

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W-0051

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 _____ above
ft. 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	<u>July 29, 1942</u>	_____	_____
Sampled by	<u>K.F. Anderson</u>	_____	_____
Total solids	<u>1085</u>	_____	_____
Insoluble matter	<u>12.0</u>	_____	_____
Alkalinity (Meo)	<u>240.0</u>	_____	_____
Alkalinity (Phn)	<u>0.0</u>	_____	_____
pH	<u>7.5</u>	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>4.5</u>	_____	_____
Alkali as sodium	<u>223.5</u>	_____	_____
Calcium	<u>109.3</u>	_____	_____
Magnesium	<u>46.4</u>	_____	_____
Iron (unfiltered)	<u>0.2</u>	_____	_____
Manganese	<u>0.0</u>	_____	_____
Nitrate	<u>0.3</u>	_____	_____
Fluoride	<u>0.7</u>	_____	_____
Chloride	<u>34.0</u>	_____	_____
Sulfate	<u>620.5</u>	_____	_____
Bicarbonate	<u>292.8</u>	_____	_____
Hardness (ppm)	<u>461.3</u>	_____	_____
Hardness (gpg)	<u>26.9</u>	_____	_____
Remarks	_____	_____	_____

Laboratory data:

Sample storage location _____

Sample range 78-1750 No. spls. 156 No. dupls. & cond. 137 Per - 600d

Spls. prepared by _____ Washed range _____ by _____

Driller's log and cond. _____

Insoluble residues: Prepared by _____ Studied by _____ Strip log _____

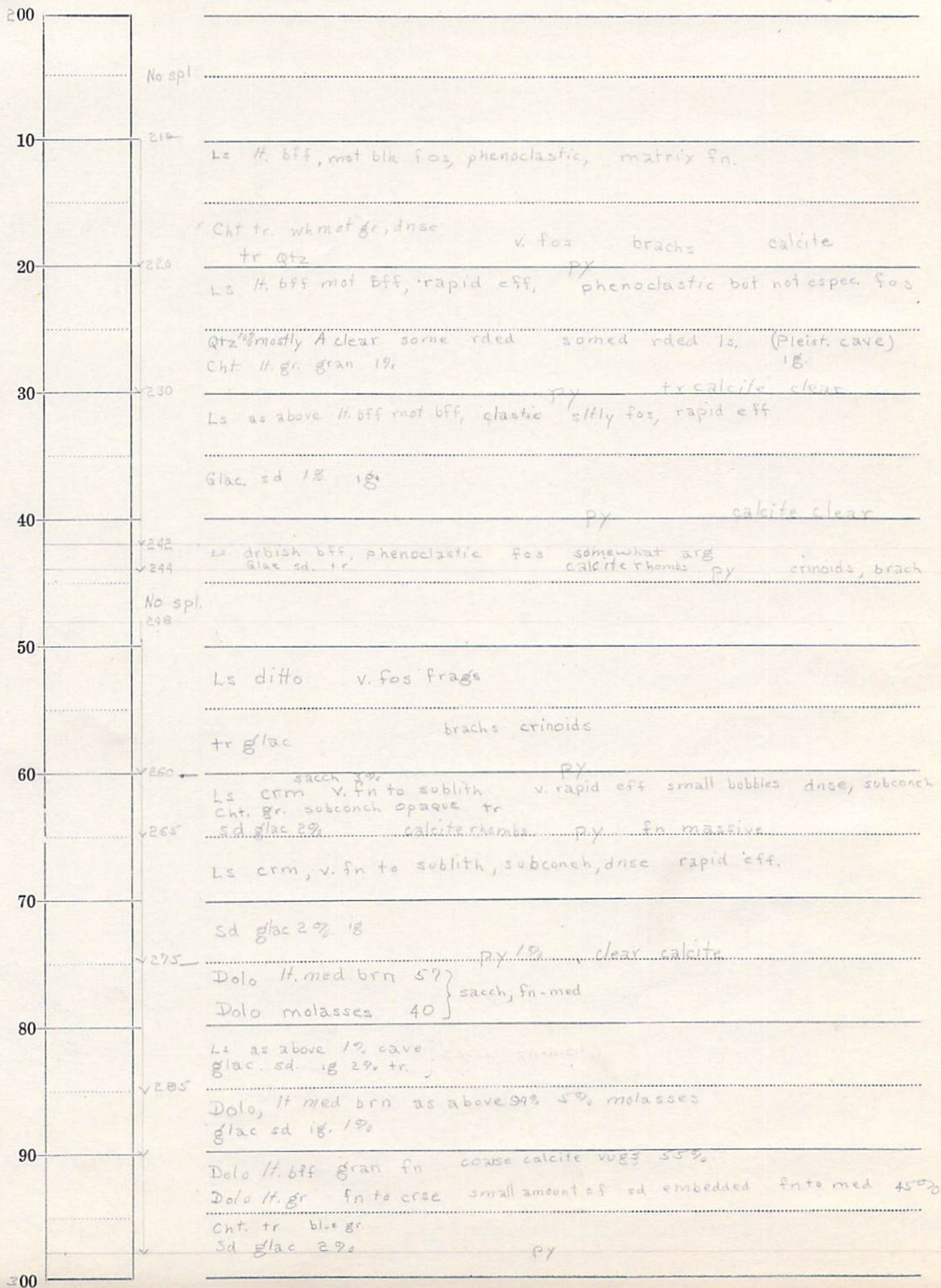
Microscopic study 78-1750 Harris Gulf strip log Harris Gulf

