

09/04/90- WD 22927

Printed FCH
WRD Exp. (CA)
Aug. 1964
Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

COUNTY HWY

Record by D. ARONSON Source of data FILE Date 7/2/65 Map 1:63,360

State IOWA County POTHWATAMIE Sequential number 7

Latitude: 41 28 35 N Longitude: 09 51 32 W

Local well number: 07708-16B Other number: W22927

Local use: CITY Owner or name: WALNUT IOWA Address: WALNUT, IOWA

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist

Use of water: Air cond, Comm, Dewatering, Fire, Dom, Irr, Ind, Stock, Instir, Unuses

Well: Anode, Drain, Seismo, Obs, Oil-gas, Recharge, Spring, Test, Unused, Withheld, Waste, Destroyed

DATA AVAILABLE: Well data 1 Freq. W/T meas: INVENTORY Field aquifer char.

Hyd. lab. data:

Qual. water data; type: COMPLETE

Freq. sampling: INTERMITTENT Pumpage inventory: yes/no

Aperture cards:

Log data: DRILLER'S LOG

WELL-DESCRIPTION CARD

DEPTH AS ON MASTER CARD Depth well: 2511 ft. Meas. 2511

Depth cased: 2021 ft. Casing type: STEEL Diam. 12

Finish: porous gravel w. concrete, gravel w. concrete, screen, galv. pipe, horiz. gallery, open perf., screen, ad. pt., shored, pipe, other

Method: air bored, cable, dug, hyd jetted, air rot., reverse trenching, driven, drive, percussive, rotary, wash, other

Date drilled: 1919 Pump intake setting: 919 ft.

Driller: J. MILLER ARTSINN WELL CO. name address

Power: air, bucket, cane, jet, (cent.) (turb.) near, piston, rot., submerg, turb., other

Deep Shallow

Power: diesel, elec, gas, gasoline, hand, gas, wind, H.P. Trans. or meter no.

Descrip. MP: LSD ft. above below 1st, Alt. MP 1310

Alt. LSD: 1310 Accuracy: ALT. METER

Water Level: 256 ft. above below MP; # below 1st 256 Accuracy: REPORTED

Date meas: 1919 Yield: 175 gpm. Method determined

Drawdown: 70 ft. Accuracy: REPT. Pumping period

QUALITY OF WATER DATA: Iron 1.6 Sulfate 721 Chloride 200 Hard. 690

Sp. Conduct: 2350 K x 10⁶ Iron 65 Date sampled APR 1964

Taste, color, etc.

Well Number 412835 09513.26

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD
 Physiographic Province: CENTRAL IOWA 1:2 Section: DISSECTED
 Drainage Basin: E MISSOURIA 3:5:0 Subbasin:
 Topo of well site: (D) (F) (H) (S) (T) (V)
 local depression, flat surface, hilltop, hillside, terrace, valley flat,
 MAJOR AQUIFER: CAMBRIAN, UPPER C:3 JORDAN SANDSTONE 5:7
 system series aquifer, formation, group
 Lithology: MEDIUM SANDST 3:V Origin: MARINE 6 Aquifer Thickness: 35 ft
 Length of well open to: 35 ft Depth to top of: 2475 ft 8:4:8
 MINOR AQUIFER: ORDOVICIAN MIDDLE 2:2 ST. PETER SANDST. M:P
 system series aquifer, formation, group
 Lithology: MEDIUM SANDST 3:V Origin: MARINE 6 Aquifer Thickness: 50 ft
 Length of well open to: 50 ft Depth to top of: 2137 ft 5:1:7
 Intervals Screened: NONE
 Depth to consolidated rock: ft Source of data:
 Depth to basement: ft Source of data:
 Surficial material: Infiltration characteristics: POOR
 Coefficient Trans: gpd/ft Coefficient Storage:
 Coefficient Perm: gpd/ft²; Spec cap: 7.5 gpm/ft; Number of geologic cards:

CASING

0-302

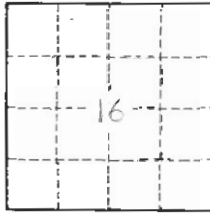
CASING

938' OF 10" CASING

159' OF 8" CASING

641'3" OF 6" CASING

489'6" OF 5" CASING (PERFORATED)



YIELD 10 GPM AT 2137' (ST. PETER)

VARNER WELL AND PUMP CO. *Established 1906*

WATER WELLS - DEEP WELL PUMPS - WELL REPAIRS - SOUNDINGS

Contractors

TELEPHONE: AREA CODE 319 583-8226
P. O. BOX 237 - 121 E. 4TH STREET
DUBUQUE, IOWA 52001

January 26, 1973

Iowa Geological Survey
16 West Jefferson St.
Iowa City, Iowa 52240

ATTN: Paul J. Horick
Chief of Groundwater Geology

Dear Mr. Horick:

Here is the information you requested in your letter of January 24, 1973.

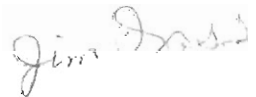
<u>Casing Record</u>	<u>Length</u>	<u>Depth</u>
16" Surface casing	300'	0-300'
10" casing	800'	0-800'
8" casing	1450'	800'-2250'

There has been no development of the well. It was pressure grouted continuously from 2250' to the surface.

Trusting that this information is what you wanted, we remain,

Yours truly,

VARNER WELL AND PUMP CO.



James Sass
Geologist

mc
Enclosure

IOWA
GEOLOGICAL SURVEY
JAN 29 1973



(DISTRIBUTORS OF PEERLESS PUMPS)

MEMORANDUM

To: Paul

Date: 2-16-76

From: Don Koch

Re: Walnut Town Well (1971)

Eureka!

Information Source:

Mr. Gordon Tooley, Water Plant Superintendent;
Water Plant phone # 712-784-3711

Well Location - Elevation

On north edge of abandoned Rock Island
right-of-way, 200 feet south of Highway 83,
half-way between Walnut and Pacific Streets.
NW, NE, NE, NW Sec. 16, T. 77 N., R. 38 W.
El. 1298'

Other Info

The old deep well still is being used
(TD 2511', drilled about 1914). Mr. Tooley
reports that water from this well is better
than water from the 1971 well, i.e. lower
hardness, and lower iron (or iron is more
effectively removed).

January 24, 1973

Mr. James Sass
Varner Well and Pump Company
P.O. Box 237
Dubuque, Iowa 52001

Dear Jim:

I am unable to find the casing schedule or pumping test data on the Walnut, Iowa town well your company drilled in 1971 to a depth of 2635 feet. We have a complete set of samples and are now running this log in total. Eventually we will send the usual computer print out of the formations penetrated. Preliminary examination indicates this may be an unusual log.

If the well was sealed with cement and developed in any way, we naturally wish to know about that.

Thanks for your good cooperation in providing these data.

Very truly yours,

Paul J. Horick
Chief of Groundwater Geology

PJH;jn

WARNER WELL & PUMP CO.
DUBUQUE, IOWA

WELL TEST DATA SHEET

Job City of Walnut

Date tested October 4, 1971

Location Walnut, Iowa

Tested by Warner Well & Pump Co.

Dia. of well 7 7/8

Pump used: Driver

Depth of well 2635'

Column and size 6 X 1 3/16

Length of airline 605

Bowls 18 Stages

Non-pumping level 313

Manufacturer Peerless

Orifice size Flowmeter 6"

Serial No. _____

TIME	PIEZOMETER READING (IN)	G. P. M.	AIR GAUGE READING (FEET)	PUMPING LEVEL	DRAWDOWN	DISCH. PRESSURE		TOTAL PUMPING HEAD	TEMP	REMARKS
						LRB.	FEET			
AM 11:15			292	313						PART OF TEST
11:20		100	265	340	27	1 1/2	4	344		Cloudy
11:25		100	265	340	27	1 1/2	4	344		Cloudy
11:30		100	265	340	27	2	5	345		Clear
11:45		100	265	340	27	2 1/2	6	346		Clear
PM 12:00		100	265	340	27	2 1/2	6	346		Clear
12:15		100	265	340	27	3	7	347	76	Clear
12:30		200	230	375	62	1	2	377	76	Raise GPM's to 200 GPM
12:45		200	230	375	62	1	1	376	76	Clear
1:00		200	230	375	62	1	1	376	76	Clear
1:15		200	230	375	62	1/2	1	376	76	Raise GPM's to 300 GPM
1:30		300	145	460	147	7	16	476	76	Clear
1:45		300	145	460	147	7	16	476	76	Clear
2:00		300	145	460	147	7	16	476	76	Clear
2:15		300	140	465	152	7	16	476	76	Clear
2:30		300	140	465	152	7	16	476	76	30 Minute Readings
3:00		300	140	465	152	7	16	476	76	Clear
3:30		300	140	465	152	7	16	476	76	Clear
4:00		300	140	465	152	7	16	476	76	Clear
4:30		300	140	465	152	7	16	476	76	Clear
5:00		300	140	465	152	7	16	476	76	Clear
5:30		300	140	465	152	7	16	476	76	Clear
6:00		300	140	465	152	7	16	476	76	Clear
6:30		300	140	465	152	7	16	476	76	Clear
7:00		300	140	465	152	7	16	476	76	Clear
7:30		300	140	465	152	7	16	476	76	Clear

VARNER WELL & PUMP CO.
DUBUQUE IOWA

WELL TEST DATA SHEET

Job City of Walnut

Date tested October 4, 1971

Location Walnut, Iowa

Done by Varner Well & Pump Co.

Dia. of well 7 7/8

Pump used Driver

Depth of well 2635'

Column and shaft 6 X 1 3/16

Length of airline 605

Bowls 18 Stages

Non-pumping level 313

Manufacturer Peerless

Orifice size Flowmeter 6"

Serial No.

