

W-23110

Town of North English #3

PL8-711-714

T.D.-1942-

Top picked 0'-1000' Logged 1000'-1942'-T.D.

Log should be in strat log file

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
123 NORTH CAPITOL STREET
IOWA CITY, IOWA 52242
Phone: (319) 338-1173

MEMORANDUM

To: Ray Anderson

Date: 4/20/84

From: M.J. Bounk

Re: W# 23110

0'-1000' Needs to be coded and the well
and Folder Filed

Thanks,
M.J.B.

9-25-86

An update for records already
online?

01-04-90 audit

Leadates for LATON-ELEV-QUARTERS
ready for verification ~~then~~
to go online.

PF + SL can be returned to Ray

0 - 30	
30 - 40	
40 - 50	
50 - 70	
70 - 80	
80 - 100	
100 - 120	tr Miss sh pebbles - gr coat
120 - 140	
140 - 160	
160 - 170	mod. dirty - some till
170 - 180	mod. dirty
180 - 190	v. dirty
190 - 210	less dirty

3-1-72 call from Jim Sampson, Green Engr.

160' of 24" csq. set

400' W. of 1947 Well., ~ 10' lower than 1947 Well.
close to 1st liner (~ 650)

Raul Gatewood

3-31-72

J. A. Sampson, P. E.
Howard R. Green Company
417 First Avenue S.E.
Cedar Rapids, Iowa 52401

Dear Mr. Sampson:

Formation tops for the North English
No. 3 well are as follows:

St. Peter	1312
Prairie du Chien	1340

cc William McElhiney
Varner Well and Pump Co.
Box 237
Dubuque, Iowa 52001

VTY

DLK

CSG

North English

3-1-72

Paul:

A pilot hole was drilled to 220' to determine lithology of unconsolidated sediments and depth to bedrock.

This hole was reamed with the intent of running 24" surface casing to 220', but they could only get the 24" csg to 160' (this is the depth where sample shows v. dirty sand that may really be washed till - perhaps it was squeezing in).

They should reach next casing pt. (Ledar Valley) in about 2 days. Samples are to be brought in for verification

apparently in till

located ~ 400' west of 1947 well

B

HOWARD R. GREEN COMPANY

Consulting Engineers

STRUCTURES: PUBLIC, INDUSTRIAL, COMMERCIAL
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WATER SUPPLY AND TREATMENT • BRIDGES • DAMS
AIRPORTS • SWIMMING POOLS • LAND SURVEYS
SEWERS: SANITARY AND STORM • STREETS

Phone 319 366-0741 • Green Engineering Building • 417 First Avenue S.E. • Cedar Rapids, Iowa 52401

February 21, 1972

Iowa Geological Survey
16 West Jefferson Street
Iowa City, Iowa 52240

Attn: Mr. Paul J. Horick
Chief of Ground Water Geology

Re: Jordan Well
North English, Iowa

Gentlemen:

This is to advise you that the Varner Well and Pump Company has started to drill a Jordan well at the subject location.

Mr. Bud Gatewood is the drilling superintendent on the job. The specifications require that the driller preserve samples of drill cuttings at 5 ft. intervals or more often whenever a change of formation is encountered.

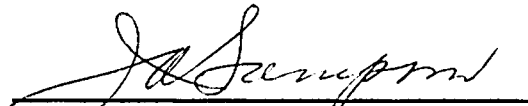
It will be appreciated if you will send a supply of sample containers directly to Mr. Gatewood in care of Mr. Dean Marse, Town Clerk, North English, Iowa

In the event that the driller or Engineer desires to call the Survey for assistance in identification of rock samples, who should they call?

We will try to keep you advised as the drilling progresses.

Yours very truly,

HOWARD R. GREEN COMPANY


J. A. Sampson, P. E.

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Phone 319 366-0741 • Green Engineering Building • 417 First Avenue S.E. • Cedar Rapids, Iowa 52401

August 23, 1971

Iowa Geological Survey
16 West Jefferson Street
Iowa City, Iowa 52240

Attn: Mr. Paul J. Horick
Chief of Ground Water Geology

Re: Jordan Well
North English, Iowa

Gentlemen:

Enclosed are drawings showing the construction of a proposed new Jordan well at the subject location.

The specifications will require pressure grouting from the 1700 foot level in a continuous operation.

We will appreciate your review of the proposed construction log and your comments or recommendations regarding the same.

Yours very truly,

HOWARD R. GREEN COMPANY


J. A. Sampson, P. E.

ss
encl

August 25, 1971

Mr. J.A. Sampson, P.E.
Howard R. Green Company
417 First Avenue S.E.
Cedar Rapids, Iowa 52401

Dear Mr. Sampson:

I have studied the construction plans you submitted for the proposed deep well at North English.

Because the Lime Creek Formation consists mostly of shale with minor limestone I feel it would be best to extend and set the 20-inch O.D. liner into the upper part of the Cedar Valley Limestone at about 650 feet. The Lime Creek is potentially dangerous as a caving zone and could cause trouble unless cased out.

In my letter of June 16 I advised grouting casing from the surface to about 150 feet into the Prairie du Chien Dolomite. If this plan were followed, the bottom of the 13 3/8-inch O.D. casing would rest at about 1,490 feet. However, both of your construction plans have the 13 3/8-inch O.D. casing extending to 1,700 feet.

Now, it is imperative that the old town well No. 1 be plugged to be sure it is not allowing highly mineralized water to move down into the Jordan aquifer. Our records show that well No. 1, drilled in 1921, was 1,678 feet deep and that the casing extended to the bottom of the well and was perforated at various places. Apparently the pump was removed from well No. 1 when well No. 2 was placed in service, but there is no record that well No. 1 was plugged. The chances are however, that well No. 1 was plugged because well No. 2 yielded good water after the casing leak was repaired in 1949.

3
Mr. J.A. Sampson, P.E.

Page 2

August 25, 1971

Well No. 2 was cased to 1,705 feet with the idea of preventing the more mineralized water developed in well No. 1 from entering the well No. 2. It is questionable whether this effect would be achieved because the dolomite and deeper Jordan Sandstone probably are hydraulically connected. Well No. 2 also should be plugged and abandoned unless it can be proved that it is not leaking from the intermediate (Devonian) formations. My letter of June 16 included a sketch of the repair work done on well No. 2 in 1949.

If these steps are not taken a new deep well probably will produce the highly mineralized water also, depending on its location and distance from wells No. 1 and No. 2. Thus you must first ascertain if well No. 1 is properly plugged. Then well No. 2 must be entered to see whether the repair work of 1949 has sprung a new leak. If the casing in well No. 2 is intact the trouble must be in well No. 1.

At any rate, you got the point, I'm sure--if either of the old wells can't be reconditioned, they must be plugged before drilling a new Jordan well or the problem will be compounded, and the town will have expended a large sum of money without satisfactorily solving their water problem.

If wells No. 1 and No. 2 are in good shape or plugged there should be no need to extend the bottom of the casing in the new well more than 150 feet below the top of the Prairie du Chien Dolomite.

