IOWA GEOLOGICAL SURVEY W-0034

In Cooperation with U. S. Geological Survey

RECORD OF WELL



Location:

Town: DENISON (N E / S W): County CRAWFORD E.

NE¼ SW SE sec. 11 T 83 N., R. 39 W. Denison Twp.

Well name and number DENISON Town Well (1916)

Owner _____ Address _____

Tenant _____ Address _____

_____

Contractor GRAY BROS. Address Chicago

Drillers _____

Drilling dates 1916

Well data:

Elevations: Drilling curb 1266 feet; Land surface _____ feet

Vol. 33

_____

Determined by _____

Topographic position _____

Total depth: Reported 1810 feet, Measured _____ feet

_____

Drilling method _____

Hole and casing data 14 to 8 inch diameter

262' of 14" casing

261' of 10" casing from 239 to 500 feet

46½' of 8" casing from 1618½ to 1665 feet

_____

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

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

_____

Sources of water: Principal St Peter + L du Chien ; Others _____

_____

Production data: Date

Static depth to water 88 Measuring point

Pumping level 170 at 200 g.p.m.

Specific capacity g.p.m. per ft. drawdown; Temperature 66 °F.

Pump data: Type pump Column Dia. Length

Cylinder or bowls: Dia. Length Suction pipe

Power Airline

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

Use of water

WATER ANALYSES (in parts per million)

Date samples				
Sampled by				
Total solids				
Insoluble matter				
Alkalinity (Meo)				
Alkalinity (Phn)				
pH				
Fe_2O_3+ Mn_2O_3+Al_2O_3				
Alkali as sodium				
Calcium				
Magnesium				
Iron (unfiltered)				
Manganese				
Nitrate				
Fluoride				
Chloride				
Sulfate				
Bicarbonate				
Hardness (ppm)				
Hardness (gpg)				

Remarks

Laboratory data: Sample storage location

Sample range 20-2245? No. spls. 177 No. dupls. & cond. 254

Spls. prepared by Washed range by

Driller's log and cond. Yes see IGS vol. 33 p. 163

Insoluble residues: Prepared by Studied by Strip log

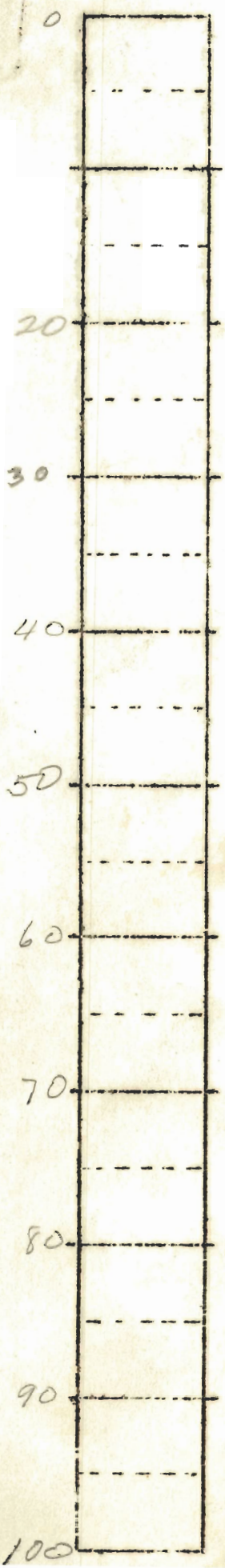
Microscopic study ✓ strip log EMR Jan. 27, 1950

Gen. log Correl. by

TD 114'- Curb- 1170' W-0034 Hamilton

Name of Well Denison Sheet No. 1

Depth Range 0-100 Scale: 1 inch=10 feet.



0 Clay, and silt, unleached, heterogeneous - clay-silt, Non-calc, Contains 5mm qtz and rock pebbles. Plastic, sticky; Black carbonaceous lumps embedded. Coarse heterogeneous sand 5%.

20 Silt and clay-gravel; dark gray to brown; coarse silt cemented by clay; sand and pebbles of qtz, green igneous rx, etc of 1-10mm size. Highly calcareous. Sand and pebbles a. to C shapes. Only a few A. shapes.

30 Silt and clay (till); dark gray, highly calc-heterogeneous silt and pebbles cemented by plastic clay. Qtz, chert, selenite, jasper, greenstone, and qtzite common as pebbles.

40 Till, silt and clay; dark gray; highly calc. unleached till, Same as 30 but contains numerous red and pink silicate rocks as pebbles.

50 Till, dark gray. Same as 30 but contains more sand and pebbles. Highly calc.

60 Till; dark gray: Same as 30. Highly calc. Green silicate rx. and ig rx. abundant.

70 Till; dark gray; Same as 30. Highly calc

80 Ss. and clay; dark gray; highly calc, clay cements fine to coarse heterogeneous sand of a to C shapes. Qtz, qtzite, pink qtz, green silicates, felsitic grains, abundant.

90 Till; dark gray; highly calc, heterogeneous sand and silt cemented by clay. Same as 30

100

W-0034 Hamilton

Name of Well Dennison Sheet No. 2

Depth Range 100-200 Scale: 1 inch=10 feet.

105 Gravel, wh. to bl. pebbles and granules; heterogeneous A to C granules + pebbles of all kinds igneous and sed rx and minerals

Till; dark gray; highly calc. clay cementing heterogeneous, sand, granules and pebbles of ig rx and minerals.

120 Till, dark gray; highly calc; Same as 120 but has only 5% sand and pebbles.

130 Till, dark gray; highly calc; Same as 120

140 Siltstone buff-gray; coarse silt dominant with about 10% fine sand; Qtz, chert and ig. rx. particles abundant. About 5% clay

150 Clay and silt; buff-gray; plastic, sticky clay, highly calc. Silt particles very fine. Rock 60+% clay.

160 Till; buff; Calc; heterogeneous gravel-clay rock. Ig. Rx pebbles abundant.

170 Till; Gray; Calc. Same as 160

Drift (180')

Bottom Drift.

