IOWA GEOLOGICAL SURVEY W-005-1

In Cooperation with U. S. Geological Survey

RECORD OF WELL

Location:

Town: Oakdale (N E / S W): County Johnson.

SE-NW-SE sec. 25 T 80 N., R. 7 W. Clear Creek Twp.

Well name and number State Sanitarium Well #3

Owner _____ Address _____

Tenant _____ Address _____

Contractor Thorpe Well Co. Address Des Moines.

Drillers _____

Drilling dates 1928.

Well data:

Elevations: Drilling curb 808 feet; Land surface _____ feet

Determined by _____

Topographic position Upland.

Total depth: Reported _____ feet, Measured 1756 feet

Drilling method cable

Hole and casing data 164' of 20" casing 0-164', 350' of 16" casing 0-350', 223' of 12" casing from 325-548', 591' of 10" casing from 548'-1140'

Original depth to water _____ ft. above/below _____ Date _____

Original elevation of water level _____ ft.; Source of data _____

Sources of water: Principal (Cambrian Jordan sandstone); Others Ordovician (Prairie du Chien)

Production data: Date 1928

Static depth to water 117 Measuring point

Pumping level 126 at 370 g.p.m.

Specific capacity 41+ g.p.m. per ft. drawdown; Temperature 66 °F. (unreliable)

Pump data; Type pump Turbine Column Dia. Length

Cylinder or bowls: Dia. Length Suction pipe

Power 15 H.P. Electric Motor Airline

Estimated rate of production: g.p.m. for hrs. a day

Use of water

WATER ANALYSES (in parts per million)

Date samples	July 29, 1942			
Sampled by	K.E. Anderson.			
Total solids	1085			
Insoluble matter	12.0			
Alkalinity (Meo)	240.0			
Alkalinity (Phn)	0.0			
pH	7.5			
Fe_2O_3+ Mn_2O_3 +Al_2O_3	4.5			
Alkali as sodium	223.5			
Calcium	109.3			
Magnesium	46.4			
Iron (unfiltered)	0.2			
Manganese	0.0			
Nitrate	0.3			
Fluoride	0.7			
Chloride	34.0			
Sulfate	620.5			
Bicarbonate	292.8			
Hardness (ppm)	461.3			
Hardness (gpg)	26.9			

Remarks

Laboratory data: Sample storage location

Sample range 78 - 1750. No. spls. 156 No. dupls. & cond. 137 Rec. - Good.

Spls. prepared by Washed range by

Driller's log and cond.

Insoluble residues: Prepared by Studied by Strip log

Microscopic study 78-1750 Harris Gulf strip log Harris Gulf.

Gen. log yes. Correl. by Harris - Gulf

Sheet No. 1 Name of Well State Sanitarium Well #2 Survey No. W-0051

Location Oakdale (Johnson) Date Drilled 1928 Analyst S. E. Harris [illegible]

100

10

20

30

40

50

60

70

78 Ls lt. gr to lt. med mot, 45% fn-med 53% phenoclastic dnse calcite rhombs glauconitic

80

81 Cht 2% v. lt. lt to med gr, subtransluc, subconch; tr Qtz brachs + spines, crinoids

Ls lt. gr fn gran fos 20%

brn phenoclastic dull, v. arg 55 petrolif.

crm crse xtln transluc 25

Bracks, crinoid stems

Qtz tr

90 ↓190

Ls sltly bffish gr. (blk mots) fn ~~to sublith~~. some py has a subconch fracture

dnse

v. fos bryozoa, crinoids

200 ↓ py some wh + yel calcite

Sheet No. 2 Name of Well. State Sanitarium Well #2 Survey No. W-2051

Location Oakdale (Johnson) Date Drilled 1928 Analyst S.E.H.

200

No spl

10

210

Ls lt. bff, mot blk fos, phenoclastic, matrix fn.

Cht tr. wh mot gr, dnse v. fos brachs calcite
tr Qtz py

20

220

Ls lt. bff mot bff, rapid eff, phenoclastic but not espec. fos

Qtz 10% mostly A clear some rded somed rded ls. (Pleist. cave)
Cht lt. gr. gran 1% ig.

30

230

Ls as above lt bff mot bff, clastic py tr calcite clear
slfly fos, rapid eff

Glac. sd 1% ig.

40

py calcite clear

242

Ls drbish bff, phenoclastic fos somewhat arg
244 Glac sd. tr calcite rhombs py crinoids, brach

No spl.

248

50

Ls ditto v. fos frags

brachs crinoids
tr glac

60

260

sacch 3%
Ls crm V. fn to sublith py v. rapid eff small bubbles dnse, subconch
Cht. gr. subconch opaque tr

265

Sd glac 2% calcite rhombs. py fn massive

Ls crm, v. fn to sublith, subconch, dnse rapid eff.

70

Sd glac 2% ig

275

py 1% clear calcite

Dolo lt. med brn 57 } sacch, fn-med
Dolo molasses 40 }

80

Ls as above 1% cave
glac. sd ig 2% tr.

285

Dolo, lt med brn as above 94% 5% molasses
glac sd ig. 1%

90

Dolo lt. bff gran fn coarse calcite vugs 55%
Dolo lt. gr fn to crse small amount of sd embedded fn to med 45%

Cht. tr blue gr
Sd glac 2%

py

300

Sheet No. 3 **Name of Well** State ... **Survey No.** W-...