TIME	WATER METER READING (IN)	W. P. M.	AIR GAUGE READING (PSI)	PUMPING LEVEL	DRAW WN	DISCH. PRESSURE LBS	FEET	TOT. PUMPING HEAD	TEMP	REMARKS
	0				0					START OF TEST
8:00		300	140	465	1 2	7	16	476	76	Clear
8:30		300	140	465	1 2	7	16	476	76	Clear
9:00		300	140	465	1 2	7	16	476	76	Clear
9:30		300	140	465	1 2	7	16	476	76	Clear
10:00		300	140	465	1 5/8	7	16	476	76	Clear
10:30		300	140	465	1 5/8	7	16	476	76	Clear
11:00		300	140	465	1 5/8	7	16	476	76	Clear
11:30		300	140	465	1 5/8	7	16	476	76	Clear
AM 12:00		300	140	465	1 5/8	7	16	476	76	Clear
12:30		300	140	465	1 5/8	7	16	476	76	Clear
1:00		300	140	465	1 5/8	7	16	476	76	Clear
1:30		300	140	465	1 5/8	7	16	476	76	Clear
2:00		300	135	470	1 5/8	9	21	491	76	Clear
2:30		300	135	470	1 5/8	9	21	491	76	Clear
3:00		300	135	470	1 5/8	9	21	491	76	Clear
3:30		300	135	470	1 5/8	9	21	491	76	Clear
4:00		300	135	470	1 5/8	12 1/2	29	499	76	Clear
4:30		300	135	470	1 5/8	12 1/2	29	499	76	Clear
5:00		300	135	470	1 5/8	12 1/2	29	499	76	Clear
5:30		300	135	470	1 5/8	14 1/2	34	504	76	Clear
6:00		300	135	470	1 5/8	14 1/2	34	504	76	Clear
6:30		300	135	470	1 5/8	9	21	499	76	Clear
7:00		300	135	470	1 5/8	9	21	499	76	Clear
7:30		300	135	470	1 5/8	9	21	499	76	Clear
8:00		300	135	470	1 5/8	9	21	499	76	Clear

VARNER WELL & PUMP CO.

DUBUQUE, IOWA

WELL TEST DATA SHEET

Job City of Walnut
 Location Walnut, Iowa

Date tested October 4, 1971
 Tested by Varner Well & Pump Co.

Dia. of well 7 7/8
 Depth of well 2635'
 Length of airline 605
 Non-pumping level 3.3
 Orifice size Flowmeter 6"

Pump used: Driver
 Column and shaft 6 X 1 3/16
 Bowls 18 Stages
 Manufacturer Peerless
 Serial No. _____

TIME	WATER LEVEL READING (IN)	G. P. M.	AIR GAUGE READING FEET	PUMPING LEVEL	DRAWDOWN	DISCH. PRESSURE		TOTAL PUMPING HEAD	FEET	REMARKS
						LBBS.	FEET			
	0									PART OF TEST
8:30		300	135	470	157	9	21	499	76	Clear
9:00		300	135	470	157	9	21	499	76	Clear
9:30		300	135	470	157	9	21	499	76	Clear
10:00		300	135	470	157	12½	29	499	76	Clear
10:15		460	5	600	287	20	47	647	76	Raise pumping capacity. 5 minute readings
10:30		410	0	595	282	20	47	642	76	
10:35		420	0	595	282	20	47	642	76	Clear
10:40		420	5	590	277	20	47	637	76	Clear
10:50		420	15	590	277	20	47	637	76	Clear
11:00		420	15	590	277	20	47	637	76	Clear
11:10		420	15	590	277	20	47	637	76	Clear
11:20		420	15	590	277	20	47	637	76	Clear
Well Recovery - 1 Minute Readings (Static)										
11:22	1 min.		160	445						
11:23	2 min.		200	405						
11:24	3 min.		230	375						
11:25	4 min.		240	360						
11:26	5 min.		260	345						
11:27	6 min.		280	325						
11:28	7 min.		290	315						
11:29	8 min.		298	307						
11:30	9 min.		298	307						
11:31	10 min.		298	307						
12:00			298	307						
12:30			298	307						
1:00			298	307						

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Aug 30, 1971

Job WILMUT 1A

Hole No. # 2

Rig No. 3200700

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
465	70	7:14			Lm & Shale			
	75							
	80							
	85							
	90							
	95							
500	500							
	05		10:01	14				
	10		10:10	19				
	15		11:30	20			Lm + Shale	
	20	11:47	12:00	13				
	25		12:18	18				
	30		12:32	14				
	35		12:50	18				
	40		1:12	22				
	5		1:30	18	CONN (C) 547		Lm + Shale	
550	1:38	1:53	15					
	55		2:08	15				
	60		2:28	20				
	65		2:47	19				
	70		3:08	21				
	75		3:30	22	CONN (C) 577		Lm + Shale	
	80	3:44	4:05	21				
	85		4:30	25				
	90		4:50	25				
	95		5:10	15				
600			6:17	37				
			6:53	38	CONN (C) 608		Lm + Shale	
	10	55	7:00	12				
	15			3				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Aug. 30, 1931

Job Walton Lake

Hole No. 12

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
30	300	8:00	8:23	23			LIME	
			8:53	30				
	30		9:07	14			Red Rock	
	35		9:23	16				
	40		9:38	15				
	45	9:55	10:10	15			CONN Shale	
	350		10:26	16				
	55		10:46	20				
	60		11:10	24				
	65		11:35	25				SER RIG & MUD LINE
	70	11:50	12:02	12				CONN @ 371' FOR # 12 D.C.
	75	12:22	12:33	11				
	80		12:53	20				
	85		1:10	17			SHALE	
	90		1:20	10				
	95		1:30	10				
	400		1:52	22				CONN @ 400' FOR # 13 D.C.
	05	2:12						
	10		2:49	19				
	15		3:10	22				
	20		3:30	20				
	25		3:50	20			SHALE.	
	30		4:05	15				CONN @ 429' FOR # 14 D.C.
	35	4:20	4:43	23				GREASE SWIVEL.
	40		5:15	32			LIME	
	45		5:50	35				
	450		6:05	15				
	55		6:18	13			SHALE	
	60		6:33	15				
	65		7:14	26				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date _____
Job _____
Hole No. _____
Rig No. _____
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
615	620	7:20	7:32	12			LM + shale	15 110
	25	7:32	7:45	13				
	30		7:58	13				
	35		8:30	32			CONN (8) 638 S.P.S.	
	40	8:47	9:07	20				
	45		9:26	19				
	650		9:40	14				
	55		10:00	20				
	60		10:20	20				
	65		10:40	20			CONN (2) 668 welding on mud line	
	70		11:00	16				
	75		11:20	16				
	680		1:55	12				
	85		1:52	17				
	90		2:05	16				
	75		2:20	14				
	70		2:35	15			CONN (6) 655 +	
	85	3:00	3:20					
	10							
	15		4:00	31				
	20							
	25		5:28					
	30							
	35	5:50		11				
	40			26				
	45			1				
	750			12				
	55			20				
	60			25				
	65	8:10	8:47	32				CONN (6) 725
								CONN (6) 760 + RINGING STAND

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

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MILWAUKEE, WIS.

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-23-71
Job 1171 N 21 1/2 W 7
Hole No. 7-2
Rig No. N 4 BREWSTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
765	770	8:47	9:27	40				
	75		10:06	39				SANDY L.M. & SH.
	80		10:35	29				
	85		11:00	25				
	90		11:30	30				CONN @ 790' GPS.
	95	11:45	12:20	35				
	800		1:05	45				
	05		1:47	42				
	10		2:30	13				
	15		3:10	40				
	20		3:50	40				CONN @ 820' GPS.
	25	4:00	4:40	40				
	30		5:05	45				
	35		6:05	40				
	40		6:35	30				
	45		6:55	20				
	850		7:50	55				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

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VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 11 1971

Job Whitcomb Tower

Hole No. 2

Rig No. Brownston

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
500	511	10:43	10:48	5			START 12 1/2 HOLE.	
	52		10:52	7				
	53		11:04	9				
	54		11:11	6				
	55		11:17	6				
	56		11:22	6				
	57		11:30	8				
	58		11:38	8				
	59		11:45	7				
	860		11:54	9				
	61		11:58	4				
	62		12:05	6				
	63		12:13	7				
	64		12:27	14				
	65		12:36	9				
	66		12:46	10				
	67		12:53	7				
	68		12:59	6				
	69		1:05	6			Lim + SHALE	
	870		1:12	7				
	71		1:20	8				
	72		1:26	6				
	73		1:31	5				
	74		1:36	5				
	75		1:41	5				
	76		1:46	5				
	77		1:52	6				
	78		1:57	5				
	79		2:03	6				
	880		2:09	6			CONN @ 880' SER RIG	

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER _____

DAILY DRILLING REPORT

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MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT 1 1971

Job WALNUT, IOWA

Hole No. # 2

Rig No. _____

Tour _____ M _____ M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
88	881	2:37	2:43	6			Sh @ Little Lime	
			2:49	6				
			2:55	6				
			3:02	7				
			3:08	6				
			3:12	4				
			3:16	4				
			3:20	4				
			3:23	3				
	8.90		3:27	4			Little Lime + SHALE	
			3:30	3				
			3:33	3				
			3:35	2				
			3:37	2				
			3:40	3				
			3:43	3				
			3:47	4				
			3:52	5				
			3:56	4				
	9.00		4:00	4				
	01		4:04	4				
	02		4:09	5				
	03		4:14	5				
	04		4:19	5				
	05		4:25	6				
	06		4:30	5				
	07		4:35	5				
	08		4:39	4				
	09		4:43	4				
	9.10		4:48	5				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 1, 1971
Job Welland, Iowa
Hole No. 52
Rig No. N. & Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
910	911	4:48	4:53	5				
	12	11	5:01	8	Shale			
	13		5:09	8				
	14		5:17	8				
	15		5:25	8				
	16		5:31	6				
	17	5:37	6					
	18	5:43	6					
	19	5:49	6					
	920	5:55	6					
	21	6:01	6					
	22	6:07	6					
	23	6:13	6					
	24	6:19	6					
	25	6:25	6					
	26	6:31	6					
	27	6:36	5					
	28	6:41	5					
	29	6:49	8					
	930	7:03	14					
	31	7:10	7					
	32	7:18	8					
	33	7:25	7					
	34	7:33	8					
	35	7:39	6					
	36	7:45	6					
	37	7:52	7					
	38	8:00	8					
	39	8:10	10					
	940	8:16	6					

