrified - traces fair vugular porosity 1718-22
- Dolomite, buff and brown med to med-fine crystalline dense platy - slight traces poor to fair vugular porosity 1722-26
- Dolomite, white medium-coarse crystalline vitreous, trace included coarse sand grains - fair to good vugular porosity 1726-30
- Dolomite, white medium-fine crystalline platy - slight traces poor vugular porosity 1730-36
- Dolomite, white and traces gray medium to coarse crystalline vitreous with coarse rounded sand grains - fair to good vugular porosity 1736-40
- Dolomite, white medium-coarse crystalline vitreous, some coarse sand grains - good vugular porosity 1740-52
- Dolomite, white, light green and traces pink medium to med-coarse crystalline, abundant coarse sand in part - traces fair vugular porosity 1752-60
- Dolomite, white to buff medium crystalline dense - fair to good vugular porosity in part 1760-72
- Dolomite, white medium crystalline very sandy in part - fair to good vugular porosity 1772-76
- Dolomite, white, light green and light gray medium to medium-fine crystalline glauconitic dense partly sandy tight 1776-80
- Dolomite, buff medium-coarse crystalline dense - traces fair vugular porosity 1780-87
- Dolomite, tan-brown medium crystalline dense - scattered traces vugular porosity 1787-95
- Dolomite, buff med-coarse crystalline dense - scattered fair vugular porosity 1795-1807
- Dolomite, buff to white and gray and light green medium to med-fine crystalline dense - few traces vugular porosity 1807-16
- Dolomite, buff to white medium to med-fine crystalline dense - traces vugular porosity 1816-20
- Dolomite, white to buff medium to med-fine crystalline dense - scattered fair vugular porosity 1828-41
- Dolomite, buff to cream medium to med-fine crystalline to sucrosic - scattered poor to fair fine vugular porosity 1841-48
- Dolomite, buff to white medium to med-fine crystalline dense - scattered traces poor to fair vugular porosity 1848-60
- Dolomite, white to buff medium crystalline dense - traces poor to fair vugular porosity 1860-67
- Dolomite, white-light gray and traces buff med-coarse crystalline - scattered fair and slight traces good vugular porosity 1867-93
- Dolomite, gray to buff to white med-coarse crystalline scattered fair and traces good vugular porosity 1893-1907
- Dolomite, white-light gray and buff coarse to medium crystalline - scattered traces fair vugular porosity 1907-29



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Dolomite, white and some light buff medium-coarse to coarse crystalline - some fair to good vugular porosity 1929-38

Dolomite, as above but dense - scattered traces fair to good vugular porosity 1938-60

Dolomite, white to buff medium crystalline dense - scattered fair to good vugular porosity 1960-74

Dolomite, white medium crystalline dense - considerable fair to good vugular porosity 1974-96

Dolomite, white and some buff, light gray and light green medium to med-fine crystalline dense, traces rhombic - considerable fair to good vugular porosity, traces oolcasts and crinoid molds 1996-2019

Dolomite, white and light greenish-white medium to med-fine crystalline glauconitic, traces oolites and sub-oolicastic - scattered fair to good vugular porosity 2019-28

Dolomite, greenish-white to light buff medium to med-fine crystalline - scattered fair to good vugular and trace sub-oolicastic porosity 2028-33

Dolomite, white medium to med-fine crystalline partly rhombic - scattered fair vugular and some inter-crystalline porosity 2033-44

Dolomite, as above and some buff medium crystalline dense and light green to white medium crystalline rhombic with white interstitial material - possible fair inter-crystalline porosity 2044-52

Dolomite, buff to white medium crystalline dense - few traces poor to fair vugular porosity 2052-60

Dolomite, buff medium crystalline dense - scattered good vugular porosity; chert, white opaque smooth to devitrified 2060-64

Dolomite, white to light buff medium-fine crystalline to sucrosic - scattered fair to good vugular porosity chert as above 2064-70

Dolomite, as above - considerable fair to good vugular porosity: trace chert as above 2070-77

Dolomite, buff to gray medium crystalline coarsely oolitic - fair to good vugular and inter-oolitic porosity, some free oolites; trace chert, white-light gray opaque 2077-88

Dolomite, buff to white medium to med-fine crystalline dense to partly sucrosic - scattered fair to good vugular porosity; ? some dolomite, buff partly oolitic porous as before; chert, white opaque 2088-93

Dolomite, white and some light green medium to med-fine crystalline sucrosic - few traces poor to fair vuggy porosity, possible poor inter-crystalline porosity; trace chert, white opaque 2093-2110

MAQUOKETA

2110

-746

Dolomite, gray-dary gray micro-granular to dense speckled phosphatic glauconitic, grading to shale, dark gray-green and gray micro-granular dolomitic; chert, gray opaque speckled spicular graptolitic smooth to devitrified 2110-19

Shale, green to gray-green micro-granular dolomitic; abundant chert as above: less dolomite as above 2119-30

Dolomite, gray-green micro granular dense and shale as above; less chert as above 2130-39

Shale gray-green and greenish-gray micro-granular dolomitic and interbedded dolomite, gray-green and gray micro-granular dense shaly 2139-50



Ditto, and some shale, dark gray, maroon and green micaceous and ochre - maroon-green non-micaceous; shale, light green micaceous partly dolomitic 2150-60

Shale, pale green micro-granular to dull green micro-crystalline dolomitic and vari-colored shale as above; traces sand, green fine micaceous shaly 2160-79

Shale, dull green micaceous micro-crystalline dolomitic compact with some brown banding and trace spores (?) varicolored shales as above; traces sand as above 2170-98

VIOLA 2198 -834

Dolomite, buff, brown and gray medium to coarse crystalline mottled - good vugular porosity: some dolomite, brown medium granular tight: chert, buff, tan and gray opaque partly leached with some good porosity - No show or fluorescence 2198-2235