Location Oakdale Johnson **Date Drilled** 1928 **Analyst** ...

300

Sh v. calc, lt. gr, hard, silty, sdy
ls gr xtln arg 10%

↓305 Cht pale gr. gran ... % py glac sd tr
Dolo lt. gr. fn ... long & v. fn. some coarse rhombs
buff med crse 10% py glac sd 3% Cht pale gray gran ...%

↓308 Dolo lt drbish brn crse dnse

10

Dolo gr (lt.) 5% similar to lt drbish brn
sd 15% much ... qtz & ig pbls

↓315 calcite py

Dolomite lt. gr. v. fn to crse dnse
Dolo lt. bff 15% crse
v. fn 25%

20 calcite "vugs" py ... (?) tr

↓325
Dolo lt. bff as above } crse 80
Dolo lt. gr as above } 20

↓328
No. spl. Py

30

20%
Sh lt. grn. (called cavity clay by Conselman) much silt & fn sd mixed in.

Heterogeneously mixed is:
Dolomite gr lt. med, fn to med 40 } dnse
lt. bff, v. fn to med 40 }

40

Py

sd 2% ...

↓348 at 348 - Sh lt. grn 10% silty, subconch, compact; py; Dolo lt. gr & lt. bff as above

50

Dolo crm fn med, por vesic,
Dolo 1% med gr v. dnse, oolith

Sd fn & v. fn some well rded & frosted

↓358
No. spl. Py

60

Dolo lt. drbish gr. fn to med dnse but vuggy

Slight tr. py

70

↓375
Dolo lt. gr bff. fn to med vesic por

80 ↓380

Dolo drbish grn gran, fn-med,
sd 2% Py 4%

↓385
Cht. lt. gr. gran, dnse subconch
Sh lt. grn tr as above

90

Dolo pale crm, med, por vesic xtln
authigenic qtz xtl 2½ mm

Py

398-409 (over)

400

Sheet No. 4 Name of Well. State Sanitarium #2 Survey No. W-9051

Location (?)Oakdale (Johnson) Date Drilled. 1928 Analyst. S.E.M.J.

398
Dolo, pale crm, med, por. vesicular
404 xtln qtz less 5% py octohedrons
Dolo, pale crm, ditto
xtln qtz less 5% py
415
Dolo, pale crm., fn-med, vesicular
xtln qtz tr py
425
pale crm to pale gr. as above somewhat less por.
430 slt. tr py
Dolo v. lt. gr, fn-med. xtln, vesic → somewhat por
440
Dolo v. lt. bff + some lt. gr., fn-med formed, vesic less por than above
slight tr py and grn spots (glauconite?)
Qtz xtln tr
450 cht. wh vit. qtzose tr
Dolo pale bff, some lt. gr. ditto
Qtz xtln tr
cht tr wh rough dull + vit. corals?) py
560
Dolo, lt. bff, med, sltly por some vesic
Qtzose cht. vit., rough, glassy to lt gr 3%
Cht. wh rough, dull 8%
Qtz xtln. glassy tr
py
sd fn formed crse frosting 1%
478 Dolo, med dk grayish grn, fn med, v.v. silty, sltly arg., ; Dolo as above less
480 cht wh v. soft, dull, only the very slightest eff for short time 2% py 3%
Dolo yel crm, xtln, med, por vesic some sacch
cht v. lt. gr + wh gran, vesic some marnm 1%
Dolo yel crm, xtln, med, somewhat por.
Cht wh + pale gr. rough dull some conch, 5%, sltly foss opaque
Dolo lt. gr. fn-med, dnse, 5%
tr py
500

Sheet No. 5 Name of Well State Sanitarium Well #2 Survey No. W-0051

Location Oakdale (Johnson) Date Drilled 1928 Analyst S.E. Harris Jr.

500

No Spl.

10 — 510

Sh v. lt. gr. silty, dull, dolo 98%

dolo lt. crm bff med-crse xtln 2%
Cht tr. wh opaque dull conch } as above

20 — 520

Sh. lt. med gr. silty, non-lam, dolo

Siltstone 1% non-calc dk orange

30

py

40

545

Dolo mot gr & yel buff crse. 60%
Dolo lt. med gr med 40% gran
siltstone non-calc dk to lt orange 1%

50

sd grains tr orange

Cht wh. op. conch lt. gr. tr.

py

60 — 560

Dolo mot gr & yel bff med to crse pheno calcite 50

siltst & sd yel to orange 1%

py 1%

70 — 570

Sh lt. gr silty grnish silty silty dull non-lam dolo

575

Dolo lt. dr. bish. gr. & yel bff. fn-med, gran

Dolo crm 15% med-crse xtln

gastropod frag

80

silica cemented sd & silt orange 4%
Cht wh & v. lt. gr. vuggy subconch op.
Qtz clear A tr some xtln

585

py 3%

90

Dolo lt. gr grnish, gran, fn-med, 60%
Cht, v. pale gr, dolo, blk streaks fos, coral some qtzose 40%

tr Qtz xtln

600 — 600

py

Sheet No. 6 Name of Well State Sanitarium Well #2 Survey No. W-0051

Location Oakdade (Johnson) Date Drilled 1928 Analyst S. E. Harris

600 — 600

Dolo[50] as above lt gr-grn, fn, med fos bryo

Cht[50] wh to lt gr dolo blk streaks v. fos rough dull opaque brach

608

py

Dolo lt grish-grn, as above fos 45%

10

Cht. wh to lt gr. blk spks, rough, opaque 55% fos dolo

615

Dolo lt grish grn ditto

Cht ditto dolo 25%

20 — 620

Sh lt. gr silty grnish, silty, dolo, structureless

30

dolo tr

638

dolo v. lt. gr-grn gran fn to fn-med, dnse, blk fos frags

40

Cht. wh to pale gr blk spks dolo, v. fos, opaque, rough soft relatively

tr chalcedony transluc, ltblue-gr,

No spl.