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 1 71

Job Walnut Grove

Hole No. 52

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
940	941	8:16	8:24	8				
	42		8:32	8				Come @ 942'
	43	8:47	8:55	8				
	44		9:03	8				
	45		9:12	9				
	46		9:18	4				
	47		9:20	4				
	48		9:24	4				
	49		9:27	3				
	50		9:30	3				
	51		9:35	5				
	52		9:41	6				
	53		9:49	7				
	54		9:55	7				
	55		10:02	7				
	56		10:08	6				
	57		10:14	6				
	58		10:20	6				
	59		10:25	5				
	60		10:31	6				
	61		10:36	5				
	62		10:41	5				
	63		10:48	7				
	64		10:54	6				
	65		11:04	10				
	66		11:14	10				
	67		11:25	11				
	68		11:37	12				
	69		11:50	13				
	970		11:55	5				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 2 1971
Job Water Table
Hole No. 42
Rig No. 300000
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
970	71	11:55	12:00	5				
	72		12:03	3				
	73		12:06	3				
	74	12:12	12:22	10				
	75		12:30	8				
	76		12:37	7				
	77		12:47	10				
	78		12:58	11				
	79		1:05	7				
	980		1:13	8				
	81		1:22	9				
	82		1:30	8				
	83		1:37	7				
	84		1:46	9				
	85		1:55	9				
	86		2:02	7				
	87		2:10	8				
	88		2:17	7				
	89		2:25	8				
	990		2:34	7				
	91		2:40	8				
	92		2:46	6				
	93		2:54	8				
	94		3:01	7				
	95		3:08	7				
	96		3:15	7				
	97		3:24	9				
	98		3:34	6				
	99		3:38	8				
	1000		3:46	8				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 2, 1971

Job Walnut Tr.

Hole No. 110

Rig No. 800150

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1000	1007	3:46	3:51	5			LN + S/L 1/2	
	02		3:56	5				
	03		4:05	9				
	04	4:20	4:33	15			LN + Dolo	
	05		4:51	16				
	06		5:04	11				
	07		5:13	9				
	08		5:30	17				
	09		5:40	10				
	1000		5:45	5				
	11		5:50	5				
	12		5:55	5				
	13		6:00	5				
	14		6:15	15				
	15		6:33	18				
	16		6:50	18				
	17		7:00	10				
	18		7:12	12				
	19		7:25	13				
	2000		7:37	12			LN + Dolo	
	21		7:50	13				
	22		8:04	14				
	23		8:17	13				
	24		8:20	13				
	25		8:44	14				
	26		8:58	14				
	27		9:10	12				
	28		9:23	13				
	29		9:34	11				
	1000		9:54	20				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER-ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date July 1, 1910
Job Miller & Miller
Hole No. 53
Rig No. Brookfield
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
10.50	1	9:54	07	13		2.00	CLAY	
	2		1:18	13				
	3		10:29	11				
	4	10:37	10:54	17				
	5		11:18	24				
	6							
	7							
	8			6				
	9		1:40	21				
	10		1:58	18				
	11		1:20	22				
	12							
	13							
	14		2:12	18				
	15		2:28	16				
	16		2:45	17				
	17		2:56	11				
	18		3:09	13				
	19		3:23	14			LIME & CHERT.	
	20		3:35	12				
	21		3:45	10				
	22		3:55	10				
	23		4:00	5				
	24		4:05	5				
	25		4:11	6				
	26		4:21	10				
	27		4:30	9				
	28		4:40	10				
	29		5:01	11				
	30		5:00	9				

DAILY DRILLING REPORT

J. P. MILLER-ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT 2 1971

Job Walnut Iowa

Hole No. #2

Rig No. N 4 Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1060	61	5:00	5:06	6				
	62		5:13	7				
	63		5:20	7				
	64		5:30	10				SERVICE RIG G.P.S. & AIR PUMP
	65	5:30	5:38	8				
	66		6:04	6				
	67		6:12	8				
	68		6:20	8				
	69		6:31	11				
1070			6:45	14				
	71		7:00	15				
	72		7:14	14				
	73		7:30	16				
	74		7:45	15				
	75		7:55	10				
	76		8:02	7				
	77		8:13	11				
	78		8:25	12				
	79		8:41	16				
1080			9:02	21				
	81		9:13	11				
	82		9:18	5				
	83		9:24	6				
	84		9:30	6				
	85		9:41	11				
	86		9:50	9				LM. & CHEST
	87		10:01	11				
	88		10:16	15				
	89		10:27	11				
1090			10:40	13				

ADDITIONAL REMARKS, ETC.

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT 2, 1971

Job WALNUT IOWA

Hole No. #2

Rig No. BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1090	91	10:40	10:54	14				
	92		11:07	11				
	93		11:20	13				
	94		11:31	11				
	95		11:43	12				
	96		11:56	13				
	97	12:07	12:20	13				
	98		12:32	12				
	99		12:50	18				
	1100		1:03	13				
	01		1:16	13				
	02		1:30	14				
	03		1:44	14				
	04		2:01	17				
	05		2:15	14				
	06		2:28	13				
	07		2:44	16				
	08		2:54	10				
	09		3:15	21				
	1110		3:33	18				
	11		3:47	14				
	12		4:07	20				
	13		4:27	20				
	14		4:47	20				
	15		5:08	21				
	16		5:26	18				
	17		5:44	21				
	18		5:58	14				
	19		6:09	11				
	1120		6:22	13				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 9, 1921

Job W. Hartman?

Hole No. 52

Rig No. Conquest

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1120	1121	6:13	6:30	17			cherty dol & ls	
	22		6:46	16				
	23		6:59	13				
	24		7:10	11				
	25		7:17	7				
	26		7:25	8			CONM @ 1126	
	27	7:35	7:42	7				
	28		7:52	7				
	29		8:00	10				
	1130		8:08	8			cherty Dol & Lm	
	31		8:25	17				
	32		8:40	15				
	33		8:55	10				
	34		9:00	10				
1	35		9:10	10				
	36		9:19	8				
	37		9:30	12				
	38		9:47	17				
	39		10:10	23				
	1140		10:30	20				
	41		10:43	13				
	42		11:03	20				
	43		11:20	17				
	44		11:52	22				
	45		11:57	15			Lm & Chert & Dol.	
	46		12:13	16				
	47		12:31	18				
	48		12:56	25				
	49		1:07	11				
	1150		1:20	13				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date _____

Job _____

Hole No. _____

Rig No. _____

Tour _____

M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
		2:20	1:37	17				
			9:20					
			3:00	15				
			3:18	18				CONN SEP RIG - C.P.S.
		3:45	3:58	13				+ Repair RIG LINE
			4:22	24				
			4:38	16				
			5:00	22				
			5:18	18				
			5:44	26				
			6:10	26				
			6:29	19				
			6:44	15				
			7:00	16				
			7:25	25				
			7:55	30				circ. - come out of hole - SET
	2:52		3:03	11				SHAKE PIT.
			3:10	7				Sept. 7, 1971
			3:17	7				
			3:33	16				
			3:55	22				
			4:08	13				
			4:13	5				
			4:17	4				
			4:23	6				
			4:29	6				
			4:34	5				
			4:41	7				
			4:47	6				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 7 1971
Job Walnut
Hole No. #2
Rig No. Brunner
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
11:80	81	4:47	5:00	13				Data heavy
	82		5:14	14				
	83		5:24	10				
	84		5:38	14				
	85		5:50	12				
	86		6:00	10				
	87	6:10	6:22	12				counter 1186' C.P.S.
	88		6:37	15				
	89		6:50	13				
11:90			7:00	10				Data heavy
	91		7:16	16				
	92		7:32	16				
	93		7:40	8				
	94		7:52	12				
	95		8:02	10				
	96		8:12	10				
	97		8:21	9				
	98		8:42	21				
	99		8:51	9				
12:00			9:08	17				
	01		9:26	18				
	02		9:32	6				
	03		9:42	10				
	04		9:52	10				
	05		10:04	13				
	06		10:20	16				
	07		10:38	18				Data - Pherty
	08		10:47	9				
	09		10:57	10				
12:10			11:00	13				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT.
Job WALNUT, IOWA
Hole No. #2
Rig No. N-4 BREWSTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1210	1211	11:10	11:20	10				12 # hole
	12		11:30	10				
	13		11:40	10				
	14		11:50	10				
	15		12:00	10				
	16		12:15	15	Conn @ 12:16		-See Log	
	17	12:35	12:43	8				
	18		12:50	7				
	19		12:57	7				
	1220		1:02	5				
	21		1:12	10				
	22		1:19	7				
	23		1:25	6				
	24		1:35	10				
	25		1:45	10				
	26		1:54	9				
	27		2:03	9				
	28		2:12	9				
	29		2:21	9				
	1230		2:30	9				
	31		2:39	9				
	32		2:48	9				
	33		2:56	8				
	34		3:05	9				
	35		3:14	9				
	36		3:24	10				
	37		3:37	13				
	38		3:55	18				
	39		4:10	15				
	1240		4:27	17				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT. 7, 1921
Job WALNUT, IOWA
Hole No. # 2
Rig No. 114 BREWSTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1240	1241	4:27	4:37	10			12 1/2" hole	
	42		4:45	8				
	43		4:53	8			SHALE	
	44		5:03	10				
	45		5:12	9				
	46		5:21	9				
	47		5:30	9			CONN @ 1247'	
	48	5:40	5:47	7				
	49		5:54	7			SHALE	
	1250		6:00	6			SHALE	
	51		6:05	5				
	52		6:10	5				
	53		6:15	5				
	54		6:20	5				
	55		6:25	5			* BASE - MAPLE MILL	
	56		6:34	9			TOP LIME CREEK	
	57		6:44	10				
	58		6:54	10				
	59		7:04	10				
	1260		7:20	16				
	61		7:35	15				
	62		7:50	15				
	63		8:05	15				
	64		8:20	15				
	65		8:35	15			Lime.	
	66		8:51	16				
	67		9:07	16				
	68		9:23	16				
	69		9:33	10				
	1270		9:43	10				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-7-71
Job Walnut, Iowa
Hole No. 42
Rig No. 121000
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1270	1271	9:13	9:54	11		Line		
	72		10:01	7				
	73		10:09	8				
	74		10:16	7		Conn @ 1274		
	75	10:26	10:36	10				
	76		10:46	10		Conn @ 1276		
	77		11:00					
	78		11:04	8				
	79		11:12	8				
	1280		11:20	8				
	81		11:27	6				
	82		11:33	7				
	83		11:40					
	84							
	85							
	86							
	87							
	88							
	89							
12	90		12:00	10				
	91		12:10	10				
	92		12:22	12				
	93		12:35	13				
	94		12:48	13				
	95		12:55	17				
	96		2:10	15				
	97		2:23	13				
	98		2:33	10				
	9		2:45	12				
	1300		3:00	15				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-8-71