Gen. log yo. Correl. by Harris - Gulf

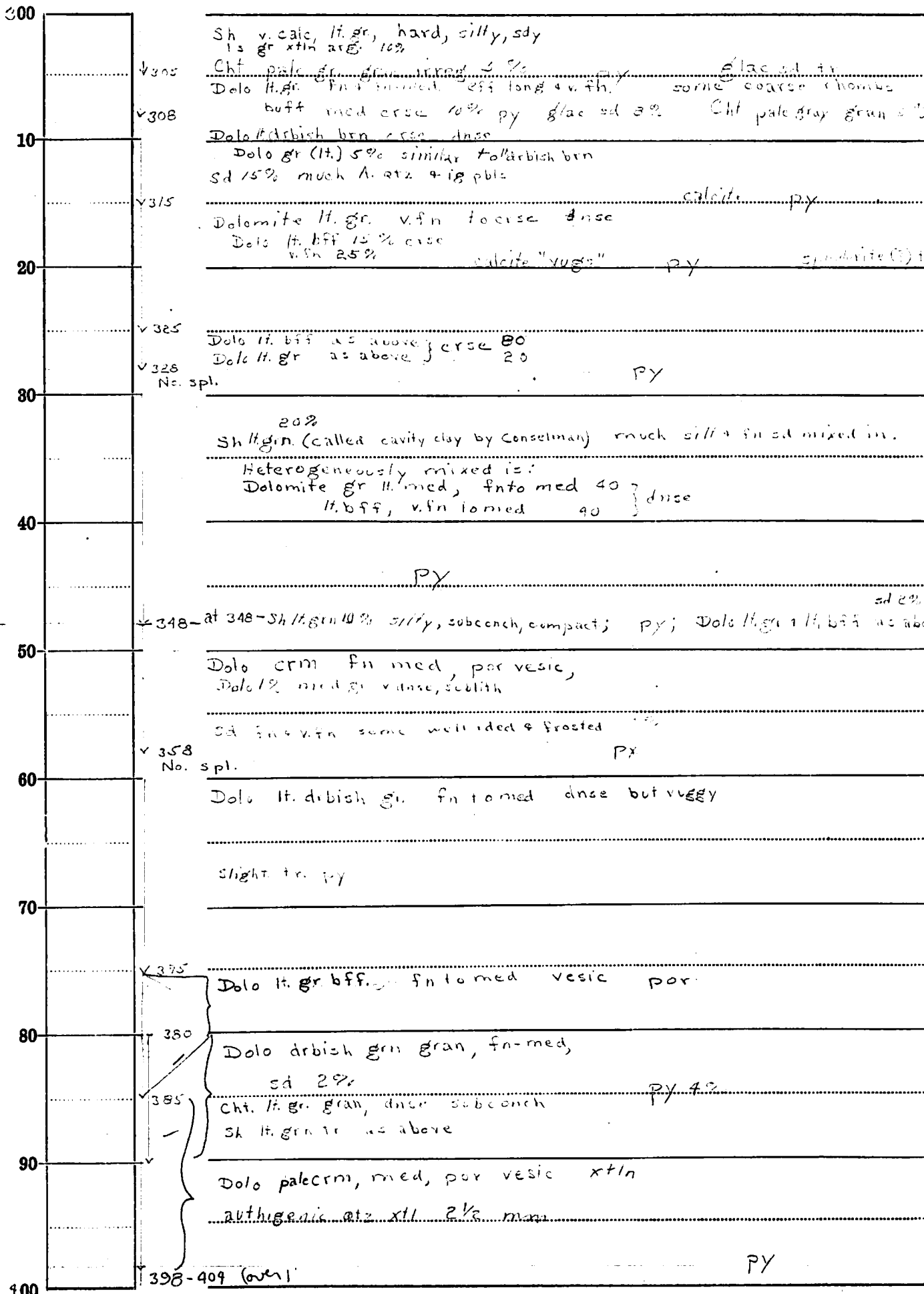


Blank lined area for notes, corresponding to the vertical scale.

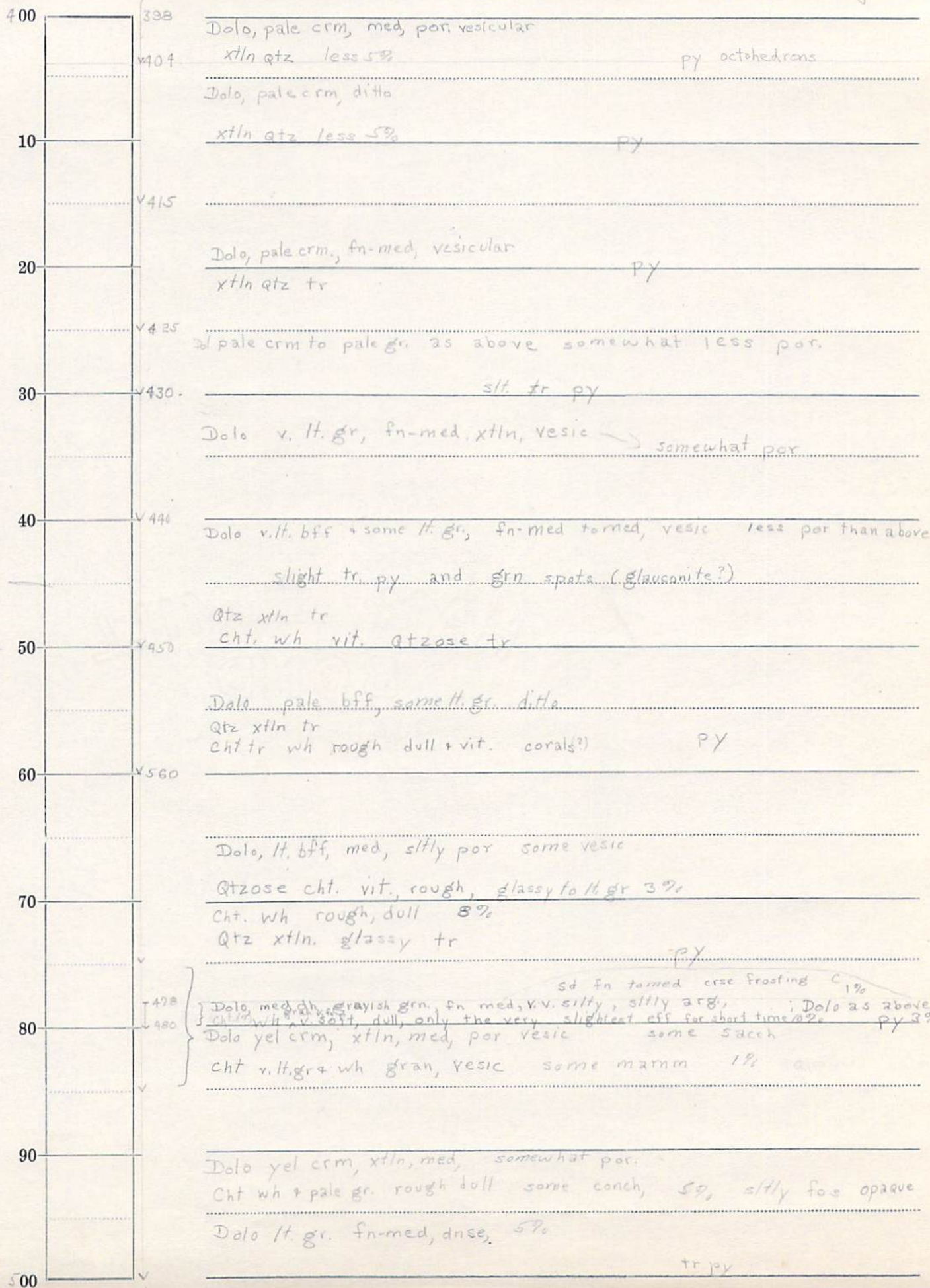
78
 Ls 1/4 gr to 1/2 med med, 45% fn-med 53% phenoclastic dnse calcite rhombs
 chrt 2% v. lt. 1/2 med gr, subtranslec, subconch; tr Qtz brachs + spines, crinoids
 Ls 1/4 gr fn gran. 500 20% petrolif.
 brn phenoclastic dull v. arg 55
 com. crse xtl. transloc 25
 Brachs, crinoid stems
 Qtz tr
 90
 Ls sltly buffish gr. fn to ~~sltly~~ some has a subconch fracture
 dnse
 v. fos bryozoa, crinoids
 200
 py some wh + yel calcite