180 Sand; wh; A. grains qtz; fine to med sand; Very little clay. 10% coarse qtz. silt.

Penn. (360')

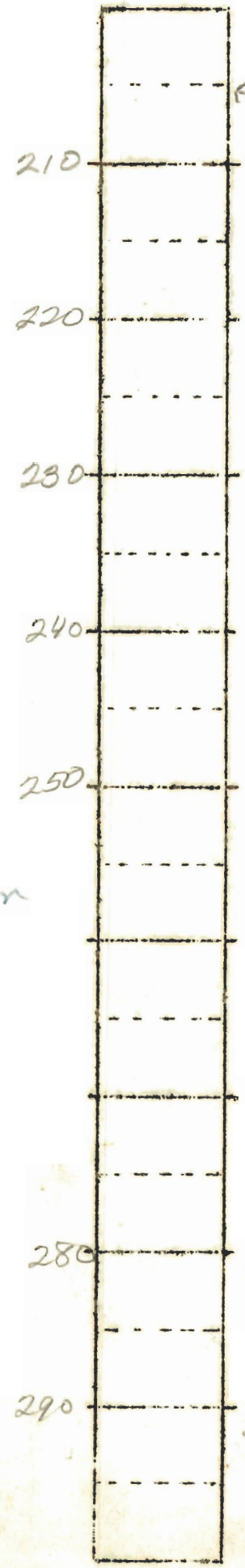
190 Sh; Black Lignitic highly carbonaceous, only slightly calc. No ig. rx. frags. 10% X/s, pure selenite gypsum; Some Satin spar in Bl. shale.

Undoubted Penna. H.G.H. 1937

W-0034 Hamilton

Name of Well Denison Sheet No. 3

Depth Range 200-300 Scale: 1 inch=10 feet.



Sh; Gray to buff; streaked with hematite sh layers; slightly calc. No igneous rx. frag. Few dk. Micac. grits

Sh; Gray, fine grained compact, calc. sh. Bl. carbonaceous seams rare.

Sh; gray, Same as 220
darker gray than 220 in part

Sh; gray, white, and red interbedded, calc lense-like lens bodies; Pyrite concretionary bodies. Many containing calcite as ramifying, anastamosing veinlets. Fissile to lense-like shales.

Sh; dark(?) gray; calc; Very little silt. Poorly but finely laminated compact shales.

Sh; light gray; silty, calc; Few pyritic concretions. Bl. carb particles included in sh. A few limonite and hematite stained clay rounded inclusions.

penn

Sh, wh. to light gray; Non-calc; ½-¼ mm. red-br. Limonite nodules abundant in Sh.

Sh, wh, gel, buff, interb'd in thin laminae, poorly developed. Hard Marcasite or pyritic concretionary bodies. Limonite and hematite stained sh, Non-calc.

Ham.

Name of Well Denison W-0034 Sheet No. 4

Depth Range 300-400 Scale: 1 inch=10 feet.

Sh; Black Carbonaceous, Somewhat calc, Contains 1-5 mm pebbles of ang. through abraded ls, Fels, hard clay frag's, all slowly dis integrated in acid. One 5 mm cluster of Silvery Arsenopyrite Xls. Check. See capsule.

310

Sh, gray; highly calc.(?) plastic. contains fragments of coal, hematite colored hard calc sh.

330

Sh; gray; Thinly laminated, calc, Sh, Coal bearing and lignitic frag's.

340

Sh; gray to bl-brown; thinly laminated, slightly calc, carbonaceous. Few 1-5 mm frag's ls, hard red calc-sh;

350

Sh; gray and wh; interlayered wh and gray, calc and non-calc.

360

Sh, gray to black; thinly laminated, 1-4 mm calc nodules.

Penn

Miss 370 +800 Ft

Ls, wh, clear pure xln fossiliferous; Some sh from above.

380

Chert and ls milk to wh, fine grained xln ls and hard flinty chert.

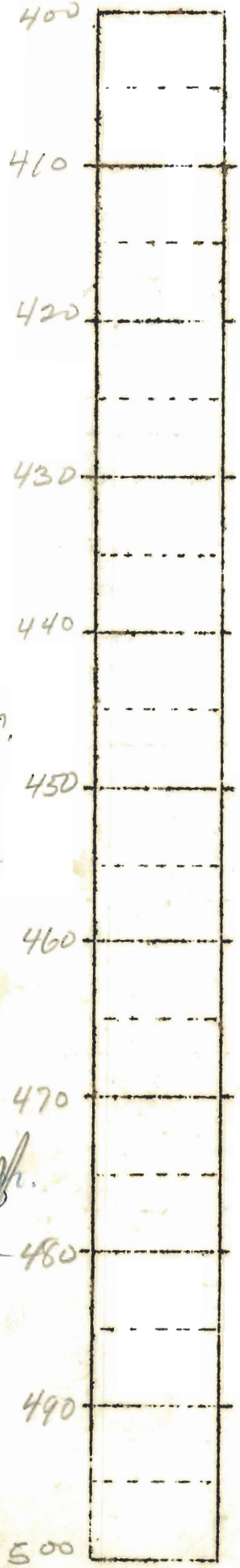
390

Ls, wh to cream, xln, sugary textured wholly soluble, except minute pyrite specks, weathered to sulfur and limonite.

W-0034 Ham.

Name of Well Denison Sheet No. 5

Depth Range 400-500 Scale: 1 inch=10 feet.



400 ls, wh. to cream, sugary textured. Same as 400

410 ls and Sh; wh to gray; interb'd; 10% milk-white chert. Highly calc shales due to thin oval to round bodies in them.