I'll be happy to discuss plugging schedules for the old wells for you. Please write or stop in if this additional information poses any questions.

Very truly yours,

Paul J. Horick
Chief of Groundwater Geology

PJH:cs

Driller: Paul Gatewood

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 Feb. 17, 72
Job North English
Hole No. 3
Rig No. H-4 B. MASTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
170	175	7:15	7:37	22	Ph	10-11		12 1/2
	180		8:02	25	SHALE			
	185		8:28	26				
	190	7:40	9:48	80	Sand 45' v. Lm 5'			
	195	10:10	10:29	19	Conn. 3er RIG & C.P.S.			6' FILLUP
	200		10:38	10				
	OS		11:10	32	Lm & SHALE			
	10		11:50	40				2.6" O.D. P.
	15		12:45	55				
	20		1:37	52		Lm & sh.		1 27.65
	2 25		2:23	46				2 31.75
	30							3 33.35
	35				350			4 34.75
	40				52			5 33.40
	45	KELLY	40-	40-	700		2 1/2 Tubing	6 31.06
	50	3.55	3.55	43-55	700			7 31.43
3-55	55	30.50	30.50	74.05	700			8 31.30
	60	2	29.75	103.80				9 29.05
	65	3	28.65	132.45				10 24.70
	70	D.P.	31.58	164.03				11 18.90
	2 75	D.P.	31.48	195.51				12 16.2
	80							
	85							
	90							
	95							
	300							

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Feb 23 1974
Job 1000 ft. E. of 1st
Hole No. 3 = 123"
Rig No. N4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
225	26	12:20	12:33	13			L M 4 S 1/2 10	
	27		12:50	17				
	28	12:50	1:07	17			COAL / CLAY / 1/2 10	
	29	2:00	2:12	12				
	30		2:30	18				
	31		2:52	20				
	32		3:14	20				
	33		3:37	27				
	34		4:02	25				
	35		4:28	26				
	36		4:57	29				
	37		5:27	30				
	38		5:53	28				
	39		6:26	31				
	40		7:03	37				
	41		7:23	20			Shale @ 240	
	42		7:32	9			Shale @ 240	
	43		7:39	8				
	44		7:50	16				
	45		8:07	7				
	46		8:25	18				
	47		8:45	20			Shale	
	48		9:08	23				
	49		9:33	25				
	50		9:57	24				
	51		10:22	25				
	52		10:44	22				
	53		11:00	16				
	54		11:23	23				
	55	1:23	1:38	15				

ADDITIONAL REMARKS, ETC.

Pump nearly out of section
Work on Pump.
New piston runners in 1st wheel
Side of pump.

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BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Feb 23, 1912
Job North English, Iowa
Hole No. # 3
Rig No. Brewster N 4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
255	256	1:38	2:00	22	Conn.		Shale	
	57	2:20	2:40	20	2 Pump		& Rotary Conn.	
	58		3:05	25			Shale	
	59		3:25	20				Work on Pump
	60	4:45	5:05	20			Shale	Work on Pump
	61		5:30	25			"	Run Slur Shot
	62		5:50	20			"	
	63		6:15	25			"	
	64		6:40	25			"	
	65		6:55	15			Shale	
	66		7:13	18			"	
	67		7:37	24			"	
	68		7:57	20			"	Down with Pump
	69	9:15	9:30	15			"	Pump started
2	70		9:45	15			Shale	
	71		9:55	10			"	
	72		10:05	10			"	
	73		10:15	10			"	
	74		10:30	15			"	
2	75		10:40	10			Shale	
	76		10:50	10			"	
	77		11:02	12				
	78		11:15	13				
	79		11:26	11				
2	80		11:38	12				
	81		11:58	20				
	82		12:17	19				
	83		12:37	20				
	84		12:57	20				
2	85		1:11					

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Feb 24 1972
Job North English 3rd
Hole No. 34 = 23"
Rig No. N 4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
285	86	1:11	1:30	19			connected by Air pump	
	87	1:42	1:50	8			Shale	
	88		1:58	8				
	89		2:07	9				
	90		2:16	9		11		
	91		2:25	9		11		
	92		2:35	10		11		
	93		2:50	15		11		
	94		3:06	16		11		
	95		3:25	19		11		
	96		3:40	15		11		
	97		3:50	15		11		
	98		4:07	17		11		
	99		4:30	23		11		
	300		4:42	12			Shale	
	01		5:02	20			11	
	02		5:17	15			11	
	03		5:34	17			11	
	04		5:47	13			11	
	05		6:00	13			Shale	
	06		6:13	13			11	
	07		6:30	17			11	
	08		6:46	16			11	
	09		7:02	16			11	
	310		7:12	10			11	
	11		7:21	9			11	
	12		7:32	11			11	
	13		7:44	12			11	
	14		8:00	16				
	15		8:24	24				CONN FUEL PUMP FOR P.S.

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Jul 24, 1972

Job North English, Iowa

Hole No. #3

Rig No. N-4 Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
315	316	9:03	9:20	17			Shale	
	17		9:34	14				
	18		9:50	16				
	19		10:02	12				
320			10:16	14			Shale	
	21		10:25	9				
	22		10:43	18				
	23		11:00	17				
	24		11:23	23				
325			11:48	25				
	26		12:07	19				
	27		12:25	18				
	28		12:43	18				
	29		1:07	24				
330			1:33	26			Shale	
	31		2:02	29			"	
	32		2:31	29			"	
	33		3:00	29			"	
34	5:00	5:40	10				"	Good Run - 10' 17" 18"
335		5:25	15				"	Build up 10' 17" 18"
	36	5:40	15				"	
	37	6:00	20				"	
	38	6:25	25				"	
	39	6:40	15				"	
340		6:50	10				Shale	
	41	7:23	13				"	
	42	7:16	13				"	
	43	7:35	19				"	
	44	7:55	20				"	
345	8:10	8:20	10				"	Good - 10' 17" 18"

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.

BOX 73 BROOKFIELD, ILL.

Date Feb 24 1970

Job Wells Eng Co

Hole No. 3 23

Rig No. 214

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
345	46	8:20	8:35	15			Shale	
	47		8:55	20			"	
	48		9:10	15			"	
	49		9:25	15			"	
350			9:50	25			"	
	51		10:05	15			"	
	52		10:20	15			"	
	53		10:35	15			"	
	54		10:50	15			"	
	55		11:00	10			"	
	56		11:15	15			"	
	57		11:30	15			"	
	58		11:46	16			"	
	59		12:04	18			"	
360			12:21	17			Shale	
	61		12:35	14				
	62		12:50	15				
	63		1:08	18				
	64		1:25	17				
	65		1:42	17				
	66		1:55	13				
	67		2:10	15				
	68		2:27	17				
	69		2:42	15				
370			2:55	13				
	71		3:07	12				
	72		3:20	13				
	73		3:37	17				
374	4:04		4:15	11				
375			4:25	10				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.

BOX 73 BROOKFIELD, ILL.