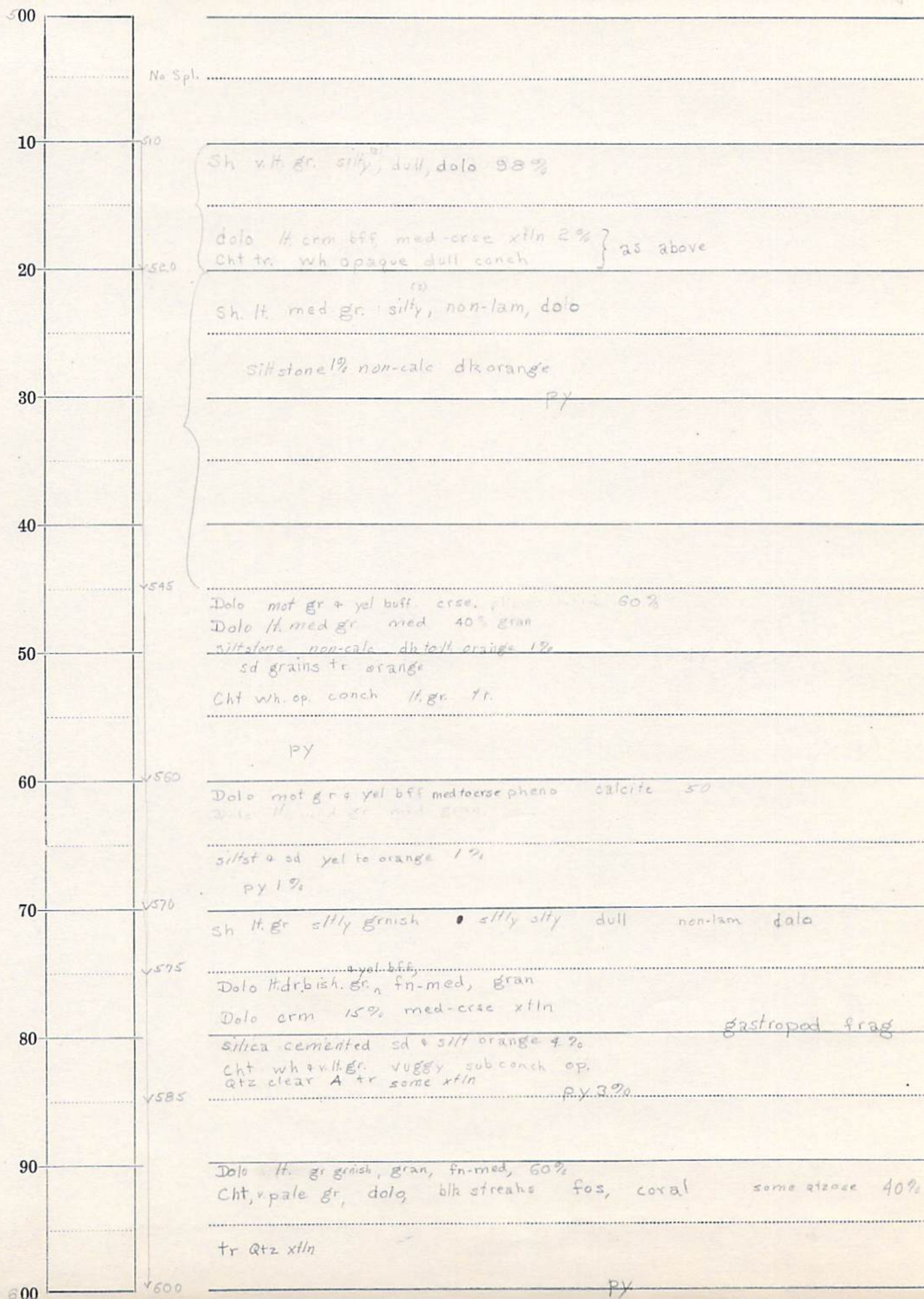


Location Oklahoma Date Drilled 1928 Analyst S.B. Hays

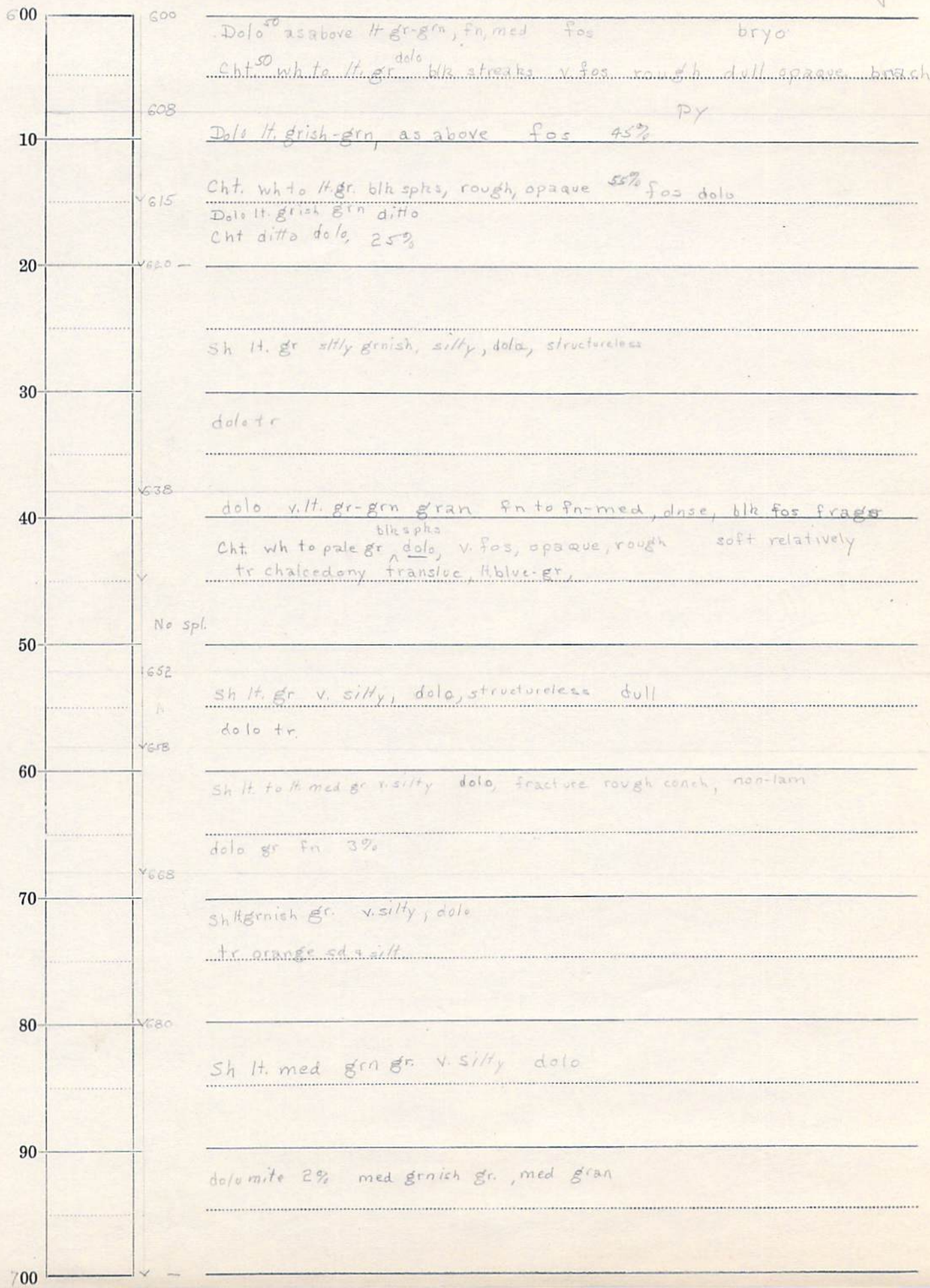


Location Oabdale (Johnson) Date Drilled 1928 Analyst S.E.H.J.