420 Sh. gray, highly calc. Compact.

430 Sh, gray to wh; Shale same as above; Ls, interb'd about 15%. 5% Hard milky chart.

440 Sh, gray to wh, Same as 430. 10% ls interb'd.

450 Sh, buff to gray-buff, highly calc, slightly silty. Chert and ls. frag's from above.

460 Sh, buff, Same as 450

470 Sh; buff to gray; Same as 450

480 ls, wh to gray; xln, fine grained, soluble; Small amount sh. interb'd.

490 ls. wh, Iron-stained; chert 10-15%; Large clusters tarnished sulfides.

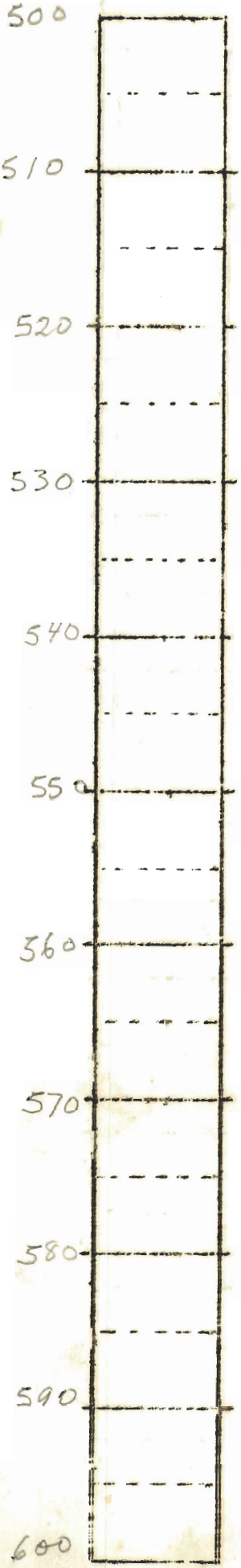
500

W-0034

Ham.

Name of Well Davison Sheet No. 6

Depth Range 500 - 600 Scale: 1 inch=10 feet.



ls, wh, xln. fine-grained. pure, soluble, slightly iron stained

ls, gray, coarsely xln. hard compact made of large (1mm-) interlocking units. 20% of rx. is finely xln cream to buff.

ls, gray, medium grained, hard, compact. Pure wholly soluble

ls, gray, coarsely xln. hard compact. Dark sulfides as (Pyrrhotite) abundant.

ls. gray coarsely xln. Same as 530

ls, gray coarsely xln, Same as 530

ls, gray to cream, finely xln, pure, soluble,

ls; wh. to cream, finely xln. compact, pure, soluble.

ls, wh. finely xln. compact, pure, soluble,

ls, wh, finely xln, compact. pure.

W-0034

Name of Well Denison Sheet No. 7

Depth Range 600-700 Scale: 1 inch=10 feet.



ls, wh. finely xln, massive; Pure, wholly soluble.

ls, wh. Same as above 610

ls, wh, finely xln; Same as 610

ls, wh, finely xln, Same as 610

ls, white to cream, finely xln, massive, compact completely soluble.

Miss

ls, cream, Same as 640

ls, wh. finely xln. compact, massive. Wholly soluble

ls, buff, coarsely xln massive, granular. Soluble Pyrite and sulfides present.

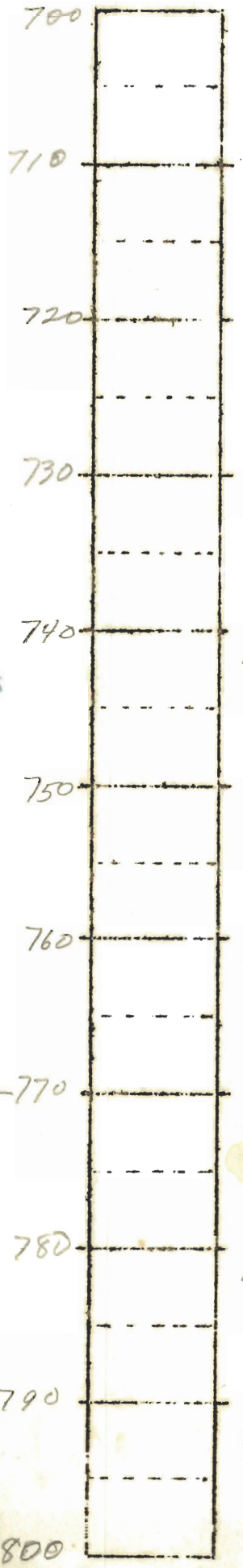
ls buff, coarsely to medium grained. pure, soluable, Sulfides rare

ls, cream to buff, fine to med. grained, granular. Pyrite and dark colored sulfides.

W-0034

Name of Well Dennison Sheet No. 8

Depth Range 700 - 800 Scale: 1 inch=10 feet.



700 ls, wh. to buff, coarsely xln, massive, compact. Pure, wholly soluble.

710 ls, wh. to buff, granular xln. massive. No sulfides nor impurities.

720 ls, buff, coarsely xln, massive, pure; Pyrite and sulfides present.

730 ls, buff and wh., coarse, granular, xln, massive, pure. Few sulfides.

740 ls, gray to buff, coarse, granular massive. Large aggregates pyrite x/s present.

Miss

750 ls, wh to buff, xln, massive med to coarse grained. Sulfides present.

760 ls, buff, xln, granular, massive; cut by thin calcite veins. Finely divided sulfides present. About 1% qtz grains in insoluble residue; of 1/8 - 1/4 mm size.

770 ls, wh. to buff, granular, wholly soluble. Little pyrite.

780 ls, wh, granular, sugary textured pure; Very few sulfide grains, or insoluble residue.