Date Feb 24th 1972

Job North English

Hole No. 3 23"

Rig No. 764

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
375	76	4:25	4:40	15			Shale	23" hole
	77		4:53	13			"	
	78		5:08	15			"	
	79		5:25	17			"	
380			5:45	20			"	
	81		6:00	15			Shale	
	82		6:17	17				
	83		6:34	17				
	84		6:51	17				
	85		7:07	16			Shale	
	86		7:20	13				
	87		7:37	17				
	88		7:50	13				
	89		8:03	13				
390			8:17	14			Shale	
	91		8:30	13				
	92		8:42	12				
	93		8:56	14				
	94		9:08	12				
	95		9:19	11			Shale	
	96		9:30	11				
	97		9:46	16				
	98		10:01	15				
	99		10:20	19			Shale	
400			10:38	18				
	01		10:59	20				
	02		11:12	14				
	03	11:31	11:49	17				Permit/See Fig. 4 for time & depth
	04		11:59	11				
	05		12:14	15				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 2-25-72
Job North Engle Lake
Hole No. #3
Rig No. N-4 Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
105	900	12:14	12:25	11			Shale	2.3" / 112
	17	12:25	12:39	14				
	18		12:52	13				
	19	12:58	1:01	9				
410			1:14	13				
	11		1:25	11				
	12		1:37	12				
	13		1:49	12				
	14		2:00	11				
415			2:13	13			Shale	
	16		2:26	13			"	
	17		2:38	12			"	
	18		2:50	12			"	
	19		3:05	15			"	
420			3:18	13			Shale	
	21		3:30	12			"	
	22		3:42	12			"	
	23		3:55	13			"	
	24		4:07	12			"	
425			4:20	13			"	
	26		4:35	15			"	
	27		4:50	15			"	
	28		5:05	15			"	
	29		5:20	15			"	
430			5:35	15			"	
	31	6:25	6:38	13			"	Cramp gear run
	32		6:50	12			"	Repin 1/4 inch
	33		7:05	15			"	Repin 1/4 inch
	34		7:20	15			"	
435			7:33	13			"	

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☐ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date July 25, 1972
Job 700-16-22-0-1-1
Hole No. 23 L 23"
Rig No. 7-4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
435	36	7:53	7:45	12			Shale	run
	37		7:55	10			"	
	38		8:02	17			"	
	39		8:29	15			"	
	440		8:42	13			"	
	41		8:55	13			Shale	run
	42		9:10	15			"	
	43		9:23	13			"	
	44		9:38	15			"	
	45		9:52	14			"	
	46		10:07	15			"	
	47		10:22	15			"	
	48		10:37	15			"	
	49		10:50	13			"	
	450		11:04	14			"	
	51		11:16	12				
	52		11:30	14				
	53		11:43	13				
	54		12:00	17				
	55		12:17	17				
	56		12:37	20				
	57		12:56	19				
	58		1:14	18				
	59		1:34	20				
460	2:22	2:42	20					Fix air compressor Bit
61	2:55	3:12	17					CONV Check Rig
62		3:30	18					
63		3:50	20					
64		4:07	17					
465		4:26	19					

ADDITIONAL REMARKS, ETC.

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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							
465	66	4:26	4:50	13				
	67		5:18	15				
	68		5:35	17				
	69		5:55	20				
470			6:12	17			Shale	
	71	6:17	6:40	23			Air Pump	
	72		7:12	32				
	73		7:37	25				
	74		7:57	20	4-		BROKEN TAP	
75	8:13	9:09	30		AIR		COMP. BOLT BROKE	
	76		9:35	26			NEW BOLT	
	77		10:02	27				
	78		10:32	30				
	79		11:00	28				
480			11:29	29			Shale	
	81		11:59	30				
	82		12:20	21			Water	15 min.
	83	12:35	1:00	25			Water	
	84		1:27	27				
	85		1:50	23			Shale	
	86		2:11	21			COMP @ 400'	
	87	2:29	3:00	31			"	Run down shot
	88	4:25	4:55	30			"	Start by foot
	89		4:15	20			"	put in shot
490			4:35	20			Shale & lime	
	91		4:57	22			"	
	92		6:00	23			"	
	93		6:40	20			"	
	94		7:00	20			"	
95	9:05	8:25	20				"	Repack & cement

ADDITIONAL REMARKS, ETC.