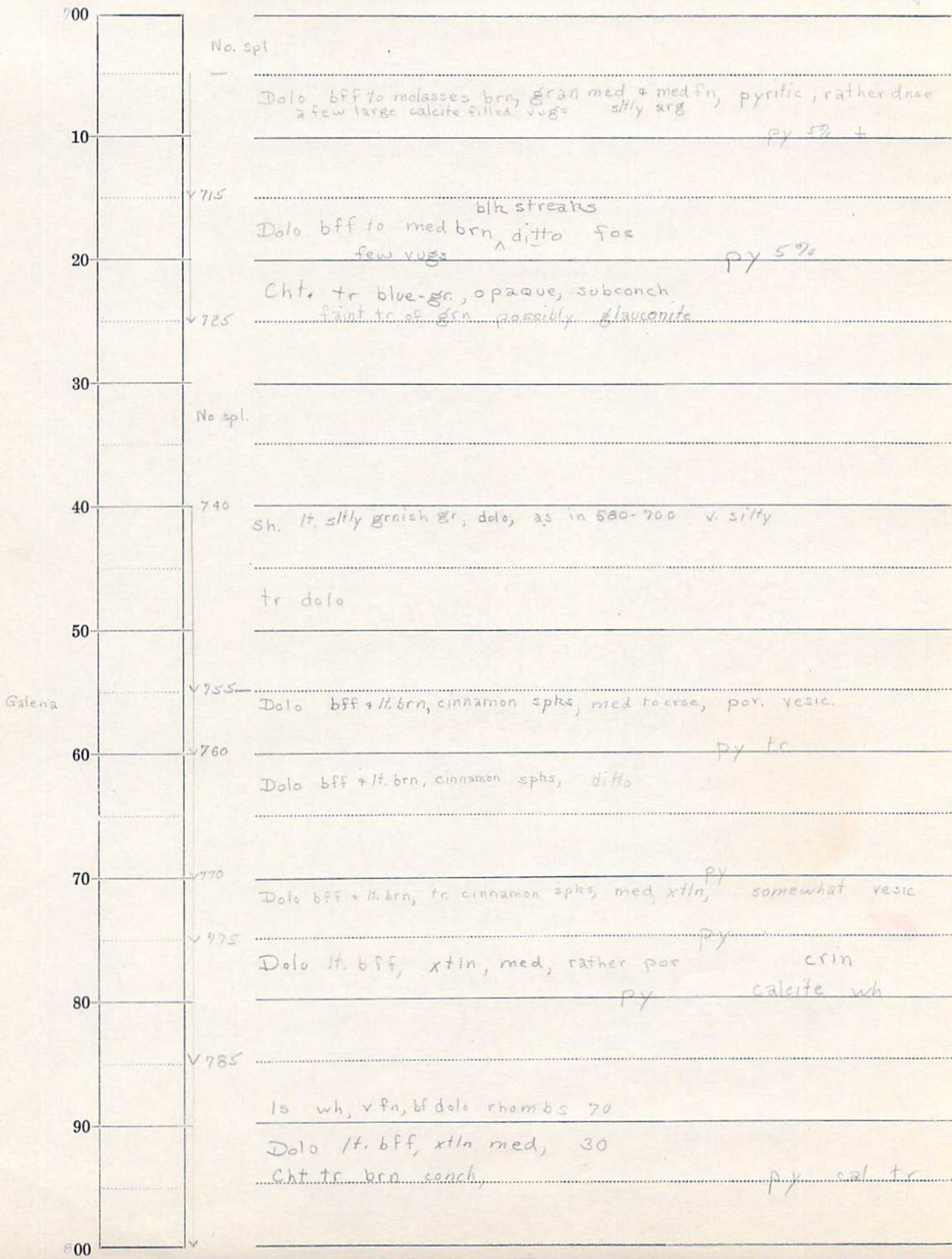




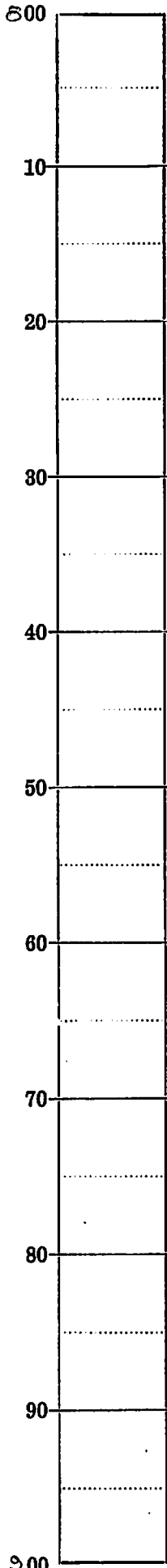
Location Oakdale (Johnson) Date Drilled 1928 Analyst S.E. Hannigh



Location Oshale (Johnson) Date Drilled 1928 Analyst S.E. Harrison



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



1s, wh, v. fn, buff dolo rhombs 60%
 dolo lt. bff, med, some cinnamon spks 40%
 py calcite

810

6s.
 1s wh v. fn buff dolo rhombs (same size - grade as in dolo)
 eff v. rapid
 3s.
 Dolo bff, med as above

820

1s wh, v. fn. buff dolo rhombs eff v. rapid, dolo rather slow
 dolo bff as above 30%
 tr cinnamon spks
 dolo, lt. gr, med, vesic.

835

sh ll gr tr calcite

40

Dolo, lt. bff, med xtn,
 1s wh with dolo rhombs 20%

50

qtz A class tr some rdcd

60

calcite wh

870

Dolo lt. bff, med xtn,

1s wh fn with dolo rhombs 20
 cht, lt. gr, brn spks, subconch gran op 10%
 cht. wh, rough, op, dull 25%
 calcite wh

890

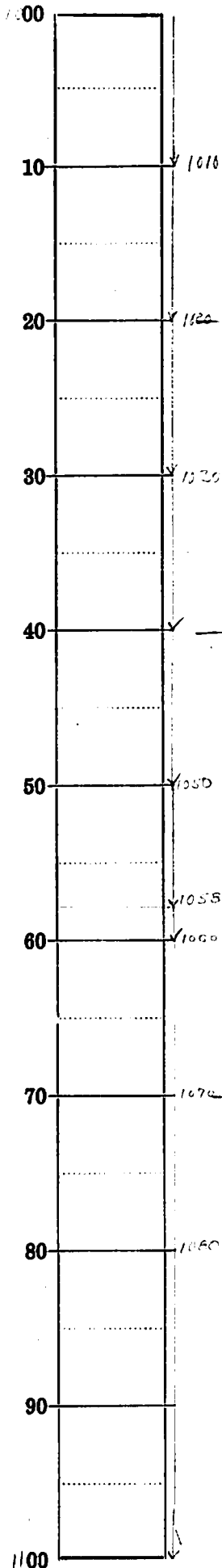
dolo lt. bff med 15
 1s wh fn with dolo rhombs 6s
 cht. v. lt. brn & gr with brn spks, subconch 20

900

py calcite some sltn

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

900		See above