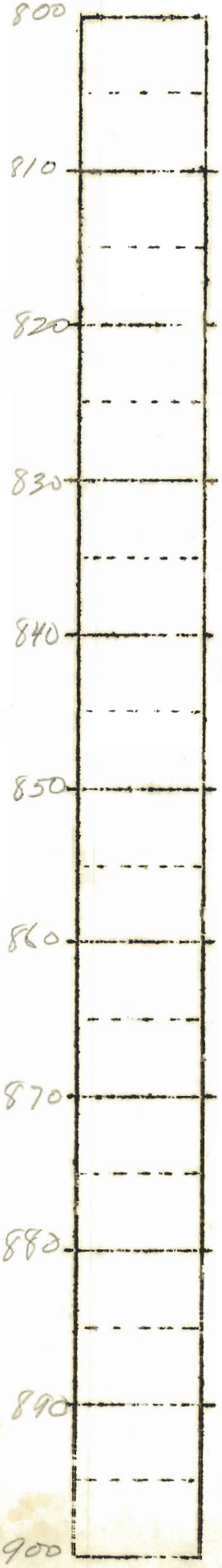
790 ls, white, granular, sugary textured, xln, wholly soluble. Dark sulfides rare. Same as 780

800

W-0034

Name of Well Denison Sheet No. 9

Depth Range 800 - 900 Scale: 1 inch=10 feet.



800 ls, white, x/n, granular, sugary textured, pure, entirely soluble; Rare sulfides.

810 ls, white, Same as 800

820 ls, white to buff, Same as 800 Pyrite and sulfides abundant.

830 ls, gray to buff, coarse, granular x/n, pure soluble, Sulfides present.

840 ls, wh, to light buff; Same as 830 otherwise.

850 ls, wh, fine to med. grained, x/n, pure; with little sulfides present.

860 ls; white, coarsely x/n, granular, massive, pure Few sulfides.

870 ls, wh to buff, granular, coarsely x/n, massive, pure. Sulfides present.

880 ls, buff to wh, pure, granular, massive; No sulfides nor insoluble residue.

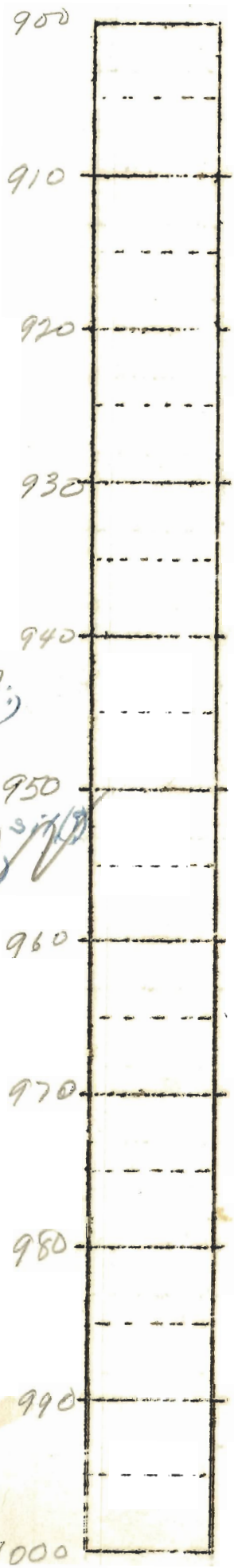
890 ls, wh to light buff; pure, granular, sugary, massive; Pyrite and other sulfides (?) present.

900

W-0034

Name of Well Denison Sheet No. 10

Depth Range 900-1000 Scale: 1 inch=10 feet.



900 ls, buff to wh; granular, massive pure. No sulfides present

910 ls. and dolo; buff, coarsely granular, pure, soluble ½% pyrite or sulfides.

920 ls and dolo, buff to wh; granular, slowly but wholly soluble. 1-3% dark sulfides. Perfect trigonal scalenohedrons of calcite 1-2mm long present in small number.

930 ls. and dolo; wh, to buff; fine, granular, compact; soluble. 3-5% dark bronze sulfides, pyrrhotite, or Chalcopyrite.

940 ls. and dolo; wh. to light buff; very finely granular; massive; rapidly soluble; 2-5% pyrite and other dark sulfides.

950 Sh; light grey, highly calcareous (3-5% soluble) earthy to chalky

960 ls, wh. and light grey; interbid with colloidal clay 5%. (10%).

970 ls, wh. and light buff; finely grained, massive, Pyrite and dark sulfides 1-3%.

980 ls, wh. and buff. Same as 970

990 ls, wh; Same 970.

1000

W-0034

Name of Well Dennison Sheet No. 11

Depth Range 1000-1100 Scale: 1 inch=10 feet.

1000 ls, wh. and gray; shaky (about 20%).

1010 ls; wh; fine-grained, massive; shale of colloidal clay 10%).

1020 ls, wh. to light. buff; granular massive. Pyrite (and) sulfides weathered to Sulfur and limonite.

1030 ls. and dolo; buff, granular, massive; 1-3% pyrite and sulfides.

1040 ls. and dolo; buff, granular, massive; 2% pyrite and sulfides.

1050 ls, and dolo; buff, granular, fine grained, sugary textured. Slowly soluble.

1060 ls. and dolo; buff, granular, sugary textured slowly soluble, 1-3% pyrite and sulfides.

1070 ls. and dolo buff, granular, massive. Minute pyrite and sulfide grains

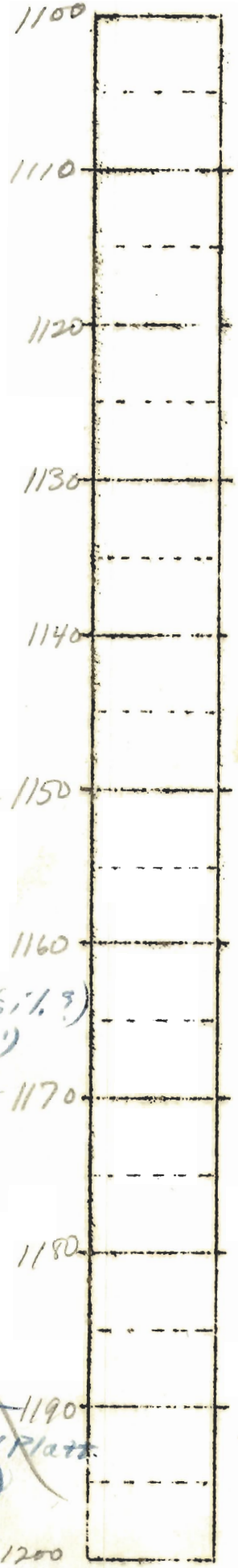
1080 dolo; deep buff, granular, massive x/n; 1% pyrite and sulfides.