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☐ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Sept 26 1972
Job Water Pump
Hole No. 2
Rig No. 214
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
495	96	8:25	8:40	15			Sh-L	
	97		8:53	13			Sh-	
	98		9:05	12			"	
	99		9:18	13			"	
	100		9:30	12			"	
	101		9:42	12			"	
	102		9:54	12			"	
	103		10:06	12			"	
	104		10:18	12			"	
	105		10:30	12			"	
	106		10:42	12			"	
	107		10:54	12			"	
	108		11:06	12			"	
	109		11:18	12			"	
	110		11:30	12			"	
	111		11:42	12			"	
	112		11:54	12			"	
	113		12:06	12			"	
	114		12:18	12			"	
	115		12:30	12			"	
	116		12:42	12			"	
	117		12:54	12			"	
	118		1:06	12			"	
	119		1:18	12			"	
	120		1:30	12			"	
	121		1:42	12			"	
	122		1:54	12			"	
	123		2:06	12			"	
	124		2:18	12			"	
	125		2:30	12			"	
	126		2:42	12			"	
	127		2:54	12			"	
	128		3:06	12			"	
	129		3:18	12			"	
	130		3:30	12			"	
	131		3:42	12			"	
	132		3:54	12			"	
	133		4:06	12			"	
	134		4:18	12			"	
	135		4:30	12			"	
	136		4:42	12			"	
	137		4:54	12			"	
	138		5:06	12			"	
	139		5:18	12			"	
	140		5:30	12			"	
	141		5:42	12			"	
	142		5:54	12			"	
	143		6:06	12			"	
	144		6:18	12			"	
	145		6:30	12			"	
	146		6:42	12			"	
	147		6:54	12			"	
	148		7:06	12			"	
	149		7:18	12			"	
	150		7:30	12			"	
	151		7:42	12			"	
	152		7:54	12			"	
	153		8:06	12			"	
	154		8:18	12			"	
	155		8:30	12			"	
	156		8:42	12			"	
	157		8:54	12			"	
	158		9:06	12			"	
	159		9:18	12			"	
	160		9:30	12			"	
	161		9:42	12			"	
	162		9:54	12			"	
	163		10:06	12			"	
	164		10:18	12			"	
	165		10:30	12			"	
	166		10:42	12			"	
	167		10:54	12			"	
	168		11:06	12			"	
	169		11:18	12			"	
	170		11:30	12			"	
	171		11:42	12			"	
	172		11:54	12			"	
	173		12:06	12			"	
	174		12:18	12			"	
	175		12:30	12			"	
	176		12:42	12			"	
	177		12:54	12			"	
	178		1:06	12			"	
	179		1:18	12			"	
	180		1:30	12			"	
	181		1:42	12			"	
	182		1:54	12			"	
	183		2:06	12			"	
	184		2:18	12			"	
	185		2:30	12			"	
	186		2:42	12			"	
	187		2:54	12			"	
	188		3:06	12			"	
	189		3:18	12			"	
	190		3:30	12			"	
	191		3:42	12			"	
	192		3:54	12			"	
	193		4:06	12			"	
	194		4:18	12			"	
	195		4:30	12			"	
	196		4:42	12			"	
	197		4:54	12			"	
	198		5:06	12			"	
	199		5:18	12			"	
	200		5:30	12			"	
	201		5:42	12			"	
	202		5:54	12			"	
	203		6:06	12			"	
	204		6:18	12			"	
	205		6:30	12			"	
	206		6:42	12			"	
	207		6:54	12			"	
	208		7:06	12			"	
	209		7:18	12			"	
	210		7:30	12			"	
	211		7:42	12			"	
	212		7:54	12			"	
	213		8:06	12			"	
	214		8:18	12			"	
	215		8:30	12			"	
	216		8:42	12			"	
	217		8:54	12			"	
	218		9:06	12			"	
	219		9:18	12			"	
	220		9:30	12			"	
	221		9:42	12			"	
	222		9:54	12			"	
	223		10:06	12			"	
	224		10:18	12			"	
	225		10:30	12			"	
	226		10:42	12			"	
	227		10:54	12			"	
	228		11:06	12			"	
	229		11:18	12			"	
	230		11:30	12			"	
	231		11:42	12			"	
	232		11:54	12			"	
	233		12:06	12			"	
	234		12:18	12			"	
	235		12:30	12			"	
	236		12:42	12			"	
	237		12:54	12			"	
	238		1:06	12			"	
	239		1:18	12			"	
	240		1:30	12			"	
	241		1:42	12			"	
	242		1:54	12			"	
	243		2:06	12			"	
	244		2:18	12			"	
	245		2:30	12			"	
	246		2:42	12			"	
	247		2:54	12			"	
	248		3:06	12			"	
	249		3:18	12			"	
	250		3:30	12			"	
	251		3:42	12			"	
	252		3:54	12			"	
	253		4:06	12			"	
	254		4:18	12			"	
	255		4:30	12			"	
	256		4:42	12			"	
	257		4:54	12			"	
	258		5:06	12			"	
	259		5:18	12			"	
	260		5:30	12			"	
	261		5:42	12			"	
	262		5:54	12			"	
	263		6:06	12			"	
	264		6:18	12			"	
	265		6:30	12			"	
	266		6:42	12			"	
	267		6:54	12			"	
	268		7:06	12			"	
	269		7:18	12			"	
	270		7:30	12			"	
	271		7:42	12			"	
	272		7:54	12			"	
	273		8:06	12			"	
	274		8:18	12			"	
	275		8:30	12			"	
	276		8:42	12			"	
	277		8:54	12			"	
	278		9:06	12			"	
	279		9:18	12			"	
	280		9:30	12			"	
	281		9:42	12			"	
	282		9:54	12			"	
	283		10:06	12			"	
	284		10:18	12			"	
	285		10:30	12			"	
	286		10:42	12			"	
	287		10:54	12			"	
	288		11:06	12			"	
	289		11:18	12			"	
	290		11:30	12			"	
	291		11:42	12			"	
	292		11:54	12			"	
	293		12:06	12			"	
	294		12:18	12			"	
	295		12:30	12			"	
	296		12:42	12			"	
	297		12:54	12			"	
	298		1:06	12			"	
	299		1:18	12			"	
	300		1:30	12			"	

ADDITIONAL REMARKS, ETC.

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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 Feb 27 1972
Job North Elk Lake, Iowa
Hole No. #3 0
Rig No. 44 Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
525	526	9:15	9:55	40			Pine	
	527		10:26	31				
	528		11:03	37			See Rig & AIR RECORD	
	529	11:13	11:40	27				
	530		11:58	18			Adding STEAM WATER &	
	531		12:11	13			MIXING PHASE.	
	532		12:25	14			P-H (9)	
	533		12:50	25				
	534		1:19	29				
	535	12:55	1:49	30	P.M.		Lim + Gypsum - C.C.	
	536	12:55	1:30	35			100. AIR 375 ON D.W.	
	537		2:00	30			Head knocked out	
	538		2:30	20			of running	
	539		2:46	26			DOWN AIR 11 P.M.	
	540		3:13	27				
	541		3:43	30				
	542		4:10	27				
	543		4:45	35				
	544		5:17	32				
	545		5:47	30				
	546		6:13	26				
	547		6:30	17				
	548		6:57	27				
	549		7:25	28			Same & gummy hole	
	550		7:55	30			Down 551	
	551		8:30	25				
	552	9:22	9:55	33			See Rig - REPAIR STAND	
	553		10:50	55			FEWERS PIPE	
	554		11:22	32			CLAMP	
	555		11:55	33			Shake + STAND UP HOLE	

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☒ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Feb 28, 1972
Job North Elm Park, Ill.
Hole No. #3
Rig No. #7
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
555	556	11:55	12:50	55			Shale & Lime	
	57		1:10	20				
	58		1:30	20				
	59		1:45	15				
	560		2:05	20			REPAIRING MUD LINE UNDER	
	61	2:20	3:35	15			Rig	
	62		3:50	15			Sh - Lime	
	63		4:10	20			"	
	64		4:30	20			"	
	565		4:45	15			shale	
	66		5:05	20			"	
	67		5:30	25			"	
	68		5:55	25			"	
	69		6:20	25			"	
	570		6:50	30			Shale	
	71		7:25	35			"	
	72		8:00	35			"	
	73		8:30	30			"	
	74		9:10	40			Sh - Lime & Sh	
	575		9:52	42				
	76		10:54	60				
	77		12:20	66				
	78		1:10	70				
	79		2:10	60				
	580		3:10	60			Sh & Lime	
	81		3:55	45			CONV check Rig	
	82	4:00	5:00	60				
	83		5:55	55				
	84		7:10	75				
	585		8:08	58			Shale	

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☒ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Feb. 29, 1972
Job Edg. Well #300115
Hole No. #3
Rig No. 1/4 Brauer
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
585	586	8:03	9:10	62			Shale	6000 ft - 600
	87		11:25	75				
	88		11:34	69				
	89		12:34	60				
	590		1:34	60				
	91		2:30	56				
	92		3:30	60				Time for Bit
	93	10:40	11:01	21				
	94		11:50	49				
	95		12:25	35		sh		
	96		12:53	28				
	97		1:26	32				
	98		1:55	30				
	99		2:20	25				
	600		2:40	20		sh		
	01		3:01	21				
	02		3:21	20				
	03		3:40	19				
	04		3:58	18				
	605		4:22	24		sh		
	06		4:57	35				
	07		5:25	29				
	08		5:47	22				
	09		6:15	58				
	610		7:14	29				
	11		8:14	60				
	12		9:29	75	CONN.		SER. REC.	
	13	9:45	10:45	60				
	14		11:46	61				
	615		12:59	73				

ADDITIONAL REMARKS, ETC.

Top picked by R; samples brought to office by drillers' helper, 3-2-72

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MILWAUKEE, WIS.