	902	1s wh & lt. crm 2 few dolo rhombs 65 dolo lt. bff med xlln, wh calcite xtlc. 30
10	908	Cht 5% lt. brn & crm, gran, op, conch Qtz A
		1s crm & lt. brn, med & fn with ^{few} dolo rhombs dolo less than 5%, lt. brn med xlln
20		Cht. v. lt. gr to pale gr., transluc, conch, Cht. lt. brn w. sinamon splcs
30	930	PY
		1s bff probably because it is oil soaked (Conselman says artificial) Cht. 5% lt. brn
40	940	Qtz med A to a + r
		1s smells petroliferous, crm to lt. brn, fn to fn-med shly grnish Cht lt. brn conch transluc 25
50	950	Qtz tr some frosted & rded pyritohedrons lt med, med
		1s stained yel. brn by pet. fn cht lt. gr & brn
60	960	Qtz frosted & rded & A Calcite 1s crm & lt. brn Dolo v. lt. brn med 40
		Cht lt. brn conch, } 5% Qtz A tr lt. gr, subconch, op } crmp dher sphs conch, op, dull } calcite
70	970	dolo. lt. brn, med med eff bryo 1s crm, v. soft rhombs v. rapid eff sh grn v. soft
		Cht crm & lt. brn, conch, gran 1s crm & lt. brn v. soft fn brach clear calcite py
80	980	
		Cht lt. brn & med mol wh conch 30% sh lt. grn v. soft + tr
90	990	
		1s v. lt. brn & crm med 60
		Cht ditto wh splcs 40 sh lt. grn ditto calcite
1000	1000	