50

652

Sh lt gr v. silty, dolo, structureless dull

dolo tr

658

60

Sh lt to lt med gr v. silty dolo, fracture rough conch, non-lam

dolo gr fn 3%

668

70

Sh ltgrnish gr. v. silty, dolo

tr orange sd & silt

80 — 680

Sh lt. med grn gr. v. silty dolo

90

dolomite 2% med grnish gr., med gran

700

Sheet No. 7 Name of Well. State Sanitarium Well #2 Survey No. W-0051

Location Ashtola (Johnson) Date Drilled 1928 Analyst S.E. Harnish

700

No. spl

Dolo bff to molasses brn, gran med & med fn, pyritic, rather dnse
a few large calcite filled vugs slty sug

10 py 5% +

715

blk streaks

Dolo bff to med brn, ditto fos

20 few vugs py 5%

Cht. tr blue-gr, opaque, subconch

725 faint tr of grn possibly glauconite

30

No spl.

40 740

Sh. lt. slty grnish gr, dolo, as in 580-700 v. silty

tr dolo

50

Galena 755

Dolo bff & lt. brn, cinnamon spks, med to crse, por. vesic.

60 760 py tr

Dolo bff & lt. brn, cinnamon spks, ditto

70 770 py

Dolo bff & lt. brn, tr cinnamon spks, med, xtln, somewhat vesic

775 py

Dolo lt. bff, xtln, med, rather por crin

80 py calcite wh

785

ls wh, v fn, bf dolo rhombs 70

90

Dolo lt. bff, xtln med, 30

Cht tr brn conch, py, sal tr

800

Sheet No.....8..... Name of Well.....State Sanitarium Well #2..... Survey No...W-0051.....

Location .....Oakdale..... Date Drilled.....1928.. Analyst...S.E.H.G.....

800

ls, wh, v. fn., buff dolo rhombs 60%

dolo lt. bff, med, some cinnamon spks 40%

py calcite

10 — 810

ls wh v. fn bff dolo rhombs (same size grade as in dolo) 65.

eff v. rapid

Dolo 35. bff, med as above

20 — 820

ls wh, v. fn. bff dolo rhombs eff v. rapid, dolo rather slow

dolo bff as above 30%.

tr cinnamon spks

30 — dolo, lt. gr, med, vesic.

sh lt gr tr

835

calcite

40

50 — Dolo, lt. bff, med xtln,

ls wh with dolo rhombs 20%

Qtz A clear tr rounded

60 —

calcite wh

70 — 870

Dolo lt. bff, med xtln,

80 — ls wh fn with dolo rhombs 20

Cht, lt. gr., brn spks, subconch gran op 10%

Cht. wh, rough, op, dull 25%

calcite wh

90 — 890

dolo lt. bff med 15

ls wh fn with dolo rhombs 60

Cht. v. lt. brn & gr with brn spks, subconch 20

900 — 902

py calcite xtln

Sheet No. 9 Name of Well State Sanitarium Survey No. W-0051

Location Oakdale Date Drilled 1928 Analyst S.E. Harris Jr.

900

902 See above

ls wh & lt crm 2 few dolo rhombs 65
dolo lt bff med xlln, wh calcite xtls. 30
908 Cht 5% lt brn & crm, gran, op., conch Qtz A

10

few
ls crm & lt. brn, med & fn with dolo rhombs
dolo less than 5% lt. brn med xlln

20

Cht. v. lt. gr to pale gr., translu, conch,
Cht lt brn w. cinnamon spks

PY

30 930

ls bff probably because it is oil soaked (Conselman says artificial)
Cht 5% lt. brn

40 940 Qtz med A to a + r

ls smells petroliferous, crm to lt brn, fn to fn-med
silty grnish
Cht lt brn conch translu 25
50 950 Qtz tr some frosted & rded pyritohedrons

lt med, med
ls stained yel brn by pet fn
cht lt gr & brn

60 960 Qtz frosted & rded & A calcite
ls crm & lt. brn
Dolo v. lt. brn med 40

Cht lt. brn conch, } 5% Qtz A tr
lt. gr, subconch, op,
70 970 crm & ther spks conch, op, dull } calcite
dolo. lt. brn, med med eff bryo

ls crm, v. soft rhombs v. rapid eff
sh grn v. soft
Cht crm & lt. brn, conch, gran
80 980 clear calcite py
ls crm & lt. brn v. soft fn brach