☒ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date *Nov 15 1972*

Job *North Branch*

Hole No. *#3*

Rig No. *42 Borden*

Tour *M* *M*

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
<i>6 16</i>	<i>17</i>	<i>12:59</i>	<i>2:05</i>	<i>66</i>		<i>Shale</i>	<i>PH. 9</i>	
	<i>18</i>		<i>3:55</i>	<i>110</i>				
	<i>19</i>		<i>5:05</i>	<i>70</i>			<i>Shale - Silty</i>	
	<i>20</i>		<i>6:10</i>	<i>65</i>				
<i>6 20</i>	<i>21</i>		<i>7:05</i>	<i>55</i>				
	<i>22</i>		<i>8:15</i>	<i>70</i>				
	<i>23</i>		<i>9:50</i>	<i>105</i>			<i>Shale & shale</i>	
	<i>24</i>		<i>10:55</i>	<i>65</i>				
	<i>25</i>		<i>11:16</i>	<i>21</i>				
	<i>26</i>		<i>12:04</i>	<i>48</i>				
	<i>27</i>		<i>12:45</i>	<i>41</i>				
	<i>28</i>		<i>1:08</i>	<i>23</i>				
	<i>29</i>		<i>1:24</i>	<i>16</i>			<i>Shale</i>	
	<i>30</i>		<i>1:40</i>	<i>16</i>				
<i>6 30</i>	<i>31</i>		<i>1:58</i>	<i>18</i>			<i>Shale</i>	
	<i>32</i>		<i>2:10</i>	<i>12</i>				
	<i>33</i>		<i>2:21</i>	<i>11</i>				
	<i>34</i>		<i>2:34</i>	<i>13</i>				
	<i>35</i>		<i>2:55</i>	<i>21</i>				
	<i>36</i>		<i>3:10</i>	<i>15</i>			<i>Shale</i>	
	<i>37</i>		<i>3:24</i>	<i>14</i>				
	<i>38</i>		<i>3:46</i>	<i>22</i>				
	<i>39</i>		<i>4:06</i>	<i>20</i>				
	<i>40</i>		<i>4:28</i>	<i>22</i>				
<i>6 40</i>	<i>41</i>		<i>4:42</i>	<i>14</i>			<i>Shale</i>	
	<i>42</i>		<i>4:58</i>	<i>16</i>				
	<i>43</i>	<i>5:27</i>	<i>5:50</i>	<i>23</i>			<i>Water King and Pump</i>	
	<i>44</i>		<i>6:16</i>	<i>26</i>				
	<i>45</i>	<i>6:36</i>	<i>7:00</i>	<i>44</i>			<i>CONN Check Rig</i>	
	<i>46</i>		<i>7:59</i>	<i>39</i>				

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☒ **VARNER WELL AND PUMP CO.**
BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MARCH 7, 1972

Job North English

Hole No. 243

Rig No. *Brewster*

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
652	53	2:05	2:24	19			Line S	Start 17 1/2"
	54		2:54	30				
	55		3:15	21				both bit
	56		3:45	30				
	57		4:20	35				
	58		4:45	25				
	59		5:10	25				
660			5:35	25				
	61		6:05	30				
	62		6:20	25				
	63		6:55	25				
	64		7:15	20				
	65		7:35	20				
	66		7:55	20				
	67		8:15	20				Working on mud
68	9:55	10:10	15					line C
	69		10:30	20				
	70		10:50	20				
	71		11:15	25				
	72		11:30	15				
	73		11:50	20				
	74		12:10	20				connect Rig
75	12:17	12:35	18					
76		12:55	20					
	77		1:15	20				
	78		1:40	25				
	79		2:10	30				
680			2:35	25				

ADDITIONAL REMARKS, ETC.

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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 MARCH 9, 1912

Job WATER - SUGAR

Hole No. 43

Rig No. B. 10000

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
620	641	2735	3:00	25			1100	
	82		3:30	30				
	72		4:00	30				
	82		4:37	37				
	82		5:10	33				
	82		5:40	30				
	91		6:07	27				
	82		6:24	17				
	82		6:40	16				
643		7:02	22		1100	2000	4.00	1100
81		7:22	7:36	14				
90			8:01	25				
92			8:25	24				
94			8:49	23			Line @	Shale
96			9:13	25				
98			9:41	28				
100			10:14	33				
98			10:34	20				LOSING A LITTLE FLUID
97			11:04	30				
700			11:30	26			Down	20 MIN
94			11:57	27				
62			12:25	28	Can @	702	4 C.P.S. + the pump	
60		1:05	1:52	25			4 W. 1/2 LEADAGE at 700	
			1:50	20				11000
			2:08	18			Line	
60			2:25	17				
60			2:45	20				
60			3:00	15				
60			3:10	10				
710			3:20	10				

ADDITIONAL REMARKS, ETC.

HICKLIN - DES MOINES

S/S - 288 9731

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BOX 359 BROOKFIELD, ILL.

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MILWAUKEE, WIS.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date March 8, 1977
Job North English
Hole No. 3
Rig No. 21-4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
710	11	3:20	3:35	15			Limst	Brown
	12		3:50	15				
	13		4:10	20				
	14		4:30	20				
	15		4:48	18				
	16		5:02	14				
	17		5:12	10				
	18		5:22	10				
	19		5:32	10				
720			5:41	9			Limst	Dab
	21		5:50	9				
	22		5:59	8				
	23		6:05	7				
	24		6:12	7				
	25		6:19	7				
	26		6:24	5				
	27		6:30	6				Downs mechanic working on P.W. Motor
	28	8:25	8:32	7				
	29		8:40	8				
730			8:50	10				
	31		9:00	10				
	32		9:15	15				
	33	9:45	10:00	15				Fuel leak
	34		10:12	12				
	35	10:20	10:30	10				Coal
	36		10:40	10				
	37		10:50	10				
	38		11:03	13				
	39		11:13	10				
740			11:27	14				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date March 8, 1972

Job North English

Hole No. 3

Rig No. 7-4

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
740	41	11:27	11:43	17			L 1114	
	42		11:58	15			"	
	43		12:16	18			"	
	44		12:43	27			"	
	45		1:07	24			"	
	46		1:26	19			"	
	47		1:43	17			"	
	48		2:00	17			"	
	49		2:15	15			"	
750			2:34	19			L 1114 Brown Dolo	
	51	2:45	2:50	5			Air Pump	
	52	3:12	3:36	24			"	
	53		3:57	21			"	
	54		4:20	23			"	
	55		4:40	20			"	
	56		4:55	15			"	
	57		5:11	16			"	
	58		5:31	20			"	
	59		5:50	19			"	
760			6:07	17			Air Pump Clean screen	
	61	6:25	6:47	22			"	
	62	7:00	7:20	20			"	
	63		7:40	20			"	
	64		7:53	13			"	
	65		8:12	19			"	
	66	8:31	8:51	20			COMP 765 - 800 PPS	
	67		9:23	32			ARR PUMP & WASH	
	68		9:55	32			OUT PATHOLE	
	69		10:15	20			MECHANIC WORKING ON D.H. Meters	
770	11:55	12:15	20				" ON Pump MTR	