Job Wellcut

Hole No. #2

Rig No. BRW 511

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1300	01	3:00	3:10	10				
	02		3:21	11				
	03		3:29	8				
	04		3:38	9				
	05		3:45	7				
	06		3:53	8				
	07	4:03	4:10	7		CONJ. (2)	304' 6" 100'	
	08		4:19	9				
	09		4:28	9				
	10		4:38	10				
	11		4:45	7				
	12		4:55	10				
	13		5:06	11				
	14		5:15	9				
	15		5:22	7				
	16		5:29	7				
	17		5:36	7				
	18		5:44	8				
	19		5:53	9				
	20		6:08	15				
	21		6:23	15				
	22		6:38	15				
	23		6:53	15				
	24		7:03	10				
	25		7:13	10				
	26		7:23	10				
	27		7:34	11				
	28		7:43	9				
	29		7:53	10				
	30		8:02	9				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 18, 1991
Job Walnut Tower
Hole No. #2
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1330	31	8:02	8:10	8				
	32		8:17	7				
	33		8:25	8				
	34		8:30	5				
	35		8:36	6				
	36		8:40	4				
	37		8:45	5				
	38	9:02	9:14	12				CONN. @ 1337
	39		9:25	11				
1340			9:35	10				Dat. + chert
	41		9:50	15				
	42		10:08	18				
	43		10:25	17				
	44		10:37	12				
	45		10:48	10				
	46		11:03	21				Change watch + Tool.
	47		11:30	21				
	48		11:53	23				
	49		12:18	25				Chert + Dolo
1350			12:40	22				
	51		1:02	22				
	52		1:20	19				
	53		1:32	12				
	54		1:43	11				
	55		1:54	11				
	56		2:07	13				
	57		2:20	13				
	58		2:31	11				
	59		2:43	12				
1560			3:55	12				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date SEPT. 8, 1971

Job WALNUT, Iowa

Hole No. #2

Rig No. N-9 Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
<u>1360</u>	<u>1361</u>	<u>2:55</u>	<u>3:05</u>	<u>10</u>				
	<u>62</u>		<u>3:20</u>	<u>15</u>				
	<u>63</u>		<u>3:32</u>	<u>12</u>				
	<u>64</u>		<u>3:44</u>	<u>12</u>				
	<u>65</u>		<u>4:00</u>	<u>16</u>				
	<u>66</u>		<u>4:15</u>	<u>15</u>				
	<u>67</u>		<u>4:25</u>	<u>10</u>				
	<u>68</u>	<u>4:43</u>	<u>4:53</u>	<u>10</u>				
	<u>69</u>		<u>5:03</u>	<u>10</u>				
	<u>1370</u>		<u>5:15</u>	<u>12</u>				
	<u>71</u>		<u>5:27</u>	<u>12</u>				
	<u>72</u>		<u>5:40</u>	<u>13</u>				
	<u>73</u>		<u>5:54</u>	<u>14</u>				
	<u>74</u>		<u>6:06</u>	<u>12</u>				
	<u>75</u>		<u>6:18</u>	<u>12</u>				
	<u>76</u>		<u>6:28</u>	<u>10</u>				
	<u>77</u>		<u>6:38</u>	<u>10</u>				
	<u>78</u>		<u>6:51</u>	<u>13</u>				
	<u>79</u>		<u>7:05</u>	<u>14</u>				
	<u>1380</u>		<u>7:20</u>	<u>15</u>				
	<u>81</u>		<u>7:29</u>	<u>9</u>				
	<u>82</u>		<u>7:39</u>	<u>10</u>				
	<u>83</u>		<u>7:51</u>	<u>12</u>				
	<u>84</u>		<u>8:07</u>	<u>16</u>				
	<u>85</u>		<u>8:25</u>	<u>18</u>				
	<u>86</u>		<u>8:43</u>	<u>18</u>				
	<u>87</u>		<u>9:05</u>	<u>22</u>				
	<u>88</u>		<u>9:21</u>	<u>16</u>				
	<u>89</u>		<u>9:38</u>	<u>17</u>				
	<u>1390</u>		<u>9:58</u>	<u>20</u>				

1367'
CONN - SER RIG & GAIRD ON
GEN. BELLS.

Doko + CHEST.

Doko + CHEST.

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-8-71
Job WALNUT, IOWA
Hole No. #2
Rig No. N-4 BREWSTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1390	1391	9:58	10:10	12				
	92		10:30	20				
	93		10:50	20				
	94		11:15	25				
	95		11:27	12				
	96		11:40	13				
	97		11:54	14				
	98	12:09	12:20	11				
	99		12:29	9				
	1400		12:47	18				
	01		1:00	13				
	02		1:11	11				
	03		1:22	11				
	04		1:32	10				
	05		1:45	13				
	06		1:57	15				
	07		2:10	20				
	08		2:45	25				
	09		3:10	25				
	1910		3:33	23				
	11		3:56	23				
	12		4:23	27				
	13		4:48	25				
	14		5:03	15				
	15		5:15	12				
	16		5:28	10				
	17		5:38	10				
	18		5:45	7				
	19		5:54	9				
	1920		6:05	11				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-9-71
Job Walnut Tower
Hole No. 42
Rig No. 107 Brunner
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1420	1421	6:05	6:14	9			Dol.	
	22		6:23	9				
	23		6:30	7				
	24		6:37	7				
	25		6:44	9				
	26		6:58	9				
	27		7:04	6				
	28		7:10	6				
	29	7:20	7:27	7			COIN @ 1128	
	1430		7:34	7			Dolo 43	
	31		7:40	6				
	32		7:47	7				
	33		7:55	8				
	34		8:04	9				
	35		8:16	12				
	36		8:28	7				
	37		8:29	6				
	38		8:35	6				
	39		8:43	8				
	1440		8:50	7			Dolo sample	
	41		9:06	6				
	42		9:07	11				
	43		9:10	3				
	44		9:15	5				
	45		9:20	5				
	46		9:27	7				
	47		9:35	8				
	48		9:40	5				
	49		9:45	5				
	1450		10:53	8				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-9-71

Job W21447

Hole No. 57

Rig No. Lincoln

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
14150	51	9:53	9:58	5				
	52		10:03	5				
	53		10:08	5				
	54		10:16	8				
	55		10:22	6				
	56		10:28	6				
	57		10:33	5				
	58	10:44	10:55	11				CONCRETE @ 14157
	59		11:03	8				
14160			11:20	17				BEHN. NO WEIGHT
	61		11:55	35				
	62		12:20	25				
	63		12:50	30				
	64		1:12	22				SEPER RIG & TAN NUT LOOSE ON
	65	1:38	1:58	20				Piston Rod on Flywheel
	66		2:17	19				Side of Pump
	67		2:39	22				1st chert.
	68		3:00	21				
	69		3:23	22				
14170			3:44	21				
	71		4:05	21				
	72		4:28	23				
	73		4:57	19				NEW LINE on Freque Conn.
	74	5:25	5:40	15				
	75		5:55	15				
	76		6:13	18				
	77		6:29	16				
	78		6:46	17				
	79		7:03	17				
14180			7:20	17				

ADDITIONAL REMARKS, ETC.

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-9-71
Job Wicket, Iowa
Hole No. #2
Rig No. N-9 Brunner
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1480	1481	7:20	7:32	14			<i>Sand</i>	
	82		7:50	16				
	83		8:05	15				
	84		8:25	20				
	85		8:43	18				
	86		9:03	20				
	87	12:21	12:35	14				Trip for new bit + 4 cones @ 1486
	88		12:50	15				
	89		1:05	15				
	90		1:20	15				
	91		1:36	16				
	92		1:50	14				
	93		2:05	15				
	94		2:20	15			<i>Sand</i>	
	95		2:35	15				
	96		2:50	17				
	97		3:08	18				
	98		3:22	14				
	99		3:36	14				
	1500		3:50	14				
	01		4:06	16				
	02		4:20	18				
	03		4:40	16				
	04		4:56	16				
	05		5:15	19				
	06		5:30	15				
	07		5:47	17				
	08		6:07	20			<i>Sand</i>	
	09		6:29	17				
	1510		7:44	20				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-10-71
Job Walnut Tower
Hole No. #2
Rig No. 3 Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1510	1511	6:44	7:01	17				
	12		7:17	16				
	13		7:33	18				
	14		7:50	15				
	15		8:05	15				
	16		8:21	16				
	17		8:37	8				
	18		8:35	6				
	19		8:40	5				
	1520	8:55	9:05	10				CONTACT @ 15' 19'
	21		9:15	10				
	22		9:27	12				
	23		9:32	12				
	24		9:58	16				
	25		10:12	14				
	26		10:27	15				
	27		10:42	15				
	28		10:55	13				
	29		11:08	13				
	1530		11:27	17				
	31		11:40	13				
	32		11:50	10				
	33		12:10	15				
	34		12:27	17				
	35		12:47	13				
	36		12:51	14				
	37		1:08	17				
	38		1:22	14				
	39		1:33	11				
	1540		1:45	12				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-10-71