Is very dirty ditto 30
 Cht: brn conch transluc 20

10 1010
 Is crm & lt. brn, fn to med fos frags
 Cht, lt. gr, op, 3%

20 1020
 Is, crm, dk brn spks 70% fos brachs
 Sh. dk. brn, red brn spks, v.v. calc lam 20%
 Cht, lt. brn, dk brn spks, op, 10% Cht lt. brn gran conch transluc

30 1030
 Qtz rded in frosting py
 Is lt. brn, dk brn spks v. fos
 Cht lt. brn, dk brn spks, wh mat: 5%
 Sh v. calc, lam, fn red brn spks 15%

40
 Sh lt. brn mat
 Is crm & lt. buff fn with dolo rhombs
 dolo lt. brn fn-med 15
 Cht lt brn & crm conch 8%
 Qtz A to rded

50 1050
 Sh lt. med grn clay, lam, v. calc soapy

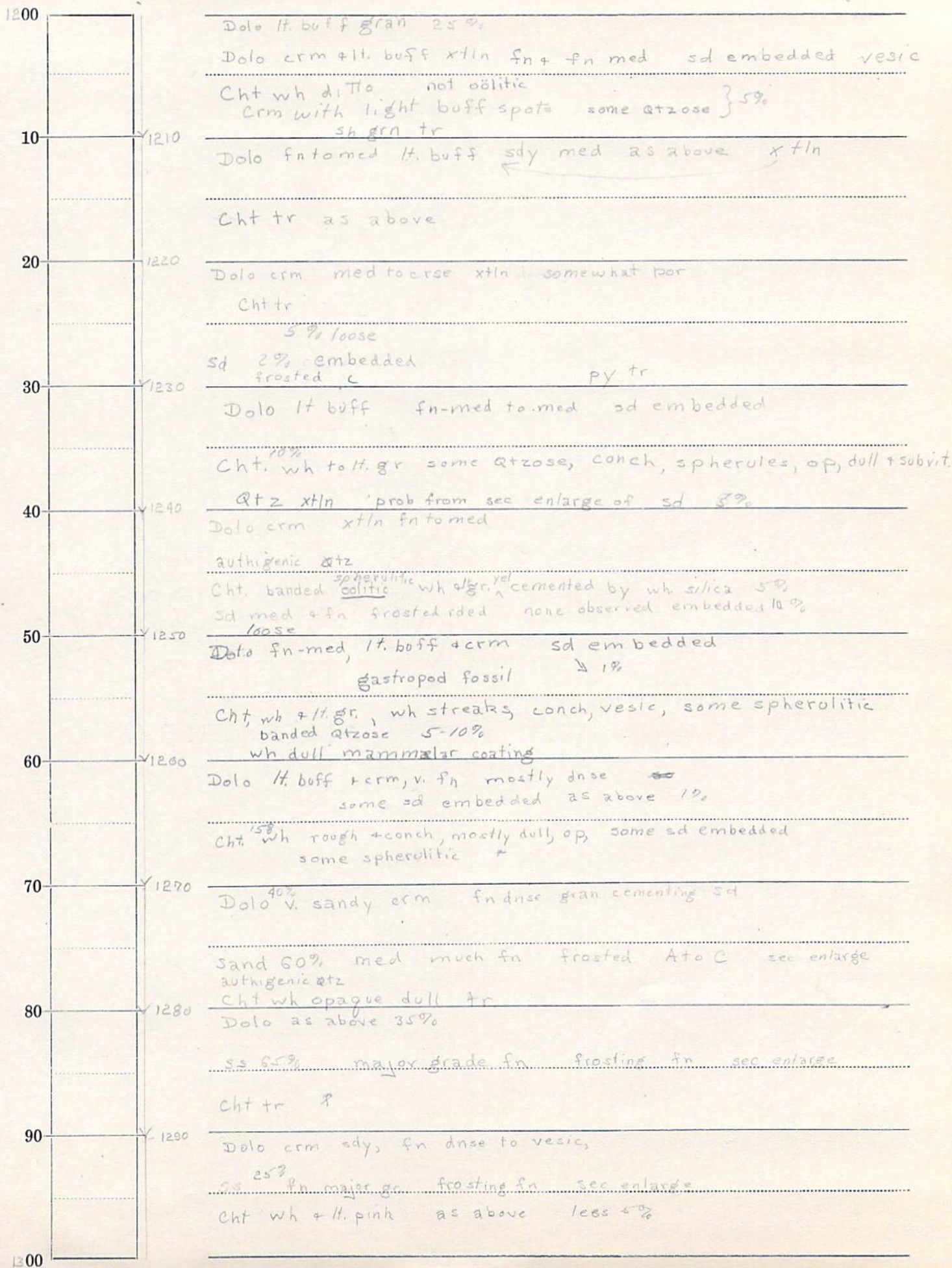
60 1055
 Is 2% v. lt. gr. med. lt.
 Is crm & lt. brn v. fn to sublt, fos dolo yel, fn, por.
 Sh lt med grn py
 Sh med grn & lt. med brn lam not very calc soapy
 blk spots py

70 1070
 Ss wht yel, rather crsely frosted, C, sec enlarge, none angular
 (+1 0%, 1-1/2 20, 1/2-1/4 40, 1/4-1/8 20, 1/8-1/16 15, silt 5%
 (all embedded in grn, v. calc, matrix?)
 sh grn as above fr much steel stain from bit
 Is lt. gr fn gran