Cht lt. brn & med mot wh conch 30%
sh lt grn v. soft tr
90 990

ls v. lt brn & crm med 60

Cht ditto wh spks 40
sh lt. grn ditto
1000 1006 calcite

Sheet No. 10 Name of Well [illegible] Survey No. W-2851

Location Oakdale (Johnson) Date Drilled 1228 Analyst [illegible]

1000

Is very dirty ditto 80
Cht: brn conch translve 20

10 1010

Is crm & lt. brn, fn to med fos frags
Cht, lt. gr, opj 5%

20 1120

Is, crn, dk brn spks 70% fos cracks
Sh dk brn, red brn spks, v.v. calc, lam 20%
Cht, lt. brn, dk brn spks, opj 10% Cht lt. brn gran conch translve
Qtz rded fn frosting py

30 1130

Is lt. brn, dk brn spks V. fos
Cht lt. brn, dk brn spks, wh mot. 5%
Sh V. calc, lam, fn red brn spks 15%

40

Sh lt. grn soft
Is crm & lt. bff fn with dolo rhombs
dolo lt. brn fn-med 15
Chl lt brn & crm conch 8%
Qtz A To rded

50 1050

Sh lt. med. grn clay, lam, v. calc soapy

Is 2% v. dk gr. mod. lt.
1058
Is crm & lt. brn v. fn to sublith, fos dolo yel, fn, por py
60 1060 Sh lt med grn
Sh lt. med grn & lt. med brn lam not very calc soapy
blk spots

dolo blk shiny, dnse

70 1070 py 1%

Ss wh-yel, rather crsely frosted, C, see enlarge, none angular
(+1 0%, 1-½ 20, ½-¼ 40%, ¼-⅛ 20, ⅛-1/16 15, silt 5%
contained in grn, v. calc materials)?
Sh grn as above tr much steel & stain from bit
Is lt. med gr fn gran

80 1080 py

Ss slty pinkish most grains wh, gnc, frosted, see enlarge
corners rded a little finer

90

1100

Sheet No. 11 Name of Well State Sanitarium Well #2 Survey No. W-0051

Location Date Drilled Analyst Harris

1100

ss wh clean frosted, sec enlarge, c all rded finer grains more c PY 5%+ tr

1102 — tr grn sh red brn nodules, soft, (grease?) 1/2-1 1%, 1/2-1/4 45, 1/4-1/8 34 1/8-1/20

Dolo med drb, fn & fn-med, dnse
some calcite rhombs

Sh grn tr cave

10

Sd as above 5% cave

1112 dolo, lt. brnish gr, fn-med, sd embedded PY

sd c frosted med & fn

Sh grn lam blk spots pyrc

1117 Dolo crm & lt. gr., v. fn to fn med no sd observed embedded PY

Sd loose, silt to med, Qtz, A to C 20% Cht; crm, op, conch less 5% PY 5%

20

Dolo crm & lt. bff v. fn to fn-med
Cht lt. gr & brn, vit, conch some banded 5%
Sd loose silt to med A to C some frosted 5%

PY

30

Dolo v. lt. brn, fn-~~med~~ gran
sd loose less 5% v fn to med A to C
Sh grn tr

Dolo crm fn & fn-med, dnse to por 40
Dolo lt. brn fn-med, med, Qtz sd grains, med & fn, rded 60
Cht wh conch, op less 5% PY

40

Dolo v. lt. bff, fn-med xtln
Cht wh, conch, op, dull, sltly vesic 45%

Qtz A to C tr frosted sec enlarge

PY

Sh grn tr

50

Dolo, Crm to v. lt. brn fn xtln sd fn to med Qtz frosted less 5%
Cht tr wh, conch, op Sh grn tr

60

Dolo, crm to v lt. brn v. fn & fn some sd embedded

Cht, wh, op, conch less 5%

70

Dolo v. lt. brn & crm v fn & fn sd embedded sec enlarg med frosted

Cht. ditto some rough dull nearly 5%

PY 2%

80

Dolo ditto sd embedded sec enlarge, med 5% frosted

cht ditto 5% +
tr wh cht oolites

PY 2%

90

Dolo lt. brn & lt. buff fn to fn-med } sd embedded sec enlarge
Dolo crm fn to fn-med

Chty dolo less 5%
Cht wh some conch, some rough, dull, op. less 10%
oolitic & spherulitic weathered clear calcite PY

1200

Sheet No. 12 Name of Well State sanitarium Well #2 Survey No. W-0051

Location Oakdale Date Drilled Analyst S.E.H.

1200

Dolo lt. buff gran 25%

Dolo crm + lt. buff xtln fn + fn med sd embedded vesic

Cht wh ditto not oölitic
Crm with light buff spots some Qtzose } 5%

10 1210 sh grn tr

Dolo fn to med lt. buff sdy med as above xtln

Cht tr as above

20 1220

Dolo crm med to crse xtln somewhat por

Cht tr

5% loose

sd 2% embedded
frosted C py tr

30 1230

Dolo lt buff fn-med to med sd embedded

Cht. 10% wh to lt. gr some Qtzose, conch, spherules, op, dull + subvit.