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MAR. 9, 72
Job NORTH ENG. TOWN
Hole No. #3
Rig No. BREWSTER
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
770	771	12:15	12:45	30			Lime	
	772		1:10	25				
	773		1:28	18				
	774		1:45	17				
	775		2:00	15				
	776		2:13	13			Lime & Shale	
	777		2:26	13				
	778		2:38	12				
	779		2:50	12				
	780		3:01	11				
	81		3:12	11				
	82		3:24	12				
	83		3:40	16				
	84		4:00	20				work on pump
	85	4:25	4:40	15				air sand
	86		4:52	12				
	87		5:05	13				
	88		5:25	20			lime	
	89		5:50	25				
	790	6:15	6:35	20				Weld mud line
	91		7:00	25				
	92		7:15	15				
	93		7:27	12				
	94		8:00	33				
	95		8:30	30				
	96	8:45	9:25	40				MADE Conn
	97		10:25	60				
	98		11:20	55				Weld mud line
	99	11:40	12:20	40				
	800	12:35	1:00	25				Weld mud line

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MARCH 10, 1972
Job NORTH ENCLINCH
Hole No. 11-3
Rig No. BRUNSTEN
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
800	801	1:00	1:50	50	.	5 1/2 lb		
	02		2:27	37	.			
	03		3:27	60	.			
	04		4:20	53	.			
	05		5:35	75				
	06		6:20	45				
	07	6:30	6:58	28			Hit Pump	
	08		7:10	12				
	09		7:09	9				
	10		7:20	11				
	11		7:30	10				
	12		7:41	11				
	13		7:48	7				
	14		7:55	7				
	15		8:09	14			Shale	
	16		8:20	11				
	17		8:30	10				
	18		8:41	11				
	19		8:51	10				
	20		8:59	8				
	21	9:50	10:00	10				Down 5' min. MAKE GASKET FOR C.P.S. SEE RIG & REPLACE VALVE INSERT ON BACK DISCHARGE ON OILER SIDE.
	22		10:09	9				
	23		10:20	11				
	24		10:33	13				
	25		10:45	12				
	26		10:57	12				
	27		11:09	12				
	28		11:27	18				
	29		11:43	16				
	30		11:58	15				Conn - SWIVEL Shale

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MARCH 10 72
Job NORTH English
Hole No. #3
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
830	831	11:58	12:10	12			Shale	17 1/2" Hole
	32		12:23	13				Tool Bit.
	33		12:36	13				
	34		12:53	17				
	835		1:10	17				
	36		1:25	15				
	37		1:36	11				
	38	2:08	2:18	10			NEW TACHOMETER CABLE &	
	39		2:28	10			HEAD ON D.W. MOTOR.	
	840		2:42	14				
	41		3:00	18			Down Cleaning pipe	
	42	3:50	4:10	20			See Rig	
	43		4:30	20				
	44	4:55	5:07	12			Shale Valve Cap	
	845		5:15	8			Gasket	
	46		5:23	8				
	47		5:31	8				
	48		5:40	9				
	49		5:47	7				
	850		5:55	7				
	51		6:02	7				
	52		6:08	6				
	53		6:15	7				
	54		6:23	8				
	855		6:30	7			Shale muddy	
	56		6:39	9				
	57	6:50	7:00	10			CONV.	
	58		7:20	20				
	59		7:45	25				
	860		8:00	15				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.

BOX 73 BROOKFIELD, ILL.

Date March 10, 1977

Job Franklin Eng #3

Hole No. 3

Rig No. 774

Tour M M

DEPT.	TIME	TIME	MINUTES	MUD	MUD	FORMATION	REMARKS
FROM	TO	START	FINISH	VISCOSITY	WEIGHT		
860	61	8:00	8:10	10		Shale	
	62		8:20	10			
	63		8:30	10			
	64		8:40	10			
	65		8:50	10			
	66		9:00	10			
	67		9:10	10			
	68		9:22	12			
	69		9:35	13			
870			9:50	15			
	71		10:00	10			
72	4:20	4:33	13			Blew Kelly House	
73		4:58	25			Shut down	
74		5:20	22			on Bottom 4' 20	
75		5:45	25				
76		5:59	14				
77		6:10	11				
78	6:25	6:35	10			Air Pump	
79		6:50	15				
880		7:05	15			Shale	
81		7:20	15				
82		7:38	18				
83		7:55	17				
84		8:10	15				
85		8:25	15				
86		8:40	15				
87		8:57	17				
88						Keelt 1' Short	SWIVEL CONN & Ser Rig C.P.S.
89	9:16	9:29	13				
890		9:42	13			Shale	

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MAR. 16, 72

Job City of North English

Hole No. #3

Rig No. BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
890	91	9:42	9:55	13	water		Shale	17 1/2" hole.
	92		10:10	15				
	93		10:23	13				
	94		10:33	10				
895	95		10:43	10			Shale	
	96		10:53	10				
	97		11:03	10				
	98		11:12	9				
	99		11:21	9				
900			11:30	9			Shale	
	01		11:40	10				
	02		11:50	10				
	03		12:04	14				
	04		12:18	14				
905			12:29	11				
	06		12:39	10				
	07		12:50	11				
	08		1:00	10				
	09		1:10	10				
910			1:20	10			Shale	
	11		1:30	10				
	12		1:42	12				
	13		1:53	11				
	14		2:10	17				
915			2:25	15				
	16	2:37	3:00	23				
	17		4:00	60				
	18		5:00	45				
	19		3:45	45				
920			6:15	30				

915'
CORN & RICE PUMP.

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Mon 16, 1972

Job North Edge

Hole No. 3

Rig No. 74

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
920	21	6:15	6:35	20			Shale & Limestone	
	22		6:50	15				
	23		7:10	20				
	24		7:25	15				
	25		7:45	20				
	26	7:55	8:15	20			Shallowing P. Air Pump	
	27		8:38	23				
	28		9:02	24				
	29		9:25	23				
	930		9:50	25				
	31		10:10	20				
	32		10:30	20				
	33		10:50	21				
	34		11:14	23			Air Pump	
	35	11:19	11:38	19				
	36		11:58	20				
	37		12:20	22				
	38		12:39	19				
	39		1:03	24				
	940		1:23	20				
	41		1:46	23				
	42		2:21	35				
	43		2:56	35				
	44		3:26	30				
	45		3:46	20				
	46		4:21	35				
	47	4:27	4:59	32			Air Pump	
	48		5:25	26				
	49		5:47	22				
	950	6:07	6:26	19			don't Tighten Kelly Has. on stand pipe	