Lime, cream to buff to light gray fine to coarse crystalline sub-chalky to dense platy, becoming medium granular and very dolomitic in part: chert, gray to buff-gray opaque partly devitrified 2235-71

Lime, light gray to buff coarsely crystalline slightly dolomitic with black fossil inclusions, less finely crystalline; trace chert, light gray sub-opaque 2271-79

Lime, gray to tan and traces dull greenish-gray and ochre-brown finely crystalline dense; some shale, dull green and ochre-brown; trace chert, gray opaque 2279-87

Lime, cream to buff sub-crystalline sub-chalky to finely crystalline dense, becoming medium granular, dolomitic and possibly very finely sandy in part with some brown carbonaceous mottling 2287-2300

Lime, cream sub-crystalline to buff and brown finely crystalline to buff and brown finely crystalline dense with traces medium granular finely sandy dolomitic: lime, dark brown dense dolomitic and carbonaceous grading to dolomite 2300-10

SIMPSON SHALE 2310 -946

Shale, olive waxy to dark green, light green soft, maroon ochre and dark gray; traces sand, gray and green fine to medium-grained phosphatic shaley and tight: pyrite 2310-13

Lime, as above and gray to tan finely crystalline sub-dense, buff-gray to greenish-gray sucrosic dolomitic, and traces light green and yellow finely crystalline 2313-20

Shale, olive green waxy; traces sand, white and green fine to very fine phosphatic tight 2320-22

SIMPSON SAND 2322 -958

Sand, white, buff and gray coarse to fine-grained rounded calcareous clusters with abundant brown gilsonitic flakes - friable in part with possible porosity, part very calcareous and tight - no show or fluorescence 2322-26

Sand, as above and sand, white coarse to medium-grained rounded loosely cemented clusters with brown gilsonitic flakes - good porosity, no show or fluorescence 2326-30

Sand, as above and sand, white to light buff coarse to medium-grained rounded to sub-angular slightly calcareous loosely cemented porous clusters and traces sand, white medium-grained rounded clean friable very porous clusters: abundant coarse to medium rounded loose sand grains - brown gilsonitic flakes but no show or fluorescence 2330-35

Sand, light buff to white medium to coarse grained rounded to sub-angular calcareous clusters with brown gilsonitic flakes - considerable loosely cemented and porous, part very calcareous and slightly porous to tight: abundant loose sand grains - no show or fluorescence 2335-38

Lime, gray and less buff and traces green finely crystalline dense with included medium to coarse sand grains in part 2338-56



Lime, gray to buff finely crystalline to sucrosic partly dolomitic slightly sandy 2356-68

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Sand, white very fine-grained slightly micaceous and pyritic probably broken - very friable and soft with possible fair to good porosity, no show or fluorescence; shale, olive green, dark red, ochre and light green micaceous 2368-75

Sand, broken white, light gray, light green and yellow very fine-grained glauconitic pyritic - friable to shaly and tight, no show or fluorescence: shale as above, lime, green and yellow nodular 2375-82

Shale, hematite red soluble with abundant included sand grains, clear, red and yellow coarse to very coarse rounded to sub-angular: hematite pellets and vari-colored shale 2382-85

Shale, olive to dark green, light green micaceous, maroon, ochre, brown, dark gray and a small amount of hematite red soluble; sand grains as above 2385-93

Sand, broken light gray coarse to fine sub-angular phosphatic slightly calcareous, friable in part, no show 2393-96

Shale, vari-colored as before and free sand grains as before; trace sand, light gray coarse-grained sub-angular phosphatic clusters, no show 2396-2404

? ARBUCKLE 2404 -1040

Dolomite, white and some light greenish-gray and dark gray medium-fine crystalline dense with included coarse rounded sand grains and traces of granite, weathered pink with biotite and greenish-white 2404-10

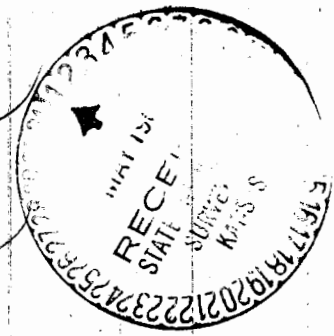
Ditto, with considerable dolomite, white medium-fine crystalline siliceous abundantly finely sandy with included traces of pink weathered granite with biotite 2410-13

PRE CAMBRIAN 2413 -1049

Granite, pink highly weathered with abundant biotite mica, no show or fluorescence 2413-16

ROTARY TOTAL DEPTH 2416 -1052

Wray County, Kansas



WELEX INDUCTION ELECTRIC LOG TOPS

Elevation	1364 KB	Base Kansas City	1552 (-188)
Pennsylvanian Sand	694 (+670)-708	Marmaton	1588 (-224)
Howard	772 (+592)	Marmaton Sand	1630 (-266) -1635
Topeka	832 (+532)	Cherokee Shale	1663 (-299)
Deer Creek	906 (+458)	Penn. Basal Congl. Sand	1667 (-303)
Lecompton	968 (+396)	Kinderhook shale	1671 (-307)
Oread	1055 (+309)	Hunton	1714 (-350)
Heebner	1090 (+274)	Maquoketa	2110 (-746)
Toronto	1103 (+261)	Viola	2198 (-834)
Douglas Group	1113 (+251)	Simpson shale	2312 (-948)
"Brown Lime"	1200 (+164)	Simpson sand	2324 (-960)
Lansing	1255 (+109)	?Arbuckle	2405 (-1041)
Kansas City	1349 (+15)	Pre-Cambrian	2412 (-1048)
Stark Shale	1492 (-128)	Total Depth	2419 (-1055)
Hushpuckney Shale	1523 (-159)		