Qtz xtln prob from sec enlarge of sd 5%

40 1240

Dolo crm xtln fn to med

authigenic Qtz

Cht. banded spherulitic colitic wh & gr. yel cemented by wh. silica 5%
sd med + fn frosted rded none observed embedded 10%

50 1250 loose

Dolo fn-med, lt. buff + crm sd embedded
gastropod fossil ≯ 1%

Cht, wh + lt. gr., wh streaks, conch, vesic, some spherolitic
banded Qtzose 5-10%
wh dull mammalar coating

60 1260

Dolo lt. buff + crm, v. fn mostly dnse
some sd embedded as above 1%

Cht. 15% wh rough + conch, mostly dull, op, some sd embedded
some spherolitic

70 1270

Dolo 40% v. sandy crm fn dnse gran cementing sd

Sand 60% med much fn frosted A to C sec enlarge
authigenic Qtz

Cht wh opaque dull tr

80 1280

Dolo as above 35%

ss 5-5% major grade fn frosting fn sec enlarge

Cht tr

90 1290

Dolo crm sdy, fn dnse to vesic,

ss 25% fn major gr. frosting fn sec enlarge

Cht wh + lt. pink as above less <5%

1300

Sheet No. 13 Name of Well. State Sanitarium Well #2 Survey No. W-0051

Location Oakdale, Johnson Date Drilled Analyst S.E. Harris Jr.

1300

Dolo lt bff + crm, xtln, fine, sdy

Cht tr qtzose translu

SS 20% maj-gr. med, frosted, A to C see enlarge
one purple grain

sh tr grn

10

Dolo crm xtln, fn to fn-med,

SS 30% med major gr. much fn highly enlarged A to a
sh tr grn

20 PY

Dolo crm xtln, fn-med to med eff v. slow starting

SS 10% med ditto

30

Dolo med xtln slow eff

Cht 15% wh + lt. gr conch subtranluc cryptozoön

40

Dolo crm med v. v. slow eff

cht wh 1% as above

50 PY

Dolo ditto some green 50
pyrc

Cht wh + lt. gr, translu, conch 5
wh rough tripolitic dull 35

60

Dolo crm + lt. brn ditto

Cht 65% wh + lt gr as above Wh op gr translu
wh trip dull crypto

70

Dolo, lt crm, med to med-crse, porous vesicular
some sacch.

Cht wh, opaque, dnse, conch slight tr

80 PY

Dolo bf crm, + lt. gr., med to med-crse 30%

Cht Wh to lt. gr. conch, dnse 50 some qtzose
Cht, wh, rough, dolomitic 20 tripolitic

90

Cht 55 lt. gr conch, gran, crypt, oölitic; translu

Dolo 45 crm fn-med to med

1400

Sheet No....14..... Name of Well.....State..Sanitarium..Well #2..... Survey No...W-0951.....

Location .....Oakdale..(Johnson)..... Date Drilled....1928..... Analyst...S.E.H..do.....

1400

Dolo crm med v. slow eff.

Cht. as above ool. 15%

10 py

Dolo ditto

Cht. lt. gr. conch, transluc 10%
some wh oolitic

20 py

Dolo crm & lt.gr. fn to med,

py

25%
Cht lt. gr (some pnk qtz) conch transluc

30

Dolo lt. bff, med, fn, dnse
lt. Gray fn-med less 5%

Cht. wh & lt. gr. (latter transluc) conch 5%
wh rough dull op 25

40 py

Dolo lt. gr. bff, xtln fn-med to med dnse

Cht as above 15%

50

Dolo lt. gr bff fn-med dnse
gr tr

Cht. lt. gr. & wh as above ool conch } 40%
Cht. wh dull rough op. }

60

Dolo lt gr bff med dnse chty

Cht wh & lt. gr. conch some qtz 25%

70 py

Dolo lt. gr bff med dnse eff starts very slowly
grnish

30%
Cht mostly lt green gran, conch
some lt. gr. Qtz xtln

80

Dolo lt. brnish to lt. gr. bff med
some sdy grnish

5%
Cht. wh & lt. gr. ool. conch
wh op

90

Dolo ditto
grnish

Cht 5% ditto

py

1500

Sheet No. 15 Name of Well ..... State Sanitarium Well #2 Survey No. W-0051

Location ..... Oakdale (Johnson) ..... Date Drilled ... 1928 ..... Analyst ..... S.E. Hjn

1500

dolo lt. bff, med, dnse

Cht, wh conch, op less 5%

10

dolo (in large pieces) grayish & some pinkish med to crse

Cht 15% wh & lt gr, subvit,

calcite py sphalerite

20

dolo lt. bff med

Cht 30 lt. bff ool wh op.
cht lt. gr.

Sd 15% fn to med frosted
py

30

Ss mostly fn highly secondarily enlarged. Some frosted & rded
but mostly v. A. Cemented
authigenic qtz

Dolo lt. bff and pinkish, fn-med, sdy 25%

py calcite

40

Ss wh much sec enlarg. some frosted c
mostly A. (+1 0%, 1-½ 1%, ½-¼ 39, ¼-⅛ 25, ⅛-1/16 20, 15
frosting v. fn

Dolo ditto 10%

py

50

No spl.

60

Ss wh cemented dolomitic, coarser than above
+1mm 5% sec enlarge but not so much in crser grades

Cht, conch, subtransluc, wh & lt gr tr

70

Ss wh strongly cemented (dolomitic v. fn frosted c
sec enlarge much less common consid crse
(+1 tr, 1-½ 10%, ½-¼ 45%, ¼-⅛ 27, ⅛-1/16 18, silt. tr)

Cht. as above

80

Ss ditto

90

Ss as above little crse & more sec enlarge
dol cemented

1600

Sheet No. 16 Name of Well. State Sanitarium #2 Survey No. W-0051

Location Oakdale (Johnson) Date Drilled. 1928 Analyst. S.E.H.Jr.