Job W. ALLEN, IOWA

Hole No. #2

Rig No. #4 Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1570	1581	1:45	1:57	12				
	42		2:03	12				
	43		2:21	12				
	44		2:35	14			LM & chert	
	45		2:49	14				
	46		3:00	11			SEE RIG; SET SHAKE PIT & W. WATER	
	47	3:45	4:00	15				
	48		4:15	15				
	49		4:27	12			CONN & CPS	
1550	1550	4:45	5:00	17				
	51		5:15	13			P.H. - 8.5	MIX 100# CAUSTIC SODA
	52		5:31	16				
	53		5:46	15				
	54		6:05	19				
	55		6:30	25				
	56		6:48	17				
	57		7:02	18				
	58		7:22	20			P.H. 7.5	
	59		7:40	18				
1510	1510		7:56	16				
	61		8:13	17				
	62		8:31	17				
	63		8:45	15				
	64		8:50	11				
	65		9:07	11				
	66	2:30	9:47	17				
	67		9:00	13				
	68		9:30	30				
	69		9:55	25				
1520	1520		9:48	17				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-13-71

Job Well # 4

Hole No. 25


Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
70	71	4:08	4:23	15			LAN & Chart	
	72		4:33	10				
	73		4:48	15				
	74		5:10	12				
	75		5:13	13				
	76		5:26	15				
	77		5:40	12				
	78		5:50	10				COND 7575' CPS, full pump
	79	6:40	6:59	14				
1580			7:19	10				LAN & Chart
	81		7:30	12				
	82		7:42	12				
	83		7:43	11				
	84		7:57	14				
	85		8:06	9				
	86		8:17	11				
	87		8:35	18				
	88		8:55	20				
	89		9:15	20				
1590			9:36	11				
	91		9:50	10				
	92		10:00	8				
	93		10:00	16				
	94		10:15	25				
	95		10:20	25				
	96		11:08	14				
	97		11:14	10				
	98		11:25	11				
	99		11:33	14				
1600			12:01	22				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

 DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date _____

Job _____

Hole No. _____

Rig No. _____

Tour _____ M _____ M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1	11	12:15	12:26	11				
				14				
			1:11	14				
	15		1:22	15		Doko		
	16		5	23				
	17		1:53	14				
	18		2:15	16				
	19		2:40	25	100			
	20		15					
	21							
	22	3:41		13				
			4:10	10				
			4:23	13				
			4:35	12		Doko. (1)	TRC Ch. 2T	
			4:59	19				
	25		5:10	10				
			5:40	50				
			6:00	28				L F
				21		Doko (2)		
			7:05	26		Mix 50 Gals. 100°		
		8:24	7:26	28		100°		
			1:30	27				T 11

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 7-1-71

Job J.P.

Hole No. II

Rig No. _____

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
	25	11:17		11				
			7:11	9				
	28			6				
	31		11:25	7				
			7:45			75*		
	34			4	1	1		*
				1				
				4				
			4:15	15				*
			5	15				
			10:1	1			1211	
		11:9	1:9	16				
			41	7				
			1:07	15				
			1:11	11				
				1				
				11				
				1				
	1							
			12:48	10				
			2:58	10				
			1:27	7				
				1				
	1		1:1					
	27							
	25			19				
				16				
				10				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 11-11-11

Job WALNUT

Hole No. 02

Rig No. BY 11-51

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1740	01	2:38	3:00	12				
	02			15				
	03							
	04		3:37	19				
	05							
	06							
	07			3				
	08							
	09							
1770	71							
	92		7:35					
	73	7:35						
	94							
	95							
	96							
	97							
	98							
	99							
1800	01		7:52	25				
	02			10				
	4			11				
	5							
	06							
	7							
	8							
	9							
1810			11:19	19				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-11-71

Job WALNUT GROVE

Hole No. E 2

Rig No. BRINTON

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1814	1817	11:19	11:38	19				
	1816		11:51	13			LM + CLINT.	
	1813							
	1819							
	1815							
	1816							
	1817							
	1818							
	1813							
	1820		1:38	13				
	1821		1:48					
	1822		2:01				CONN @ 1822' PER RIG + C.I.S	
	1823	2:22						
	1824		3:00	17				
	1825		3:22	22				
	1826		3:40	18				
	1827							
	1828							
	1829							
	1830		4:47	13			- WELD MUD-LINE.	
	1831	5:00	5:18	18				
	1832							
	1833							
	1834							
	1835							
	1836							
	1837							
	1838							
	1839							
	1840							

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 7

Job 1 77

Hole No.

Rig No.

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1270	11	7:35	8:15	20				
	12		8:35	20				
	13		8:55					
	47							
	43							
			9:31	0				
	17		9:48	7				
	18		10:30	22			LM	
	19		11:05	35				
1	50		11:45	40				
	21		12:25	41				
	52		12:00					
	57		1:30	30			CONN @ 1853	
	24	1:45	1:43	18				
	53		2:27	24				
	20		3:25	58				
	7		4:30	65			Trip for bit Tooth bit	
	18	10:07	10:24	17				
	22		10:36	12				
1800			10:53	13				
	11		11:12	19				
	62		11:21	9				
	63		11:30	9				
	14		11:41	11				
	65		11:53	12				
	16		12:00	7				
	17		12:10	10				
	1		12:17	7				
	1		12:24	7				
	21		12:30	6				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-17-71

Job WALNUT IOWA

Hole No. #2

Rig No. X4 BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1870	71	12:30	12:36	6				
	72		12:42	6			Lm & Shale	
	73		12:48	6				
	74		12:55	7				
	75		1:02	7				
	76		1:10	8				
	77		1:18	8				
	78		1:26	8				
	79		1:32	6				
	1880		1:38	6				
	81		1:42	4				
	82		1:50	8				
	83		1:58	8				
	84		2:05	7			CONN @ 1884' C.P.S. & SER. RIG MIX TO GEL. & # CAUSTIC SODA.	
	85	4:17	4:25	8				
	86		4:35	10				
	87		4:46	11				
	88		4:57	11				
	89		5:09	12				
	1890		5:21	12				
	91		5:33	12				
	92		5:44	11				
	93		5:55	11				
	94		6:03	8				
	95		6:13	10				
	96		6:23	10				
	97		6:32	9				
	98		6:42	10				
	99		6:53	11				
	1900		7:03	10				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-17-71
Job Walnut, Down
Hole No. #2
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1900	1901	7:03	7:13	10				
	02		7:20	7				
	03		7:30	10				
	04		7:40	10				
	05		7:50	10				
	06		8:03	13				
	07	2:31	2:41	10				Circ. hole & pull up in surf Pipe Sept. 20, 1971 15' of fill up
	08		2:56	15				
	09		3:08	12				
	1910		3:23	15				
	11		3:48	1				
	12		3:58	1				
	13		4:00	12			CONV	
	14	4:20	4:30	10				
	15		4:40	10				
	16		4:50	10				
	17		5:03	13				
	18		5:15	12				
	19		5:30	15				
	1920		5:38	8				
	21		5:46	8				
	22		6:00	14				
	23		6:10	10				
	24		6:21	11				
	25		6:31	10				
	26		6:41	10				
	27		6:52	11				
	28		7:04	12				
	29		7:11	7				
	1930		7:18	7				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 20, 1951

Job Walnut Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1930	1931	7:18	7:29	10			Dolo	
	32		7:40	12				
	33		7:52	12				
	34		8:01	9				
	35		8:11	10				
	36		8:19	8				
	37		8:26	7				
	38		8:36	10				
	39		8:45	9				
	1940		8:51	6			Dolo	
	41		8:57	6				
	42		9:02	5				
	43		9:10	8				
	44		9:17	7				CONN @ 1944'
	45	9:27	9:37	10				
	46		9:49	12				
	47		10:05	16				
	48		10:15	10				
	49		10:25	10				
	1950		10:34	9				
	51		10:45	11			Dolomite	
	52		10:54	9				
	53		11:05	11				
	54		11:14	9				
	55		11:23	9				
	56		11:29	6				
	57		11:36	7				
	58		11:44	8				
	59		11:51	7				
	1960		12:03	12				

ADDITIONAL REMARKS, ETC.

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-20-71

Job WALNUT, IOWA

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1960	1961	12:03	12:10	7			Dolomite	
	62		12:19	9				
	63		12:25	6				
	64		12:34	9				
	65		12:41	7				
	66		12:50	9				
	67		1:00	10				
	68		1:10	10				
	69		1:18	8				
	1970		1:25	7				
	71		1:33	7				
	72		1:43	10				
	73		1:55	12				
	74		2:06	11				
	75	2:56	3:02	6			CONN - SER RIG & JET SH. P.T. & W.O. WATER	
	76		3:09	7				
	77		3:16	7				
	78		3:23	7				
	79		3:29	6				
	1980		3:37	8				
	81		3:48	11				
	82		4:01	13				
	83		4:15	14				
	84		4:29	14				
	85		4:42	13				
	86		4:55	13				
	87		5:10	15				
	88		5:22	12				
	89		5:35	13				
	1990		5:50	15				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-20-71

Job Walnut Grove

Hole No. # 2

Rig No. N 4 BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1990	91	5:50	6:05	15				
	92		6:20	15				
	93		6:41	21			Yery BKN	
	94		7:01	20				
	95		7:17	16				
	96		7:35	18				
	97		7:45	10				
	98		7:50	5				
	99		7:55	5			Dolo.	
	2000		7:58	3				
	01		8:01	2				
	02		8:04					
	03		8:09					
	04		8:25	16			CANN @ 2004'	
	05	8:40	8:50	10				
	06		9:03	13				
	07		9:16	13				
	08		9:30	14				
	09		9:45	15				
	2010		9:58	13			Dolo. cherty	
	11		10:11	13				
	12		10:25	14				
	13		10:40	15				
	14		10:51	11				
	15		11:02	11				
	16		11:17	15				
	17		11:32	15				
	18		11:45	13				
	19		11:57	12				
	2020		12:08	11				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-21-71