1100

W-0034

Name of Well Denbison Sheet No. 12

Depth Range 1100 - 1200 Scale: 1 inch=10 feet.



1100 dolo, buff, coarsely granular, xln; Contains 1-2% brown colloidal clay.

1110 dolo, buff, coarsely granular, xln; 5% wh. ls. interbd. Minute grains sulfides.

1120 dolo, buff, coarsely granular, xln, No. sulfides. or insoluble residue.

1130 dolo and ls. buff and wh; coarsely granular, massive; Sulfides, including pyrite 2%. Few calcite cleavage fragments.

1140 dolo, buff to brown, coarsely granular, massive; Few sulfides.

1150 dolo, deep buff to brown, granular, massive. Iron sulfides weathered to sulfur and Iron oxides. 10% colloidal clay sh coats dolo particles.

1160 ls. and dolo; wh. fine grained ls (60%) interbd with 40-% buff dolo. Shale (2%) fine laminated, fissile.

Dev. ?(S; ?, ?) (220')

1170 Sh. and ls, brown to gray shale 80%, interbd with 20% ls or Shaly ls. 1% qtz sand.

Mag. (20')

1180 Sh, and ls interbd, gray to tan-gray: 70% Sh; 30% ls and dolo.

1190 Dolo; buff to brown, massive, granular, 10%- fine, fissile, apple-green shale.

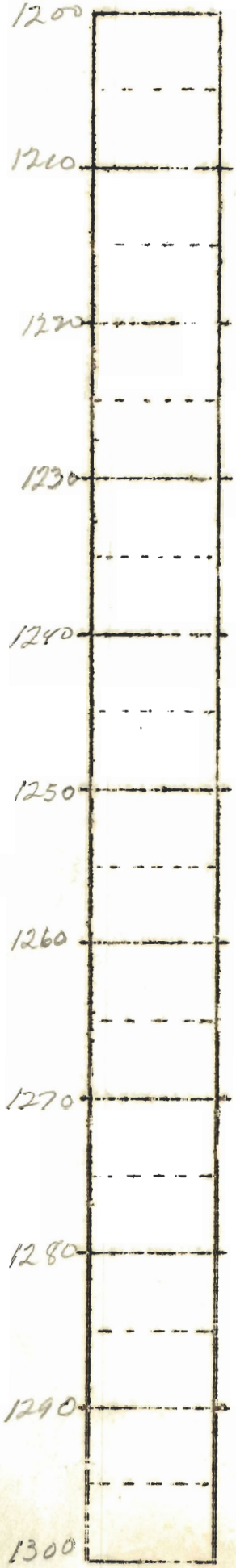
Gal. & Platt. (450')

1200

W-0034

Name of Well Denison Sheet No. 13

Depth Range 1200 - 1300 Scale: 1 inch=10 feet.



1200 dolo, deep buff; granular, massive, xln. 5% apple green fissile shale.

1210 dolo buff, granular, massive, xln. Same as 1200

1220 ls; wh; finely xln; 10% white chert. Minute pyrite and sulfides in ls.

1230 ls, white, finely xln. 10% chert, 3-5% pyrite and sulfides.

1240 ls and chert; wh. finely xln ls; milk chert 10-15%;

1250 ls. wh; fine and coarsely granular interb'd. 10% milk chert. 1-3% pyrite in authigenic x/s.

1260 ls, wh, fine-grained. Contains 5% wh. and gray colloid al gray shale which is replaced or mineralized by pyrite and sulfides.

1270 ls, gray, rough, vesicular due to lack of juncture of ls. x/s or grains. Pyrite and sulfides 1% +.

1280 ls, gray, coarsely xln; xln. units separated by angular openings. 2-4% pyrite and darkly tarnished sulfides.

1290 ls, gray to white; coarsely xln; 5-8% milk chert.

1300

W-0034

Name of Well Denison Sheet No. 14

Depth Range 1300-1400 Scale: 1 inch=10 feet.

1300 ls; gray, coarsely xln, massive, granular. 2% milk chert.

1310 ls; gray. Same as 1310.

1320 ls, gray; coarsely xln, granular, massive, 1-3% pyrite and sulfides. 3% chert

1330 ls, gray, coarsely xln massive as 1320. 1% dark sulfides.

1340 ls, wh to gray. granular, massive, pure. Rare sulfides.

1350 ls, wh. to gray; granular; 10-15% hard milky-white chert. Pyrite and sulfides 2-3%

1360 ls, wh. to gray, coarsely granular, massive; 10-15% milk-white. 2-5% pyrite and sulfides.

1370 ls, wh. to gray, coarse to med. granular massive; 15% white calc-chert. 2% pyrite and sulfides.

1380 ls, wh. to light buff; fine to med. grained, 5-8% white chert.

1390 ls, wh. to light buff; fine grained; slightly shaly.