1600

ss as above 20%

Dolomite, crm slly pnkish, xtln fn med dnse, sdy

10

ss ditto 25%

Dolo crm , fn-med, dnse
lt.gr. fn dnse py

20

Dolo, crm bff, med dnse, sdy 60%

ss frosted some sec enlarge med & fn C 40%

30

sh grn lam soft tr

dolo crm pnkish fn & fn-med sdy

ss dolo cement as above 20

tarnished py 4%

40

dolo ditto 6%

ss as above much crse 3%

50

dolo crm to pnkish, slow eff, sdy

sd. 20% frosted not much sec enlarge.

60

dolo crm & lt. gr. fn, xtln, dnse

ss 65 fn & v. fn dolo cemented A. & a
sd crser. frosted c & r

70

ss fn & v.fn dolomitic A to a ⅓ dolo sdy 15%
some sd crser frosted

80

ss ditto rather well sorted some crser c frosted

dolo crm sdy grades from ss

sh grn soft lam

90

Dolo grn bff xtln, fn, dnse

py

sd 5% like that above.
ss dolo cemented med to crse sec enlarge oolites
tr

1700

Sheet No. 17 Name of Well State Sanitarium Well #2 Survey No. W-9051

Location Oakdale (Johnson) Date Drilled 1928 Analyst S.E.H. Jr.

00

Dolo crm fn dnse some sdy

sd 5%

siderite nodules

10 py

Dolo crm, fn xtln

sd less 5%

Cht, wh rough sobvit

20 py

Dolo crm to wh

sd 1% frosted c

octohedron py 1%

30

Dolo crm v.fn brittle

sd tr crse frosted

40

Dolo pnk + crm sheety

Qtz xtln vit 2-3%

50

60

70

80

90

00

W-0051

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

Well Log Record

Owner of well Oakdale Sanitarium County Johnson

Tenant _____ Town Oakdale

Location _____ sec. 25, T. 80 N., R. 7 ~~E.~~ W. _____ Twp.

Curb elevation _____ ft. Present depth _____ ft. final depth _____ ft.

Static level: (Depth to water above / below curb) _____ ft. Pumping level _____ ft. at _____ gpm.

Contractor _____ Date drilled _____

Description*	FEET			Description*	FEET		
	Thick	From	To		Thick	From	To
Maquoketa			755				
Upper buff		755	770				
Drab		770	1020				
Dilrock		1020	1040				
Galena		1040	1050				
Spechts Ferry		1050	1058				
Mc Gregor		1058	1060				
Glenwood		1060	1070				
St Peter		1070					

*Abbreviate descriptions; use one line for each formation.

Remarks on water zones and casings _____

Temperature: Air _____ °F., Water _____ °F. at _____ A.M. / P.M. _____ 19__

Record obtained from Paul Herbert Recorded by _____

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa
Generalized Well Log
Based on Examination of Drill Cuttings

Name of Well Oakdale State Sanatorium #2 Survey No. W.-0051

Location SE¼ NW¼ SE¼ sec. 25, T. 80 N., R. 7 W. County Johnson

Total depth 1756 ft. Drilled by Thorpe Date 1928

Curb elevation 806 ft. Static level 117 ft.; Drawdown 9 ft. at 370 gal. per min.

Casing and hole size record 164' of 20" casing from 0-164'; 350' of 16" casing from 0-350'; 223' of 12" casing from 325-548'; 591' of 10" casing from 548-1140'.

Description of Formation	Thickness	Depth in feet From	To
Pleistocene system			
Kansan			
1. Till, yellow, blue. Sand, fine, dark gray, mostly of clear quartz, but many of dark minerals and of limestone. No samples.	164'	0	164'
Devonian system			
Upper Devonian series			
Cedar Valley formation			
2. Limestone, gray, earthy; fossiliferous	26'	164'	190'
3. Limestone, buff and black mottled dense	20'	190'	210'
4. Limestone, crystalline, earthy, argillaceous	50'	210'	260'
Middle Devonian series			
Wapsipinicon formation			
Davenport member			
5. Limestone, cream, sublithographic, subconchoidal	15'	260'	275'
Spring Grove member			
6. Dolomite, fine-grained, crystalline, argillaceous	23'	275'	298'
7. Shale, blue gray in concreted masses with a little argillaceous limestone	7'	298'	305'
8. Dolomite, light gray, fine medium-grained	3'	305'	308'