Job Walnut

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2020	21	12:08	12:16	8				
	22		12:26	10				
	23		12:41	15				
	24		12:56	15				
	25	1:12	1:12	16				
	26		1:27	15				
	27		1:37	10				
	28		1:48	11				
	29		1:59	11				
	2030		2:04	05				
	31		2:10	6				
	32		2:17	7				
	33		2:23	6				
	34		2:32	9				
	35		2:47	15				
	36	3:00	3:10	10				
	37		3:23	13				
	38		3:32	9				
	39		3:48	16				
	2040		4:02	14				
	41		4:16	14				
	42		4:41	25				
	43		5:01	20				
	44		5:34	33				
	45		5:52	28				
	46		6:17	25				
	47		6:33	16				
	48		6:49	15				
	49		7:05	17				
	2050		7:25	20				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 21, 1921

Job Walnut Twp

Hole No. #7

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2050	2051	7:25	7:38	13				
	53		7:58	20				
	53		8:10	12				
	54		8:21	11				
	55		8:30	9				
	56		8:42	12				
	57		8:54	12				
	58		9:07	13				
	59		9:20	13				
	2060		9:33	13				
	61		9:43	1				
	62		9:54	1				
	63		10:08	14				
	64		10:18	10				
	65		10:30	12				
	66	10:41	10:50	9				DOWN @ 2065'
	67		11:01	11				
	68		11:13	12				
	69		11:25	12				
	2070		11:39	14				
	71		11:50	11				
	72		11:58	8				LM. & SHALE
	73		12:06	8				
	74		12:15	9				
	75		12:23	8				
	76		12:35	12				
	77		12:45	10				
	78		12:55	10				
	79		1:04	9				
	2080		1:12	8				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-21-71

Job Palmet Iowa

Hole No. #2

Rig No. NH Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2080	2081	1:12	1:25	13			Dolom Lm.	
	82		1:33	8				
	83		1:41	8				
	84		1:48	7				
	85		2:00	12				
	86		2:11	11				
	87		2:22	11				
	88		2:31	9				
	89		2:40	9				
	2090		2:48	8				
	91		2:58	8				
	92		3:08					
	93		3:17	11				
	94		3:28	9				
	95		3:38	10				
	96	4:10	4:17	7				
	97		4:28	11				
	98		4:37	9				
	99		4:45	8				
	2100		4:54	9				
	01		5:05	11				
	02		5:14	9				
	03		5:21	7				
	04		5:32	11				
	05		5:44	12				
	06		5:55	11				
	07		6:06	11				
	08		6:18	12				
	09		6:28	10				
	2110		6:38	10				

W.O. Pump.
CONN. @ 2095 C.P.S. 4 Check Rig

Datomite

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-21-71

Job Walnut, Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2110	2111	6:38	6:47	9			}	
	12	6:47	6:56	9				
	13		7:08	12				
	14		7:20	12				
	15		7:34	14				
	16		7:47	13				
	17		7:55	8				
	18		8:03	8				
	19		8:11	8				
	2120		8:19	8				
	21		8:30	1				
	22		8:38					
	23		8:45	7				
	24		8:55	10				
	25		9:04	9				
	26	9:15	9:25	10				
	27		9:33	8				
	28		9:42	9				
	29		9:50	8				
	2130		9:59	9				
	31		10:11	12				
	32		10:23	12				
	33		10:35	12				
	34		10:48	13				
	35		11:03	15				
	36		11:16	13				
	37		11:26	10				
	38		11:40	14				
	39		11:52	12				
	2140		12:02	10				

Dolomite

CONN @ 2125'

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-22-71
Job Walnut
Hole No. #2
Rig No. Brownstar
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2140	41	12:02	12:15	13				
	42		12:28	13				
	43		12:40	12				
	44		12:52	12				
	45		1:01	9				
	46		1:10	9				
	47		1:20	10				
	48		1:33	13				
	49		1:43	10				
	2150		1:54	11				
	51		2:03	9				
	52		2:13	10				
	53		2:26	13				
	54		2:38	12				
	55		2:48	10				
	56	3:15	3:24	9				CONN(2) 2155 CPS Air pump
	57		3:33	9				
	58		3:42	9				
	59		3:50	8				
	2160		4:01	11				
	61		4:12	11				
	62		4:29	18				
	63		4:42	13				
	64		4:55	13				
	65		5:07	12				
	66		5:20	13				
	67		5:30	10				
	68		5:37	9				
	69		5:48	9				
	2170		5:57	9				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 22, 1971

Job Walnut Island

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2170	2171	5:57	6:06	9				
	72		6:15	9				
	73		6:25	10				
	74		6:34	9				
	75		6:41	7				
	76		6:49	8				
	79		6:58	9				
	79		7:07	9				
	79		7:16	9				
	2180		7:26	10				
	81		7:33	-				
	82		7:40	7				
	83		7:48	8				
	84		7:57	9				
	85		8:03	6				
	86		8:12	9				
	87	8:23	8:36	13				
	88		8:52	16				
	89		9:08	16				
	2190		9:25	17				
	91		9:38	13				
	92		9:57	19				
	93		10:12	15				
	94		10:28	16				
	95		10:49	21				
	96							
	97							
	98							
	99							
	2200							

DOWN

PH 9.5 vis 32 wt 8.9

ADDITIONAL REMARKS, ETC.

2186
70
2256

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-22-71
Job Walnut Iowa
Hole No. #2
Rig No. N4 Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2200	01	11:50	12:02	12				
	02		12:12	10				
	03		12:22	10				
	04		12:30	8				
	05		12:40	10				
	06		12:47	7				
	07		12:55	8				
	08		1:03	8				
	09		1:11	8				
22	10		1:18	7				
	11		1:27	9				
	12		1:35	8				
	13		1:43	8				
	14		1:50	7				
	15		1:57	7				
	16		2:06	9				
	17		2:17	11				
	18	2:30	2:39	9		CONN. @ 2217	ser. rig	
	19		2:48	9				
22	20		2:58	10				
	21		3:08	10				
	22		3:18	10				
	23		3:30	12				
	24		3:50	20				
	25		4:09	19		Very BKN.		
	26		4:23	14				
	27		4:36	13				
	28		5:00	24				
	29		5:29	29				
22	30		5:43	14			CHERTY	Dolomite

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-22-71

Job WALNUT IOWA

Hole No. 42

Rig No. #4 Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2230	31	5:43	6:00	17				
	32		6:25	25			CHERTY Dolomite	
	33		6:43	18				
	34		6:58	15				
	35		7:15	17				
	36		7:40	25				
	37		8:10	30				
	38		8:35	25			30% Chert + Dolomite	
	39		8:55	20				
2240			9:22	27				
	41		9:50	28				
	42		10:20	30				
	43		10:40	20				
	44		11:07	27				
	45		11:35	28				
	46		11:55	20			50' Costic Gel	
	47		12:10	15			CONN @ 2247' Mix 30 sacks	
	48	12:53	1:06	13				
	49		1:26	20				
2250			1:46	20				
	51		2:05	19				
	52		2:21	16				
	53		2:34	13				
	54		2:51	17				
	55		3:11	20				
	56		3:27	16				
	57		3:45	18				
	58							
	59		4:20	18				
2260			4:46	26				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 27 71
Job Walnut, Iowa
Hole No. #2
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2260	2261	8:35	8:45	10				
	62	8:45	8:54	9				
	63		9:02	8				
	64		9:17	15				
	65		9:33	16				
	66		9:48	15				
	67		10:00	12				
	68		10:15	15				
	69		10:30	15				
	2270	10:47	10:53	6				CONN @ 2269
	71		10:58	5				
	72		11:04	6				
	73		11:08	4				
	74		11:17	9				
	75		11:26	9				
	76		11:33	7				
	77		11:44	11				
	78		11:48	4				
	79		11:53	5				
	2280		11:57	4				
	81		12:06	9				
	82		12:16	10				
	83		12:22	6				
	84		12:30	8				
	85		12:40	10				
	86		12:48	8				
	87	12:57	1:04	7				put gasket on suction valve
	88		1:12	8				
	89		1:18	6				
	2290		1:30	12				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71

Job Walnut

Hole No. 2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
290	91	1:30	1:37	7				
	92		1:43	6				
	93		1:51	8			Sandy Hole	
	94		1:58	7				
	95		2:06	8				
	96		2:12	6				
	97		2:17	5				
	98		2:23	6				
	99		2:31	8				
	2300		2:36	5				
	01		2:41	5			CONN (2) 2301'	
	02	2:53	2:57	4				
	03		3:01	4				
	04		3:06	5				
	05		3:10	4			Sandy Hole	
	06		3:15	5				
	07		3:19	4				
	08		3:23	4				
	09		3:27	4				
	2310		3:31	4				
	11		3:37	6				
	12		3:43	6				
	13		3:49	6				
	14		3:57	8				
	15		4:05	8				
	16		4:13	8			Sandy Hole	
	17		4:20	7				
	18		4:26	6				
	19		4:35	9				
	2320		4:44	9				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

MILLER WELL AND PUMP CO.
161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71
Job William Jones
Hole No. 42
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2320	2321	4:44	4:51	6				
	22		4:57	6				
	23		5:05	8				
	24		5:15	10				
	25		5:23	8				
	26		5:31	8				
	27		5:39	8				
	28		5:48	9				
	29		5:57	9				
2330			6:05	8				
	31		6:14	9				
	32		6:23	9			CANN (2)	2332'
	33	6:30	6:35	5				
	34		6:39	4				
	35		6:44	5				
	36		6:48	4				
	37		6:51	3				
	38		6:55	4				
	39		6:58	3				
2340			7:02	4				
	41		7:05	3				
	42		7:09	4				
	43		7:15	6				
	44		7:22	7				
	45		7:28	6				
	46		7:35	7				
	47		7:45	10				
	48		7:54	9				
	49		8:00	6				
2350			8:10	10				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

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MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71

Job Walnut

Hole No. 2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2350	51	8:10	8:16	6				
	52		8:23	7				
	53		8:31	8				
	54		8:40	9				
	55		8:47	7				
	56		8:54	7				
	57		9:02	6				
	58		9:11	9				
	59		9:17	8				
2360			9:23	6				
	61		9:31	8				
	62		9:40	9				
	63	9:50	9:55	5				
	64		10:00	5				
	65		10:07	7				
	66		10:12	5				
	67		10:17	5				
	68		10:21	4				
	69		10:27	6				
2370			10:32	5				
	71		10:39	7				
	72		10:45	6				
	73		10:52	7				
	74		11:00	8				
	75		11:09	9				
	76		11:15	6				
	77		11:23	8				
	78		11:29	6				
	79		11:35	6				
2380			11:43	8				