80 1080
 Ss silty pinkish most grains wh, frosted, sec enlarge
 corners rded little finer

Location Date Drilled Analyst Harris

100	Y02	ss wh clean frosted, sec enlarge, c all rdd tr grn sh red brn nodules, soft fines (grease?) 1/2-1%, 1/8-1/4, 1/16 3 1/2 tr	py
		Dolo med drb, fn f fn-med, dnse some calcite rhombs	
10	Y112	sh grn tr cave sd as above 5% cave dolo, lt. brnish gr, fn-med, sd embedded	py
		sd c frosted med & fn	
	Y117	sh grn lam blk spots pyrc Dolo crm & lt. gr, v. fn to fn med no sd observed embedded sd loose, silt to med, qtz, A to c 20% Cht; crm, op, conch less 5% py 5%	py
20		Dolo crm & lt. buff v. fn to fn-med cht lt. gr & brn, vit, conch some banded 5%	
		sd loose silt to med A to c same frosted 5%	
			py
30		Dolo v. lt. brn, fn gran sd loose less 5% vfn 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, rdd 60	
40		cht wh conch, op less 5%	py
		Dolo v. lt. buff, fn-med xtn	
		cht wh, conch, op, dull, silt vesic 45%	
		qtz A to c tr frosted sec enlarge	
			py
50		sh grn tr	
		Dolo, crm to v. lt. brn fn xtn cht tr wh, conch, op	sd fntoned qtz frosted less 5% 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 enlarge med frosted	
		cht ditto some rough dull nearly 5%	
80		Dolo ditto sd embedded sec enlarge, med frosted	py 2%
		cht ditto 5% + tr wh cht oolites	
90		Dolo lt. brn & lt. buff fn to fn-med } Dolo crm fn to fn-med } cht dolo less 5%	sd embedded sec enlarge py 2%
		cht wh some conch, some rough, dull, op. less 10%	
100		oolitic & spherulitic weathered clear calcite	py





Dolo lt buff + crm, xtn, fine, sdy
 Cht^{tr} atzose transluc
 SS^{20%} maj-gr. med, frosted, A to C sec enlarge
 one purple grain

sh tr grn

Dolo crm xtn, fn to fn-med,

SS^{30%} med major gr. much fn highly enlarged A to
 sh tr grn PY

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

SS^{10%} med ditto

Dolo med xtn slow eff

Cht^{15%} wh + lt gr conch subtransluc cryptozoan

Dolo crm med v. v. slow eff

cht wh 1% as above

Dolo ditto some green so
 pyrc PY

Cht wh + lt gr, transluc, conch &
 wh rough tripolitic dull 35
 crm w/ brn
 Dolo ditto

Cht^{65%} wh + lt gr as above wh op gr transluc
 wh trip dull crypto

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

Cht wh, opaque, dnse, conch slight tr

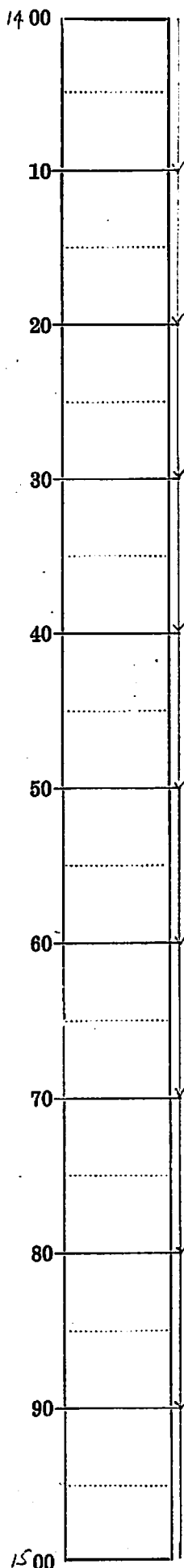
Dolo buff crm, + lt gr, med to med-crse 30%
 PY

Cht wh to lt gr conch, dnse SD some atzose
 Cht, wh, rough, dolomitic 20 tripolitic

Cht^{55%} lt gr conch, gran, crypt, oolitic; transluc

Dolo^{45%} crm fn-med to med

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



Dolo crm med v. slow eff.

Cht. as above ool. 15%

Dolo ditto PY

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

Dolo crm + lt. gr. fn to med, PY

Cht 25% lt. gr (some pnhtz) conch transluc PY

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

Cht. wh + lt. gr. (later transluc) conch 5%
wh rough dull op 25%

Dolo lt. gr. bff, xtn fn-med to med dnsc PY

Cht as above 15%

Dolo lt. gr bff fn-med dnsc
gr tr

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

Dolo lt gr bff med dnsc chty

Cht wh + lt. gr. conch some Qtz 25%

Dolo lt. gr bff ^{grnisch} med dnsc PY eff starts very slowly

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

Dolo lt. brnsh to lt. gr. bff med
some shly grnisch

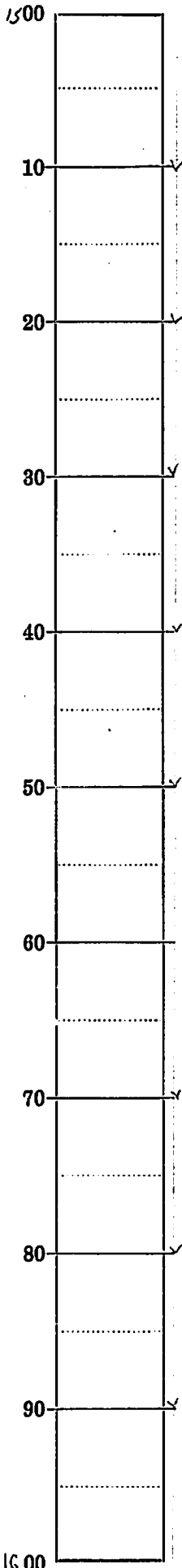
Cht. 5% wh + lt. gr. ool. conch
wh op

Dolo ditto
grnisch

Cht 5% ditto

PY

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



dolo lt. bff, med, dnsc

cht, wh conch, op less 5%

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

cht ^{15%} wh + lt. gr, subvit,

calcite py sphalerite

dolo lt. bff med

cht ³⁰ lt. bff ool wh op.