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Mar. 17, 1922
Job North English, Iowa
Hole No. #3
Rig No. Barnett
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
950	51	6:27	6:41	14			Shale	17 1/2" pipe
	52		6:58	17				
	53		7:15	17				
	54		7:30	15				
	55		7:45	15				
	56		8:00	15				
	57	8:30	8:45	15				Bottom
	58		9:12	27				See Rig & C.P.S.
	59		10:05	53				& Repair Stand pipe
	960		10:45	40			Shale & Lime	CLAMP.
	61		11:20	35				
	62		12:15	55				
	63		1:00	45				
	64		1:18	18				
	65		1:45	27				Add RUDERS To 6 L and on Flywheel
	66	2:10	2:28	18				Side
	67		2:50	22				
	68		3:03	13				
	69		3:15	12				
	970		3:35	20				
	71		3:55	20				
	72		4:15	20				
	73		4:31	16				
	74	6:20	6:35	15				Down Repair Fuel
	75		6:50	15				Line Pump motor
	76		7:00	20				Hook up Hose pump
	77		7:30	20				
	78		7:50	20				
	79		8:07	17				
	750		8:30	23				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date March 17 1952
Job North Long
Hole No. 3
Rig No. 77
Tour 1 M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
980	81	9:55	9:20	25			Shale	down C.P.S.
	82		10:10	50			& wire	in Pump
	83		11:08	58				
	84	2:40	3:00	20			Trip	for B.O.
	85		3:20	20				
	86		4:00	40				
	87		4:09	9				
	88		4:30	21				
	89		4:54	24				
	90		5:14	24				
	91		5:33	29				
	92		5:55	22				
	93		6:07	12				
	94		6:20	13				
	95		6:37	17				
	96		6:57	20				
	97		7:17	20				
	98		7:37	20				
	99	8:15	8:30	15				38 min
	1000		8:50	20				See Rig 4 C.P.S. & Record Release
	01		9:03	13				& VALVE CAP LEAK.
	02		9:30	27				
	03		9:59	29				
	04		10:30	31				
	05		11:05	35				
	06		11:35	30				
	07		12:05	30				
	08		12:35	30				
	09		1:05	30				
	1010	1:37	1:58	21				Kelly 1' LONG. Pump

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date March 18, 1972
Job Smith English, Iowa
Hole No. #3
Rig No. Browster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1010	1011	1:58	2:17	19			Shale (B) Fine	
	12		2:40	25				
	13		3:20	38			Clay	Bottom
	14		4:00	40			"	
	15		4:30	30			"	
	16		5:00	30			"	
	17		5:27	27			"	
	18		5:50	23			"	
	19		6:20	30			"	
1020			6:45	25			"	
	21		7:10	25			"	
	22		7:25	15			"	
	23		7:40	15			"	
	24		7:55	15			"	
	25		8:10	15			"	
	26		8:28	18			"	
	27		8:46	18			"	
	28		9:05	19			"	
	29		9:20	15			"	
1030			9:40	20			"	
	31		10:01	21			"	
	32		10:22	22			"	
	33		10:46	23			"	
	34		11:10	24				
	35	11:20	11:40	20			Air Pump	
	36		12:00	20				
	37		12:25	25				
	38		12:45	15				
	39		1:00	15				
1040	1:17	1:37	20				CONN Air Pump	

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☒ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date MARCH 19, 1972

Job NORTH ENGLISH TOWNSHIP

Hole No. #3

Rig No. BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1040	1041	1:37	1:58	21			Lime & Brown	
	42		2:18	20				
	43		2:43	25				
	44		3:05	22				
	45		3:30	25				
	46		3:55	25				
	47		4:17	22				
	48		4:42	25				
	49		5:07	25				
	1050		5:35	28				
	51		5:56	21				
	52		6:10	14				
	53		6:20	10				
	54	6:25	6:50	25			Air Pump	
	55		7:20	30				
	56		7:47	27				
	57		8:15	28				
	58		8:43	28				
	59		9:10	27				
	1060		9:35	25			Lime Bar.	
	61		9:55	20				
	62		10:15	20				
	63		10:34	19				
	64		10:52	18				
	65		11:06	14			SEE RIG & WELDING	
	66	12:10	12:30	20			Mud Line	
	67		12:48	18				
	68		1:10	22				
	69		1:29	19				
	1070	1:45	2:02	17			Close @ 1069	

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 Mar. 19, 1972

Job North Eng. Oil Co.

Hole No. 73 0

Rig No. Reconiter

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1070	1071	2:02	2:30	18				
	72		2:40	20		3-19-72	DOWN	TO 1071
	73		3:00	20		3-22-72		BEARINGS ON MUD PUMP
	74	1:20	1:45	25				Seal (P. Pump)
	75		2:03	18				Shut Down
	76							
	77							
	78							
	79							
	80							
	81							
	82							
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	199							
	200							

ADDITIONAL REMARKS, ETC.

1 FXO - 818 in. ring

INSIDE RACE 6 5/8

626 12 Seal

O.S. RACE 8 1/2

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181 W. WISCONSIN AVE.
MILWAUKEE, WIS.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 3-22-72

Job North English, Iowa

Hole No. #3 0

Rig No. Brunner

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1075	1076	2:03	2:18	15			Line	107 1/2 inch
	77		2:30	12				
	78		2:52	22				
	79	3:30	3:47	17			Welding on sand line	
1080			4:03	16				
	81		4:20	17				
	82		4:37	17				
	83		4:55	18				
	84	5:07	5:25	18			Air Pump	
	85		5:45	20				
	86		6:05	20				
	87		6:25	20				
	88		6:46	21				
	89		7:05	19				
1090			7:25	20				
	91		7:43	18				
	92		8:00	17				
	93		8:16	16				
	94		8:36	20				
	95		8:50	14				
	96		9:05	15				
	97		9:20	15				
	98		9:36	16				
	99		9:51	15				
1100			10:06	15				
	01		10:20	14			Coax Air Pump	
	02	10:40	10:53	13				
	03		11:05	12				
	04		11:25	20				
	05		11:40	15				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 3-23-72

Job North English

Hole No. #3 0

Rig No. Brewster

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1105	06	11:40	12:00	20			L i x a p	
	07		12:15	15				
	08		12:29	14				
	09		12:49	20				
	1110		1:06	17				
	11		1:25	19				
	12		1:40	15				
	13		1:54	14				
	14		2:10	16				
	1115		2:27	17				
	16		2:47	20				
	17		3:05	18				
	18		3:23	18				
	19		3:43	20				
	1120		4:04	21				
	21		4:24	20				
	22		4:49	25				
	23		5:10	21				
	24		5:30	20				
	25		5:50	20				
	26		6:10	20				
	27	6:25	6:40	15			Weld stand pipe	
	28	6:55	7:10	15			Arr pump	
	29		7:28	18			Welding on stand pipe	
	1130	8:13	8:28	15			ADD PACKING TO BOTH PUMP ISLANDS	
	31		8:47	19			PAID @ 11/31 See Rec	
	32	9:00	9:16	16			C.P.S.	
	33		9:30	14				
	34		9:46	16				
	35		10:03	17			Side	

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 3-23-72

Job North English, Ia

Hole No. #3

Rig. No. BREWSTER

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1135	1136	10:03	10:18	15			Stone	
	37		10:40	22				
	38		10:56	16				
	39	11:01	11:20	19	LoT. CHAIN			
1140			11:55	25				
	41		12:08	23				
	42		12:33	25	WELD LEAK		IN mud line	
	43		12:55	22				
	44	1:18	1:48	30				
1145			2:10	22				
	46		2:30	20				
	47		2:50	20				
	48		3:20	30				
	49		3:55	35				
1150			4:35	40				
	51		5:15	40	Welded Pipe			
	52		5:50	35				
	53	6:05	6:25	20				
	54		6:42	17				
1155			7:05	23				
	56		7:25	20				
	57	7:55	8:15	20				Repair casing
	58		8:35	20				Down
	59		8:50	15				
1160			9:10	20				
	61		9:30	20				Conn @ 1161'
	62	9:42	10:00	18				
	63		10:20	20				
	64		10:45	25				
1165			11:05	20				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.