CONV(2) 2362

DoLo. + lime

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

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VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71

Job Walnut, Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2380	2381	11:43	11:53	10				See Rig & old Mud line.
	82	12:28	12:35	7				
	83		12:42	7				
	84		12:49	7				
	85		12:55	6				
	86		1:04	9				
	87		1:17	13				
	88		1:29	12				
	89		1:39	10				
	2390		1:48	9				Dolo - SANDY
	91		1:57	9				
	92		2:06	9				VALVE CAP BASKET ON PUMP
	93	2:45	2:52	7				CONN.
	94		3:05	13				
	95		3:11	6				
	96		3:20	9				
	97		3:27	7				
	98		3:35	8				
	99		3:41	6				
	2400		3:51	10				
	01		4:05	14				
	02		4:15	10				
	03		4:25	10				
	04		4:35	10				
	05		4:50	15				
	06		5:03	13				
	07		5:18	10				
	08		5:21	8				
	09		5:3	4				
	2410		5:29	4				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

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BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71

Job Walnut, Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
<u>24</u>	<u>10</u>	<u>5:29</u>	<u>5:35</u>	<u>6</u>				
	<u>12</u>		<u>5:39</u>	<u>4</u>		<u>Shale Green.</u>		
	<u>13</u>		<u>5:44</u>	<u>5</u>				
	<u>14</u>		<u>5:48</u>	<u>4</u>				
	<u>15</u>		<u>5:51</u>	<u>3</u>				
	<u>16</u>		<u>6:03</u>	<u>12</u>				
	<u>17</u>		<u>6:13</u>	<u>10</u>				
	<u>18</u>		<u>6:25</u>	<u>12</u>				
	<u>19</u>		<u>6:39</u>	<u>14</u>				
<u>24</u>	<u>20</u>		<u>6:50</u>	<u>11</u>				
	<u>21</u>		<u>7:01</u>	<u>11</u>				
	<u>22</u>		<u>7:13</u>	<u>12</u>				
	<u>23</u>		<u>7:22</u>	<u>9</u>				
	<u>24</u>	<u>7:43</u>	<u>7:53</u>	<u>10</u>			<u>CONN @ 2423</u>	
	<u>24</u>						<u>Work on STAND PIPE VALVE.</u>	
<u>24</u>	<u>25</u>		<u>8:05</u>	<u>12</u>				
	<u>26</u>		<u>8:18</u>	<u>13</u>				
	<u>27</u>		<u>8:25</u>	<u>7</u>				
	<u>28</u>		<u>8:32</u>	<u>7</u>				
	<u>29</u>		<u>8:36</u>	<u>4</u>				
<u>24</u>	<u>30</u>		<u>8:40</u>	<u>4</u>				
	<u>31</u>		<u>8:44</u>	<u>4</u>				
	<u>32</u>		<u>8:48</u>	<u>4</u>				
	<u>33</u>		<u>8:53</u>	<u>5</u>				
	<u>34</u>		<u>8:59</u>	<u>6</u>				
	<u>35</u>		<u>9:07</u>	<u>8</u>				
	<u>36</u>		<u>9:17</u>	<u>10</u>				
	<u>37</u>		<u>9:25</u>	<u>8</u>				
	<u>38</u>		<u>9:36</u>	<u>11</u>				
	<u>39</u>		<u>9:46</u>	<u>10</u>				
<u>24</u>	<u>40</u>		<u>9:57</u>	<u>11</u>				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

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161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-28-71

Job WFA 1000

Hole No. # 2

Rig No. 1380 W

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2440	41	9:57	11:05	68				
	42	2:18	2:26	8			Trip for bit	
	43		2:34	8				
	44		2:44	10			Shale	
	45		2:54	10				
	46		3:02	6				
	47		3:10	8				
	48		3:17	7				
	49		3:23	6				
	2450		3:31	8				
	51		3:38	7				
	52		3:48	10				
	53		3:58	10				
	54		4:08	10				
	55	4:19	4:22	3			CONN 2454	
	56		4:25	3			sandy shale	
	57		4:29	4				
	58		4:33	4				
	59		4:40	7				
	2460		4:46	6				
	61		4:53	7				
	62		4:56	3				
	63		4:59	3				
	64		5:04	5				
	65		5:12	8				
	66		5:17	5				
	67		5:20	3			sand	
	68		5:23	3				
	69		5:26	3				
	2470		5:29	3				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

J. P. MILLER ARTESIAN WELL CO.
BOX 359 BROOKFIELD, ILL.

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161 W. WISCONSIN AVE.
MILWAUKEE, WIS.

VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept. 29, 1951

Job Walnut Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2470	2471	5:29	5:32	3				
	72		5:35	3			Sand	
	73		5:38	3				
	74		5:42	4				
	75		5:45	3				
	76		5:49	4				
	77		5:52	3				
	78		5:55	3				
	79		5:58	3				
	2480		6:02	4			Sand	
	81		6:05	3				
	82		6:09	4				
	83		6:14	5			CONN. @ 2483'	
	84	5:23	6:25	2				
	85		6:26	1				
	86		6:28	2				
	87		6:32	4				
	88		6:33	1			Sand	
	89		6:35	2				
	2490		6:37	2				
	91		6:40	3				
	92		6:43	3				
	93		6:48	5				
	94		6:55	7				
	95		6:58	3				
	96		7:07	9				
	97		7:13	6			Sandy Shale	
	98		7:19	6				
	99		7:24	5				
	2500		7:30	6				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

DAILY DRILLING REPORT

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BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-29-71

Job Walnut Iowa

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
2500	2501	7:30	7:38	8			sandy shale	
	02		7:42	4				
	03		7:48	6				
	04		7:52	4				
	05		7:56	4			sandy shale	
	06		7:59	3				
	07		8:02	3				
	08		8:05	3				
	09		8:08	3				
	2510		8:11	3				
	11		8:14	3				
	12		8:17	3				
	13		8:20	3				
	14		8:23	3			CONAL	
	15	8:30	8:34	4				
	16		8:38	4				
	17		8:44	6				
	18		8:55	11				
	19		8:59	4				
	20		9:04	7				
	21		9:12	6				
	22		9:19	7				
	23		9:29	10				
	24		9:35	6				
	25		9:41	6				
	26		9:47	6				
	27		9:58	10				
	28		10:03	5				
	29		10:06	3				
	2530		10:10	4				

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER

DAILY DRILLING REPORT

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BOX 237 DUBUQUE, IOWA

HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 9-29-71

Job Walnut

Hole No. #2

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
530	31	10:10	10:17	7				
	32		10:21	4				
	33		10:25	4				
	34		10:33	8				
	35		10:42	9				
	36		10:51	9				
	37		10:59	8				
	38		11:10	11				
	39							
	2540							
	41							
	42							
	43							
	44							
	45							
	46							
	47							
	48							
	49							
	2550							
	51							
	52							
	53							
	54							
	55							
	56							
	57							
	58							
	59							
	2560							

Contract TD = 2640

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____

DRILLER _____

7 1/2' Walnut Quad

412832N-0951325-01 IOWA GEOLOGICAL SURVEY

77-38W-16 BAAB In Cooperation with U. S. Geological Survey

1980 field located by D. Runkle

Old Well
not W-22927 W#0

RECORD OF WELL

Location:

Town: Walnut (N E) (S W); County Pottawattamie

sec. 16 T. 77 N., R. 38 W. Clayton Twp.

Well name and number Walnut Town Well

Owner Town of Walnut Address _____

Tenant _____ Address _____

Contractor J. P. Miller Artesian Wells Address _____

Drillers _____

Drilling dates Completed in 1919

Well data:

Elevations: Drilling curb 1295 ^{Elev. of station} feet; Land surface _____ feet

Determined by _____

Topographic position _____

Total depth: Reported 2510 feet; Measured _____ feet

Drilling method _____

Hole and casing data well cased throughout, inner casing, 5" perforated
(Give amount, size, kind, and depth of all casing; type and
302' of 18" casing; 938' of 10" casing; 159' of 8" casing; 641' of 6" pipe
position of seals and packers; cementing; how finished—perforated pipe, screen,
489' of 5" pipe
gravel pack, open hole, etc.)

Original depth to water 265 ft. above _____ Date _____

Original elevation of water level 1030 ft.; Source of data _____

Sources of water: Principal 2475-2510 ; Others _____

Production data: _____ Date _____
 Static depth to water 265 ^{STAN} Measuring point _____
 Pumping level 335 at 125 g.p.m. at depth of 2137
335 175 at depth of 2510

Specific capacity _____ g.p.m. per ft. drawdown; Temperature _____ °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 sampled	_____	_____	_____	_____
Sampled by	_____	_____	_____	_____
Total solids	_____	_____	_____	_____
Insoluble matter	_____	_____	_____	_____
Alkalinity (Meo)	_____	_____	_____	_____
Alkalinity (Phn)	_____	_____	_____	_____
pH	_____	_____	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	_____	_____	_____	_____
Alkali as sodium	<u>211.4</u>	_____	_____	_____
Calcium	<u>152.2</u>	_____	_____	_____
Magnesium	<u>68.1</u>	_____	_____	_____
Iron (unfiltered)	_____	_____	_____	_____
Manganese	_____	_____	_____	_____
Nitrate	_____	_____	_____	_____
Fluoride	_____	_____	_____	_____
Chloride	<u>207</u>	_____	_____	_____
Sulfate	<u>577.2</u>	_____	_____	_____
Bicarbonate	<u>209.8</u>	_____	_____	_____
Hardness (ppm)	_____	_____	_____	_____
Hardness (gog)	_____	_____	_____	_____

Remarks _____

Laboratory data: _____ Sample storage location _____
 Sample range _____ No. spls. _____ No. dupls. & cond. _____
 Spls. prepared by _____ Washed range _____ by _____
 Driller's log and cond. _____
 Insoluble residues: Prepared by _____ Studied by _____ Strip log _____
 Microscopic study _____ strip log _____
 Gen. log _____ Correl. by _____

WATER LEVEL DATA

Measuring point _____

Date	Depth to water	Altitude	Remarks

REMARKS

Encountered water Hizon D.W.
300' - fine sand?