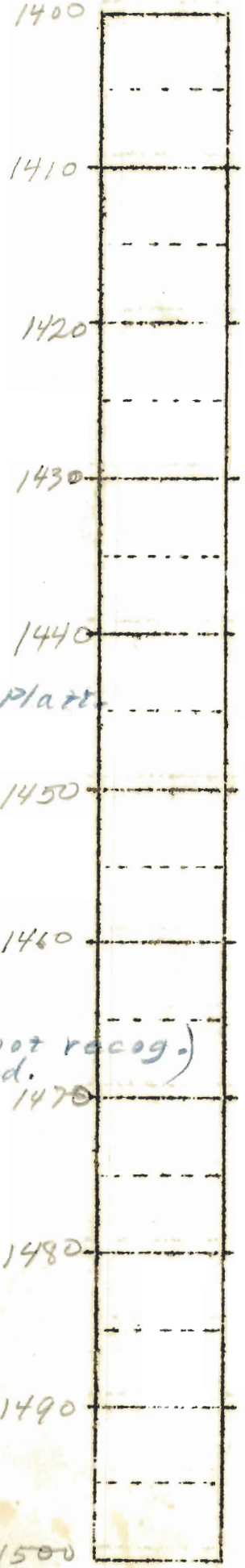
1400

W-0034

Kan.

Name of Well Denison Sheet No. 15

Depth Range 1400 - 1500 Scale: 1 inch=10 feet.



1400 ls, gray and light buff; coarsely granular; 10% milk white chert; Limonite stains due to weathered pyrite

1410 ls wh. to gray; finely granular. 5% milk-white chert.

1420 ls. and sh; gray-green sh (45%) interbed with (55%) wh. to gray ls; 5% white chert. Limonite staining prevolent. 1-3% pyrite and sulfides

1430 ls, wh, xln, fine grained compact, Limonite stains common due to weathering of Iron sulfides. Sulfides 1%.

1440 ls, wh, xln, granular, massive, 2% milk chert.

1450 ls, wh, xln, granular, massive .5% chert.

1460 ls, buff, xln, granular, massive. Purple stained ls fragments rare. Purple coloration anisotropic, same Ng-Nm and prop's of ds. Only a stain. Sulfides ½%.

1470 ls, wh. to buff, granular, massive; Pyrite and sulfides 1%.

1480 ls, wh, granular, xln; pure, soluble, 1-1mm grain of arsenopyrite Pyrite present.

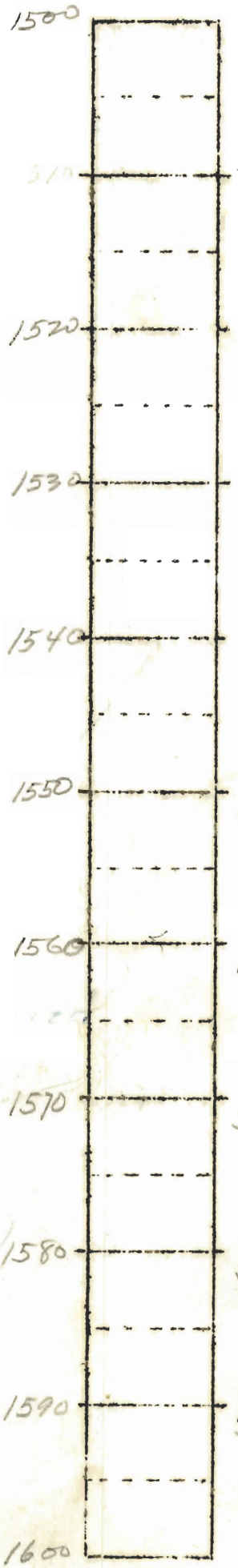
1490 ls, wh granular, massive, pure; ½% pyrite & sulfides.

1500

W-0034

Name of Well Denison Sheet No. 16

Depth Range 1500 - 1600 Scale: 1 inch=10 feet.



1500 ls, wh. to buff; granular, xln, massive; No sulfides.

1520 ls, wh to buff; granular. Few small areas of gray dolomite in buff ls.

1530 ls, wh. to buff, coarsely granular, xln, Sulfides 1%.

1540 Dolo and ls; buff; slowly soluble, coarsely xln, massive. Few calcite fragments.

1550 dolo; buff, coarsely granular, massive, Sulfides rare.

1560 dolo, buff, slowly soluble, coarsely xln. Pyrite and sulfides very abundant replacing dolo.

1570 Sh. gray; ls, wh; 80% gray sh; 20% wh. ls. Limonite concretionary masses in dolo formed from Iron sulfides.

1580 Sh, light gray; highly calc, marly. 1% insoluble qtz residue.

1590 Sh, light gray; Same as 1580

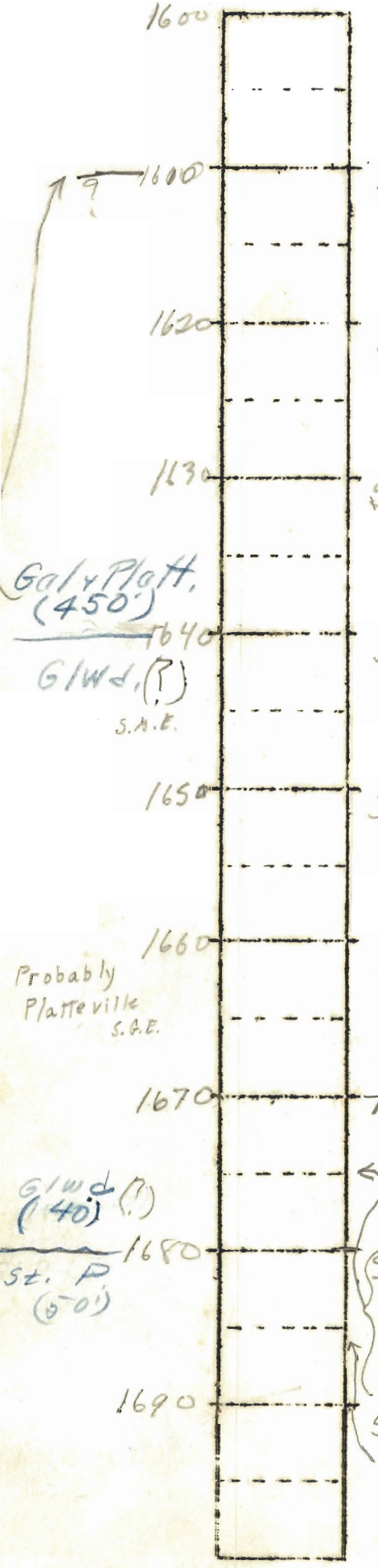
1600

W-0034

Ham.