	Description	Thick.	From	To
	Silurian system			
	Niagaran series			
	Gower-Hopkinton formation			
9.	Dolomite, fine-grained, crystalline, argillaceous	17'	308'	325'
10.	Dolomite, cryptocrystalline, dense	3'	325'	328'
11.	Dolomite, medium gray. Mixed with shale, 20%, green (possibly cavity clay)	20'	328'	348'
12.	Dolomite, cream, porous, vuggy	56'	348'	404'
13.	Dolomite, slightly porous, vesicular	36'	404'	440'
	Kankakee-Edgewood formation			
14.	Dolomite, very light buff, fine medium-grained, porous, cherty	70'	440'	510'
	Ordovician system			
	Cincinnatian series			
	Richmond group			
	Maquoketa formation			
	Brainerd member			
15.	Shale, silty, dolomitic, not laminated	35'	510'	545'
16.	Dolomite, medium gray, medium-grained, crystalline	24'	546'	570'
17.	Shale, not laminated, dolomitic	5'	570'	575'
	Ft. Atkinson member			
18.	Dolomite, earthy, cherty, silty and sandy	45'	575'	620'
	Clermont member			
19.	Shale, light gray, silty, dolomitic	18'	620'	638'
	Elgin member			
20.	Dolomite, light greenish gray, fine medium-grained, fossiliferous	7'	638'	645'
21.	Shale, light gray, silty, dolomitic	55'	645'	700'
22	Dolomite, hard, crystalline, slightly inflammable	40'	700'	740'
23.	Shale, calcareous, plastic	15'	740'	755'

Description	Thick.	From	To
Mohawkian series			
Galena formation			
Dubuque-Stewartville members			
24. Dolomite, buff, medium-grained, hard, porous, vesicular	25'	755'	780'
25. Limestone, white, fine-grained, grading into dolomite 30%, buff, medium-grained	55'	780'	835'
26. Dolomite, buff, crystalline, grading into limestone 20%, as from 780' to 835 feet	35'	835'	870'
Prosser member			
27. Dolomite, crystalline 45%. Chert 35%. Limestone 20%	20'	870'	890'
28. Limestone, dolomitic, cherty	130'	890'	1020'
Decorah formation			
29. Limestone, light brown, brown specks; shale partings. Shale, brown, calcareous, 2-foot layer at 1038'	30'	1020'	1050'
Platteville formation			
Spechts Ferry member			
30. Shale, green, calcareous	8'	1050'	1058'
McGregor member			
31. Limestone, light brown, very fine-grained to sub-lithographic	2'	1058'	1060'
Glenwood member			
32 Shale, green and brown, laminated, calcareous	10'	1060'	1070'
Chazyan series			
St. Peter formation			
33. Sandstone, white, medium-grained, frosted	32'	1070'	1102'
Beekmantownian series			
Prairie du Chien formation			
Willow River member			
34. Dolomite, drab, fine, medium-grained, sandy, cherty	168'	1102'	1270'

	Description	Thick.	From	To
	Root Valley member			
35.	Sandstone, medium-grained. Some dolomite and chert	20'	1270'	1290'
	Oneota member			
36.	Dolomite, sandy and cherty	40'	1290'	1330'
37.	Dolomite 90-40%, cream, medium-grained. Chert 10-60%, light gray, conchoidal, translucent, some oolitic	200'	1330'	1530'
	Cambrian system St. Croixan series Trempealeau formation Jordan member			
38.	Sandstone, white, fine-grained to medium-grained below, dolomitic cement	70'	1530'	1600'
	St. Lawrence member			
39.	Dolomite, cream and pink, fine medium, very sandy	80'	1600'	1680'
40.	Dolomite, rough, very slightly sandy	70'	1680'	1750'

T.D. 1750 feet.

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Wells at Oakdale Sanitarium

Well No. 1 (Shallow)

Location: SE¼ NW¼ SE¼ sec. 25, T. 80 N., R. 7 W.
Elevation: Land surface and pump house floor is about 796 feet above sea level.
Date drilled: About 1908.
Depth: Reported 350 feet. Measured July, 1944, 325½ feet.
Casing: 6-inch casing to unknown depth.
Measuring point: Water level is referred to top of flange on 6-inch pipe 0.2 foot above pump house floor.
Depth to water: 111.03 feet below measuring point on July 28, 1944.
Principal aquifer: Probably upper part of Silurian rocks.
Yield: Not known.
Mineral analysis: Yes, see attached sheet.
Remarks: This well is not in use.

Well No. 2 (St. Peter well)

Location: SE¼ NW¼ SE¼ sec. 25, T. 80 N., R. 7 W.
Elevation: Pump house floor, 808 feet above sea level.
Driller: Thorpe Bros. Well Co.*
Date drilled: 1919*
Depth: 1137 feet*
Casing: 154 feet of 12-inch casing from 11? to 165? feet.*
785 feet of 6-inch casing from 0 to 785 feet.*
Water level: 127 feet below land surface in 1919.*
Temperature: Reported as 67°F.*
Principal aquifer: At 1097 feet, near bottom of St. Peter sandstone.*
Others at 750 feet in Galena dolomite.*
Yield: 50 gallons per minute with "great" drawdown.*
Mineral analysis: None, water reported to be hard.

On July 25 the depth to water was 144½ feet below the plug in plate over well, about 0.4 foot above pump house floor. This measurement was obtained with the adjacent deep well pumping. When pumping was stopped on the adjacent well, the water level in the "St. Peter" well rose 0.58 foot in 30 minutes. The "St. Peter" well is not used except in an emergency.

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* From I.G.S., vol. 33.