(dulling
interval)

1804-2050 265

2050-2137 255

1259 PM with D.D of 80'

2400
Main supply 2475-2510 Jordan? 265

1759 PM with D.D of 70'

STATE HYGIENIC LABORATORY, DES MOINES BRANCH

W-22927

The University of Iowa
405 STATE OFFICE & LAB BLDG, E 7th & COURT
DES MOINES, IOWA 50309

LAB NO. 4546

MINERAL ANALYSIS

MINERAL NO. 9865

REPORTED 7 May 1973

TOWN Walnut COUNTY Pottawattamie
OWNER OF SUPPLY
COLLECTOR'S NAME G. Tooley
DATE COLLECTED 26 January 1973 Date Received: 30 January 1973
REPORT TO Department of Environmental Quality
Lucas Bldg.
Des Moines, Iowa

FIELD DATA

SOURCE #2 WELL DATA
SAMPLING POINT Pump House NAME OR NUMBER #2
CONSTRUCTION DATE DEPTH 2635
PUMPED 6 HRS AT 230 GPM
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED? Yes
TEMPERATURE ° C F 76 ALKALINITY (mg/l CaCO₃)P T pH
IS A POLYPHOSPHATE BEING USED? HTH DATE OF PREVIOUS SAMPLE 1971

Prairie du Ch.

LABORATORY ANALYSIS

(MILLIGRAMS PER LITER)

SPECIFIC CONDUCTANCE AT 25° C 2300 micromhos SILICA (SiO₂) 9.4
TOTAL RESIDUE 1620 TOTAL IRON (Fe) 1.2
FILTRABLE RESIDUE 1620 SOLUBLE IRON (Fe) 1.2
ALKALINITY AS CaCO₃ P None T 174 pH 7.3 DATE 30 January 1973
HARDNESS AS CaCO₃ 720 mg/l 42.0 gpg

POSITIVE IONS

POTASSIUM (K⁺) 43
SODIUM (Na⁺) 210
CALCIUM (Ca⁺⁺) 190
MAGNESIUM (Mg⁺⁺) 66
MANGANESE (Mn⁺⁺) 0.02

NEGATIVE IONS

NITRATE (NO₃⁻) 0.4
FLUORIDE (F⁻) 2.6
CHLORIDE (Cl⁻) 240
SULFATE (SO₄⁻²) 740
BICARBONATE (HCO₃⁻) 212
CARBONATE (CO₃⁻²) None

TRACE METALS

ARSENIC < 0.01
BARIUM < 0.1
CADMIUM < 0.01
CHROMIUM < 0.01
COPPER < 0.01
LEAD < 0.01
ZINC 0.74
Mercury < 1 µg/l
Silver < 0.01

ANALYST

Ryan, LAF

R. L. MORRIS, Ph.D.
ASSOCIATE DIRECTOR AND
PRINCIPAL CHEMIST

GW Pottawattomie Co.
Gen. Data

September 12, 1963

Mr. Tom C. Thorpe
Thorpe Well Company
Box 1376
Des Moines 13, Iowa

Dear Mr. Thorpe:

In response to your inquiry to obtain specific geologic and ground-water information relative to drilling a deep well for the town of Walnut, Iowa, we have reviewed the available material in our files. The pertinent data are summarized in the accompanying report. A record of water analyses is included, and a copy of Northern Natural Gas Company well near Oakland, Iowa (NW cor. Sec. 11, T. 75N., R. 39W) is being mailed under separate cover.

We hope this report will serve as a guide in developing a new deep well at Walnut. If you have any questions remaining, please let us know.

Very truly yours,

H. G. Hershey

HGH/dtk
m
Enclosure

**GROUND-WATER CONDITIONS
AT A LOCALITY IN WALNUT, IOWA**

The following statements represent an interpretation of the available information in the files of the investigations of the Iowa and U. S. Geological Surveys.

It is assumed that the new well will be drilled close to the location of Walnut city well # 1 (NE $\frac{1}{4}$ NW $\frac{1}{4}$, sec. 16, T. 77N., R. 38W). Samples of rock units penetrated in this well are lacking and correlations can only be inferred from the drillers log with no small degree of reservation. Supporting geological data at depth in the surrounding region is scarce so that the generalized log given below is only a rough estimate. Local structure and possible changes in thicknesses of some formations may alter the proposed depth ranges. All depths are referred to a starting surface elevation of 1310 feet above sea level:

<u>Formation</u>	<u>Thickness(ft.)</u>	<u>Depth Range(ft.)</u>
Quaternary System		
Pleistocene Series (loess in upper part, glacial till below)	270 ₊	0-270 ₊
Cretaceous System?		
Dakota Group (shale and sandstone)	20	270 ₊ -290
Pennsylvanian System		
Missouri Series (interbedded limestone and shale)	150	290-440
Des Moines Series (limestone and shale in upper part; mostly shale in lower part, but includes some sandstone, minor limestone and coal)	410	440-850
Mississippian System		
Ste. Genevieve-St. Louis Formations (shale, sandy limestone, and cherty limestone)	55	850-905
Spengen-Warsaw Formations (dolomite, sandy dolomite and limestone, chert, and some shale)	35	905-940
Keokuk-Burlington Formations (cherty dolomite and limestone, some shale)	135	940-1075
Gilmore City Formation (limestone and dolomite)	40	1075-1115
Hampton Formation (cherty dolomite, limestone, and minor shale)	85	1115-1200
Prospect Hill Formation (siltstone and silty shale)	5	1200-1205
Maple Mill Formation (shale)	45	1205-1250

<u>Formation</u>	<u>Thickness(ft.)</u>	<u>Depth Range(ft.)</u>
Devonian System		
Lime Creek Formation (shale, dolomite, and limestone)	65	1250-1315
Cedar Valley Formation (dolomite, some chert and minor shale)	290	1315-1605
Wapsipinicon Formation (dolomite, minor shale and chert)	80	1605-1685
Silurian System		
Undifferentiated cherty dolomite	50	1685-1735
Ordovician System		
Maquoketa Formation (cherty dolomite, and shale)	170	1735-1905
Galena Formation (dolomite and some chert)	145	1905-2050
Decorah-Platteville Formations (dolomite, limestone, and shale)	85	2050-2135
St. Peter Formation (sandstone)	50	2135-2185
Prairie du Chien Formation (dolomite, sandy dolomite, sandstone, and chert)	290	2185-2475
Cambrian System		
Jordan Formation (sandstone)	35	2475-2510
St. Lawrence Formation (dolomite)		2510-

We have no recent data on pumping level, drawdown, and production from the old well (1919). The Iowa Geological Survey Volume XXXIII, 1928 published report gives the following information: "The sandstone from 2475 to 2510 was the chief water bed and it is the driller's opinion that water also came in crevices in the limestone below 2400 feet. On completion, the static level was 265 feet below the curb, and with the pumping cylinder set at 335 feet the well delivered through an 8 inch pipe 175 gallons per minute. At present under air the well delivers without drawdown 400 gallons per minute."

IOWA GEOLOGICAL SURVEY
 TABULATION OF WATER ANALYSIS
 (Dissolved constituents in parts per million)

Town - Well No. Owner	Date of coll.	Depth (ft.)	Geol. source	°F	Diss. solids	Fe	Mn	Ca	Mg	K	Na	CO ₃	HCO ₃	SO ₄	Cl	F	NO ₃	Hardness cal. as CaCO ₃			pH	Micro- film @ 25°C	Cond.
																		tot.	carb	non carb			
Walnut City Well #1 (1919)	1/27 1927	2510	Sp. Fevee P. Chien Jordan	-	1336			152	68	211		210	577	207	-	-	-	658	172	486	7	-	-
Walnut City Well #1 (1919)	8/27/25	2510	"	-	1692	2.2	0.0	197	62	281		215	715	210	3.0	0.0	0.0	622	176	446	7.8	-	-
Walnut City Well #1 (1919)	9/23/55	2510	"	-	1635	0.9	0	155	69	36	220	0	188	723	213	3.2	3.1	671	154	917	7.8	2270	2130
Walnut City Well #1 (1919)	3/21/57	2510	"	70	1630	2.1	.09	152	63	39	246	0	207	730	221	3.0	2.7	637	170	469	7.4	2130	2130
Walnut City Well #1 (1919)	9/25/57	2510	"	70	1650	3.2	0.5	198	63	41	248	0	209	709	224	3.9	5.7	629	167	462	7.5	217	217
Walnut City Well #1 (1919)	3/7/60	2510	"	59	1631	.08	0.5	172	61	38	205	0	205	608	219	3.0	6.6	681	168	573	7.6	2250	2250
Walnut City Well #1 (1919)	6/4/62	2510	"	59	1659	1.7	0.5	156	71	40	232	0	205	729	225	2.6	0.1	682	168	514	7.6	2060	2060

NOTES:



THORPE WELL COMPANY

BOX 1376 / DES MOINES 13, IOWA / 243-6105 / AREA CODE 615

We dig for our business.

September 6, 1963

IOWA GEOLOGICAL SURVEY

SEP 9 - 1963

Iowa Geological Survey
Iowa City, Iowa

Gentlemen:

We have been requested by the Board of Water Works Trustees for the Town of Walnut, Iowa, to obtain more specific information relative to the feasibility of drilling an additional deep well similar to the one drilled shortly before World War I and which they are now using.

Our firm recased this well in 1956 and at present, the quality and quantity of water appears to be adequate. Possibly you have a mineral analysis from same which you could include with your forecast and comments.

We would appreciate receiving any information you might have relative to same.

With best personal regards, we remain

Yours sincerely,

THORPE WELL COMPANY

Tom C. Thorpe

Tom C. Thorpe
Vice President

TCT/map