Name of Well Denison Sheet No. 17

Depth Range 1600-1700 Scale: 1 inch=10 feet.



1600 Sh. light gray; highly calc. Same as 1580.

1610 Sh, gray and apple-green, interbd with 5% buff dolo

1620 Sh, gray-green, slightly silty, calc, compact, blocky.

1630 Sh, gray; silty, calc, plastic; contains euhedral selenite xls.

1640 Sh, Green, plastic, colloidal clay; only slightly calc. Contains very little silt.

1650 Sh, green to drab green-gray; Same as 1640

bryozoan fragments in dk brls

1660 ls and dolo wh. to buff, fine-grained ls; coarse-grained dolo, Heavily stained by Limonite

sh, dolc, gn, brittle, fm, pyr, probably Gw. Sh.

1670

St. Peter.

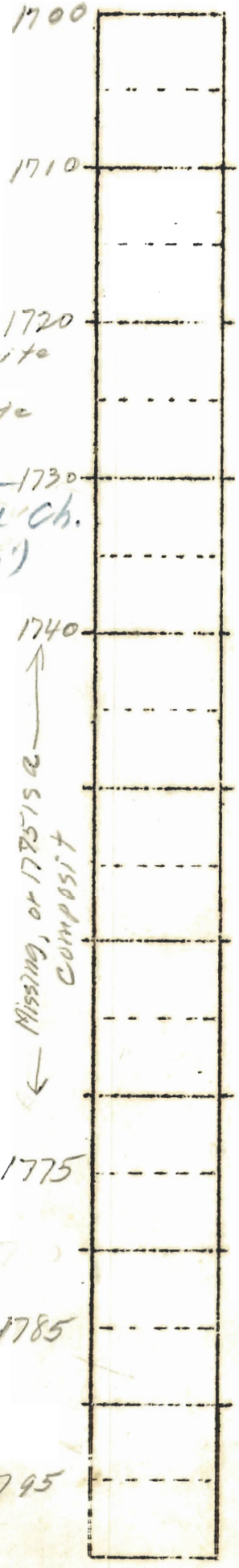
1680 Ss, wh, clear qtz; abraded qtz; a. to low c. shape. Maj grade 60% ¼-½ mm. Closer to ½ mm Some grains are secondarily enlarged slightly.

1690 Ss wh, clear qtz. Some as 1680.

W-0034

Name of Well Denison Sheet No. 18

Depth Range 1700 - 1800 Scale: 1 inch=10 feet.



1700 Ss, wh, clear qtz; Same as 1680. Maj. grade 1/4-1/2mm but more nearly 1/4mm. 1/2% pyrite present.

1710 Ss, wh, clear qtz; Same as 1680, But Maj. gr. is 1/8-1/4mm 1/2% pyrite and sulfides - Pyrite frequently cements aggregates of sand grains.

1720 Ss, wh clear qtz, iron-oxide stained. Maj. grade 1/8-1/16mm 5% 1/2-1mm frosted qtz grains. Abundant irregularly distributed sphalerite cementing sand, 2-4% sulfides, Selenite crystals up to 2mm long abundant. 5% gray compact shale.

1730 ls, wh, xln, fine grained pure, soluble. 15% sand as in 1720. 80% ls.

1740 ls. and dolo. buff, coarsely xln, massive; 20% hard milk white chert. 5% qtz sand from above or interb'd.

Missing, or 1735'ls & composit

1775 ls. and dolo, finely xln, clear pure, 2% apple-green shale interb'd.

1785 ls, and dolo; finely xln, pure, 1% qtz. sand. Slight limonite staining

1795 See next page.

W-0034

Ham.

Name of Well Denison Sheet No. 19

Depth Range 1800 - 2245 Scale: 1 inch=10 feet.

1800

1805

1810

ls, wh, to buff, fine grained, pure, many particles of ls are stained pink and brown by iron oxides, 10% abraded qtz from St Peter (?)

ss and ls, 80% ss interbid with 20% ls; Maj Grade h-h, 50%, abraded, clear qtz sand.

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W-0034

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Card Q

State: IOWA (1 2: 16) County: CRAWFORD (3 4: 24) Town: DENISON

Well No. Latitude 4200411N (5–11) Longitude 0952100 (12–18) Seq. No. 1 (19) Date M D Y 01 25 35 (20–25)

Sampling Depth 1810 (26–29) Type 1 (30) Kx10⁶ (31–35) pH 7.4 (36–38) Temp. °F (39–41)

SiO_2 (42–44) Ca 219. (45–49) Mg 94.1 (50–53) Na ± 195. (54–58) K .C (59–61)

HCO_3 271 (62–65) CO_3 0 (66–67) SO_4 1050. (68–72) Cl 30. (73–78) Source No. 3 (79) Q (80)

Card R

Duplicate Columns 1-25 from Card Q

F .17 (26–28) NO_3 0. (29–32) PO_4 0. (33–35) B (36–38) Al (39–41) Fe .15 (42–45)

Mn .00 (46–49) Cu (50–52) Pb (53–54) Zn (55–57)

Solids Determined 1890 (58–63) Calc. (64–69) Hardness Ca,Mg 935 (70–73) Non-Carb. 713 (74–77)

Color (78–79) No. R (80)

Card S

Duplicate Columns 1-25 from Card Q

Br (26–28) I (29–31) ~~Alk. as $CaCO_3$~~ 222 (32–35) Free CO_2 (36–38) SAR (39–41)

RSC (42–44) ABS (45–47) (48–50)