cht lt. gr. sd 15% fn to med frosted py

ss mostly fn highly secondarily enlarged. some frosted & rd. cemented

authigenic. 2%

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

py calcite

ss wh much sec enlarg. some frosted c

mostly A. (+1 0%, 1-1/2 1%, 1/2-1/4 20, 1/4-1/8 25, 1/8-1/16 20, 15

frosting v. fn

Dolo ditto 10%

py

No spl.

ss wh cemented dolomitic, coarser than above

tlmm 5% sec enlarge but not so much in crser grades

cht, conch, subtransluc, wh + lt gr tr

ss wh strongly cemented dolomitic v. fn frosted c

sec enlarge much less common consid crse

(+1 tr, 1-1/2 10%, 1/2-1/4 5%, 1/4-1/8 27, 1/8-1/16 18, silt. tr)

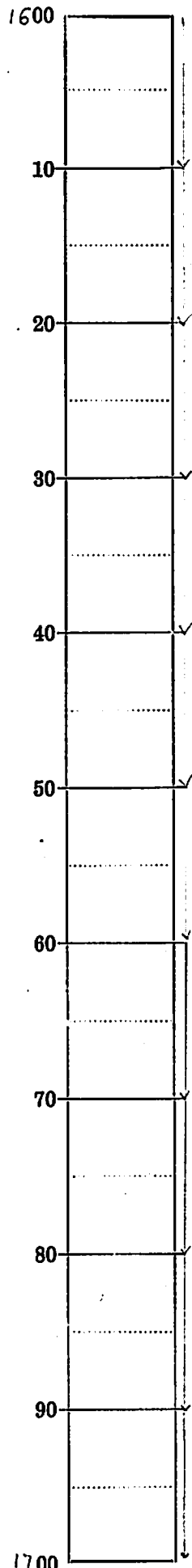
cht. as above

ss ditto

ss as above little crse + more sec enlarge

dolo cemented

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



SS as above 20%

Dolomite, crm shly pinkish, xtn fn med dnsc, sdy

SS ditto 25%

Dolo crm ; fn. med, dnsc
lt. gr. fn dnsc py

Dolo, crm buff, med dnsc, sdy 60%

ss frosted some sec enlarge med + fn C 40%

sh grn lam soft tr

dolo crm pinkish fn + fn-med sdy

ss dolo cement as above 20 tarnish py 4%

dolo ditto 65

SS as above much crse 35

dolo crm to pinkish, slow eff, sdy

sd. 20% frosted not much sec enlarge.

dolo crm + lt. gr. fn, xtn, dnsc

ss ⁶⁵ + v. fn
fn dolo cemented A. + a
sd crse: frosted cr

ss fn + v. fn dolomitic A to a \approx dolo sdy 15%
some sd crse frosted

ss ditto rather well sorted some crse c frosted
dolo crm sdy grades from ss
sh grn soft lam

Dolo gr buff xtn, fn, dnsc

sd 5% like that above py

ss dolo cemented med to crse sec enlarge oolites
tr

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



Dolo crm fn dnse some sdy

sd 5% siderite nodules

Dolo crm, fn xtn PY

sd less 5% chrt wh rough subvit PY

Dolo crm to wh

sa 1% frosted c octahedron py 1%

Dolo crm v. fn brittle

sd trerse frosted

Dolo pnk + crm sheety

Qtz xtn vit 2-3%

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 W. _____ Twp.

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

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

Contractor _____ Date drilled _____

Description*	F E E T			Description*	F E E T		
	Thick	From	To		Thick	From	To
<u>Maquoketa</u>			<u>755</u>				
<u>Upper buff</u>		<u>755</u>	<u>770</u>				
<u>Drab</u>		<u>770</u>	<u>1020</u>				
<u>Pilrock</u>		<u>1020</u>	<u>1040</u>				
<u>Galena</u>		<u>1040</u>	<u>1050</u>				
<u>Specht's Ferry</u>		<u>1050</u>	<u>1058</u>				
<u>McGregor</u>		<u>1058</u>	<u>1060</u>				
<u>Glenwood</u>		<u>1060</u>	<u>1070</u>				
<u>St Peter</u>		<u>1070</u>					

*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 Senatorium #2 Survey No. W. -0051
 Location SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 80 N., R. 7 W. County Johnson
 Total depth 1756 ft. Drilled by Thorpe Date 1928
 Curb elevation 808 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'

<u>Description</u>	<u>Thick.</u>	<u>From</u>	<u>To</u>
Silurian system			
Niagaran series			
Cower-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			
Cincinnati series			
Richmond group			
Maquoketa formation			
Brainard 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'

	<u>Description</u>	<u>Thick.</u>	<u>From</u>	<u>To</u>
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'

	<u>Description</u>	<u>Thick.</u>	<u>From</u>	<u>To</u>
	Rest 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 colitic	200'	1330'	1530'
	Gambria 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: SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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, 325 $\frac{1}{2}$ 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: SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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 117 to 1657 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 144 $\frac{1}{2}$ 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.

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

Well No. 3 (Jordan well)

Location: SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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: _____

Well Number or Location	1	2	3	4	5	6
Depth of Sample	Ice Room	Hospital	Oxford	Hickman		
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.E.L.	K.E.L.		K.E.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)	406.2	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 CaCO₃.

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: _____

Well Number or Location	Oakdale wells			
	No. 2 (1928)	No. 3 (1928)	No. 1	C.L. Gessette
Depth of Sample				
Formation Source	Jordan	Jordan	Dev. and Ill. Onesta & 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	179.3	66.8	85.8
Magnesium (Mg)	48.0	46.4	14.2	33.8
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	34.0	2.0	15.0
Sulphates (SO ₄)	502.5	680.5	2.5	201.2
Bicarbonates (HCO ₃)	305.3	292.8	300	146.5
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 CaCO₃.

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

Remarks: _____