Well No. 3 (Jordan well)

Location: SE¼ NW¼ SE¼ sec. 25, T. 80 N., R. 7 W. About 16 feet east of St. Peter well.
Elevation: Pump house floor, 808 feet above sea level.
Driller: Thorpe Bros. Well Co.*
Date drilled: 1928*
Depth: 1754 feet 10 inches*
Casing: 164 feet of 20-inch casing from 0 to 164 feet.*
350 feet of 16-inch casing from 0 to 350 feet.*
223 feet of 12-inch casing from 325 to 548 feet.*
591 feet of 10-inch casing from 548 to 1140 feet.*
Water level: 117 feet below land surface in 1928.*
Principal aquifer: Main supply in and below the Jordan sandstone (Top Jordan sandstone at 1530 feet).*
Yield: When pumped at rate of 370 gallons a minute the drawdown was 9 feet.*
Mineral analysis: Yes, see attached sheet.

The following non-pumping water level measurements have been made over a period of years:

Date	Depth to water in feet
1928	117
1931	126
1938	143
July, 1944	153

The well is pumped at the present time at the rate of about 200 gallons per minute with a drawdown of about 12 feet.

* From I.G.S. vol. 33.

IOWA GEOLOGICAL SURVEY
Water Analysis Comparison

Town: _____ County: _____ Location: _____ Sec. ____ T. ____ N., R. ____ E. W.

Owner: _____ Contractor: _____ Date Started: _____

	1	2	3	4	5	6
Well Number or Location	SUI Hospital	SUI Children's	Oxford	Hillcrown		
Depth of Sample	Ice Room	Hospital		Well No. 2		
Formation Source	Silurian	Silurian	Silurian	Silurian		
Water Level Below Curb	58	66.39				
How Sampled	from pump	from pump	from pump	from pump		
Sampled by	K.F.L.	K.F.L.		K.F.L.		
Date Sampled	12-17-42	3-24-43		11-27-43		
Total Solids	806	693	2481	1717		
Dissolved Solids						
Insoluble Matter	0.0	11.0	12.4	35.0		
Alkalinity (MeO)	328.0	318.0		222.0		
Nitrite (NO_2)						
Nitrate (NO_3)	0.0	Tr.		0.0		
Sodium(Na) & Potassium(K)*	49.2	23.2	190.5	153.4		
Calcium (Ca)	120.8	103.6	333.7	228.0		
Magnesium (Mg)	55.5	54.2	123.8	95.2		
Iron (Fe)						
Iron (Unfiltered)**	0.3	0.4	3.8	0.9		
Manganese (Mn)	0.0	Tr.	0.05	0.0		
Aluminum (Al)			2.4			
Fluorine (F)	1.0	0.0	0.0	1.5		
Chlorine (Cl)	1.0	11.0	12.0	16.0		
Sulphates (SO_4)	297.0	197.1	1469.0	979.2		
Bicarbonates (HCO_3)	400.2	388.0	261.1	270.8		
Phosphates (PO_4)						
Borates (BO_3)						
Calculated Hardness***	530	482	1351	963		
Water Lab. Number	31	28.2	79	56.3		

*Na & K not separated, calculated as Sodium(Na): **Includes iron precipitated or flocculated after sample collected: ***Calculated as $CaCO_3$.

Completed Depth _____ ft.; Final Static Water Level _____ ft.; Production _____ GPM; Draw-down _____ ft., at _____ GPM; Gallons per foot draw-down _____. Date Completed _____ 193_.

Remarks: _____

IOWA GEOLOGICAL SURVEY
Water Analysis Comparison

Town: _____ County: _____ Location: _____ Sec. ____ T. ____ N., R. ____ E. W.

Owner: _____ Contractor: _____ Date Started: _____

Oakdale wells

Well Number or Location	1	2	3	4	5	6
	No. 2(1928)	No. 3 (1928)	No. 1	C.H. Gellette		
Depth of Sample						
Formation Source	Jordan	Jordan	Dev. and Sil. Oneota & Jordan			
Water Level Below Curb	117	153?				
How Sampled						
Sampled by						
Date Sampled	1928?	1943	?	June 5, 1940		
Total Solids						
Dissolved Solids	1018±	1179±	264.			
Insoluble Matter			23.2			
Alkalinity (MeO)						
Nitrite (NO_2)						
Nitrate (NO_3)		0.3		0.0		
Sodium(Na) & Potassium(K)*	176.	223.5	16.3	70.8		
Calcium (Ca)	102.8	109.3	66.8	85.8		
Magnesium (Mg)	48.0	46.4	14.2	32.8		
Iron (Fe)						
Iron (Unfiltered)**	0.3	0.2	0.8	0.3		
Manganese (Mn)	0.0			0.0		
Aluminum (Al)	0.7		1.0			
Fluorine (F)	1.0	.7	Tr.	1.2		
Chlorine (Cl)	37.0	84.0	2.0	15.0		
Sulphates (SO_4)	502.5	620.5	2.5	201.2		
Bicarbonates (HCO_3)	305.0	292.8	300	346.5		
Phosphates (PO_4)						
Borates (BO_3)						
Calculated Hardness***	455.0	461.3	227	354		
Water Lab. Number	26.6	26.9	13.3	20.7		

*Na & K not separated, calculated as Sodium(Na): **Includes iron precipitated or flocculated after sample collected: ***Calculated as $CaCO_3$.

Completed Depth _____ ft.; Final Static Water Level _____ ft.; Production _____ GPM; Draw-down _____ ft., at _____ GPM; Gallons per foot draw-down _____. Date Completed _____ 193_.

Remarks: _____