Alpha (pc/l) (55–57) Beta (pc/l) (58–60) Ra (pc/l) (61–63) U (ug/l) (64–66)

No. S (80)

Verified PMJ

Recorded by: D AARONSON

Punched by: Punched FCH T Date:

Published:

Punched FCH T

WRD Exp. (GW)
Aug. 1964 Verified PMJ [illegible]

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by D. AARONSON Source of data FILE Date 7/7/65 Map COUNTY HWY 1:63,360

State IOWA [16] County (or town) CRAWFORD [24]

Latitude: 42 00 41 N Longitude: 095 21 00 Sequential number: [1]

Lat-long accuracy: [2] T. 83 N, R. 39 W Sec. 11, NE¼, SW¼, SE¼, 5

Local well number: 083 39 W 11 d c a a Other number: B & M W-0034

Local use: 00034 16 CITY Owner or name: DENISON TOWN WELL

Owner or name: DENISON IOWA Address: DENISON, IOWA

Ownership: (C) County, (F) Fed Gov't, (M) City, (N) Corp or Co, (P) Private, (S) State Agency, (W) Water Dist [M]

Use of water: (A) Air cond, (C) Comm, (D) Dewatering, (F) Fire, (H) Dom, (I) Irr, (N) Ind, (P) P-S, (S) Stock, (T) Instit, (U) Unused [P]

Use of well: (A) Anode, (D) Drain, (G) Seismic, (O) Obs, (P) Oil-gas, (R) Recharge, (S) Spring, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed [W]

DATA AVAILABLE: Well data [1] Freq. W/L meas.: ORIGINAL [Ø] Field aquifer char. [ ]

Hyd. lab. data: [ ]

Qual. water data; type: COMPLETE [C]

Freq. sampling: [Ø] Pumpage inventory: yes / no, period: [ ]

Aperture cards: yes [ ]

Log data: GEOLOGIST LOG [G]

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 1810 ft 1810 Meas. rept accuracy [6]

Depth cased; (first perf.) 500 ft 500 Casing type: STEEL; Diam. 14 in [14]

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (O) open end, (P) perf., screen, sd. pt., (S) shored, (T) (W) (X) open hole, (Z) other [X]

Method Drilled: (A) air rot, (B) bored, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) trenching, (V) driven, (W) drive wash, (Z) other [ ]

Date Drilled: 1916 9 16 Pump intake setting: ft [ ]

Driller: GRAY BROS. (name), CHICAGO, ILL. (address)

Lift (type): (A) air, (B) bucket, (C) cent, (J) jet, (L) multiple, cent.) (M) multiple, turb.) (N) none, (P) piston, (R) rot., (S) submerg, (T) turb, (Z) other [ ] Deep Shallow [D]

Power (type): diesel, elec, gas, gasoline, hand, nat gas, wind; LPG H.P. [ ] Trans. or meter no. [ ]

Descrip. MP LSD ft above below lsd, Alt. MP 1266

Alt. LSD: 1266 1266 Accuracy: (source) ALTIMETER [7]

Water Level 88 ft above below MP; Ft above below lsd 88 Accuracy: DRILLER'S LOG [3]

Date meas: 1916 1 6 Yield: 200 gpm 200 Method determined [ ]

Drawdown: 82 ft 82 Accuracy: REPT 6 Pumping period hrs [ ]

QUALITY OF WATER DATA: Iron .15 ppm 2 Sulfate 1052.6 ppm 9 Chloride 30 ppm 2 Hard. 935 ppm [8]

Sp. Conduct K x 10^6 [ ] Temp. °F [ ] Date sampled JAN 1935 [135]

Taste, color, etc.

083-39w-11 dcaa

Well Number 42 00 41 (N/S) 095 21 00
d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1-19) Physiographic Province: CENTRAL LOWLAND [12] (20-21) Section: DISSECTED TILL PLAIN [E] (22) Drainage Basin: BOYER [358] (23-25) Subbasin: [ ] (26)

Topo of well site: (D) local depression, (F) flat surface, (H) hilltop, (S) hillside, (T) terrace, (V) valley flat, [ ] (27)

MAJOR AQUIFER: ORDOVICIAN system, MIDDLE series [02] (28-29) ST. PETER SANDSTONE aquifer, formation, group [MP] (30-31)

Lithology: COARSE SANDST [4V] (32-33) Origin: MARINE [6] (34) Aquifer Thickness: 55 ft

[55] (35-37) Length of well open to: 55 ft [55] (38-40) Depth to top of: 1670 ft [A67] (41-43)

MINOR AQUIFER: ORDOVICIAN system, LOWER series [01] (44-45) PRAIRIE DU CHIEN aquifer, formation, group [LP] (46-47)

Lithology: SILICEOUS DOLOMITE [QD] (48-49) Origin: MARINE [6] (50) Aquifer Thickness: [ ] ft

[ ] (51-53) Length of well open to: 15 ft [15] (54-56) Depth to top of: 1725 ft [A73] (57-59)

Intervals Screened: NONE

Depth to consolidated rock: 180 ft [1810] (60-63) Source of data: [ ] (64)

Depth to basement: [ ] ft (65-68) Source of data: [ ] (69)

Surficial material: TILL [T] (70-71) Infiltration characteristics: POOR [4] (72)

Coefficient Trans: [ ] gpd/ft (73-75) Coefficient Storage: [ ] (76-78)

Coefficient Perm: [ ] gpd/ft^2; Spec cap: [ ] gpm/ft; Number of geologic cards: [ ] (79)

CASING:

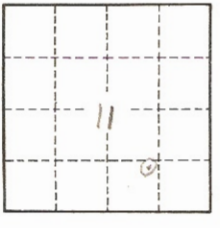
0-262' 14" CASING

239'-500' 10" CASING

500'-1618.5' OPEN HOLE

1618.5'-1665' 8" CASING

1665'-1810' OPEN



GPO 844-225