BOX 73 BROOKFIELD, ILL.

Date April 24, 1972

Job WORTHINGTON, ILL.

Hole No. #3

Rig No. B-21578-R

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1165	1166	11:05	11:27	22			LIMP	
	67		11:45	18				
	68		12:05	20				
	69		12:30	25				
	1170		12:55	25				
	71		1:18	23				
	72		1:43	20				
	73	1:50	2:03	20				Put chain on Table
	74	2:55	3:10	15				welding on stand pipe
	75		3:32	22				
	76		3:52	20				
	77		4:10	22				
	78		4:33	18				
	79		4:50	17				
	1180		5:07	12				
	81		5:20	13				
	82		5:32	12				
	83		5:46	14				
	84		6:02	17				
	85		6:20	18				
	86		6:37	17				
	87		6:55	18				
	88		7:11	16				
	89		7:26	15				
	1190		7:41	15				
	91		7:55	14				Switch V.C.P.S.
	92		8:07	12	Start			Run down @ 1/2" / sec
	93	8:21	8:35	14				
	94		8:55	20				Mixing @ 30 Sk GEL
	1195		9:15	20				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 3-24-72

Job North English, Iowa

Hole No. #3

Rig No. Brewster

Tour M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1195	96	10:15	10:33	18			Line	
	97		10:50	17				
	98		11:08	18				
	99		11:27	19				
	1200		11:41	14				
	01		11:56	15				
	02		12:10	14				
	03		12:24	14				
	04		12:37	13				
	1205		12:50	13			Line	
	06		1:03	13				
	07		1:17	14				
	08		1:30	13				
	09	1:55	2:10	15				
	1210		2:20	10				
	11		2:35	15				
	12		2:50	15				
	13		3:05	15				
	14		3:20	20				
	1215		3:45	20				
	16		4:03	18				
	17		4:19	15				
	18		4:33	15				
	19		4:50	17				
	1220		5:04	14				
	21		5:15	11				
	22		5:30	15				
	23	7:00	7:20	20				Conn 1222'
	24		7:40	20				Seal Rig
	1225		8:00	20				Mix 20's kg gal

ADDITIONAL REMARKS, ETC.

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MILWAUKEE, WIS.

☒ VARNER WELL AND PUMP CO.
BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date March 24 1972
Job North Eng
Hole No. 3
Rig No. 114
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1225	26	8:00	8:22	22			Lime	
	27		8:45	23				
	28		9:05	20				
	29		9:25	20				
1230			9:44	19				
	31		9:05	21				
	32		10:25	20				
	33		10:47	22				
	34		11:07	21				
	35		11:33	26				
	36		11:53	20				
	37		12:20	27				
	38		12:49	29				
	39		1:19	30				
1240			1:41	22				
	41		2:02	21				
	42		2:23	21				
	43		2:47	24				
	44		3:13	26				
	45		3:40	27				
	46		4:02	28				
	47		4:30	22				
	48	4:45	5:06	21			Well stand pipe	
	49		5:28	22				
1250			5:52	24				
	51		6:05	13				Conc @ 1251'
	52	6:17	6:43	26				
	53		7:11	28				
	54		7:40	29				
1255			8:17	37				

ADDITIONAL REMARKS, ETC.

SEE RIG
TRIP FOR BUTTON BIT.
+ 2-40

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BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 3-25-72
Job North English, Iowa
Hole No. #3
Rig No. B. Smith
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1255	1256	2:13	2:43	30			limestone	17 1/2" H.W.
	57		4:03	80			Brown Chert	Bottom Bit.
	58		5:00	47			"	
	59		5:55	55			lime & shale	
1260			6:20	25				
	61		6:40	20				
	62	8:05	8:55	50			Well 3rd Pipe	
	63		10:10	75			Put new Seal &	
	64		10:40	30			Valve in pump	
1265			11:05	25				
	66		11:37	32				
	67		11:59	22				
	68		12:26	27				
	69		1:12	46				
1270	7:07	8:07	60				Trip for Bit	
	71	8:27	8:55	28			See Rig	
	72		9:55	60			+ C.P.S.	
	73		10:47	52			Check Pump MTR	
	74	11:17	11:55	38			Welding line & shale	
1275			12:45	50				
	76		1:30	45				
	77		2:20	50				
	78	2:30	3:35	65				
	79		4:30	55				
1280			5:30	60				
	81		6:20	50				
	82		7:05	45				
	83		7:55	50				
	84		8:00	65				
1285			9:15	75				

AL REMARKS, ETC.

1284-37

2.70

1281-97

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MILWAUKEE, WIS.

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BOX 237 DUBUQUE, IOWA
☒ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date *March 26, 1977*
Job *Frontier Eng*
Hole No. *3*
Rig No. *7-4*
Tour *M* *M*

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1285	91	10:15	11:45	90			Swine shale	
	89		1:15	90				
	88		1:56	41				
	89	2:15	3:15	60			Welding std 12.12.77	
1290	2:30	3:30	60				11 11 11	
	91		5:20	110				
	92		6:40	80				
	93		7:08	28			See Rig & C.P.S.	
	94	7:23	7:43	17				
	95		7:47	7				
	96		8:00	13				
	97		8:15	15				
	98		8:32	17				
	99		8:51	19			Shale	
1303		9:05	14				Weld Top of Stand Pipe	
	01	9:34	9:58	24				
	02		10:30	32				
	03		10:50	20			Weld Top of Stand Pipe	
	04	11:18	11:36	12				
	05		12:11	35			Green Shale	
	06	12:21	12:40	19			Tighten Loose Jam Nut on Oiler	
	07		12:54	14			Side of Pump & Flow Nipple	
	08		1:08	14				
	09		1:18	10				
1310		1:40	22				Shale	
	11						Kelly 2' Short	
	12						Conn. & C.P.S.	
st Peter	13	1:55	2:04	9				
	14		2:10	6				
1315		2:18	8					

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Mar. 27 72

Job 3 1/2" 2" English. Brown

Hole No. #3 U

Rig No. Brammer

Tour M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1315	1316	2:18	2:24	6			SAND.	
	17		2:35	10				
	18		2:45	10				
	19		2:59	14				
	1320		3:11	12				
	21		3:19	8				
	22		3:27	8				
	23		3:38	10				
	24		3:48	10				
	1325		4:00	12				
	26		4:12	12				
	27		4:26	14				
	28		4:45	19				
	29		4:58	13				
	1330		5:10	12				
	31		5:25	15				
	32		5:45	20				
	33		6:01	16				
	34		6:17	16				
	1335		6:32	15				
	36		6:47	15				
	37		6:55	8				
	38		7:05	10				
	39		7:15	10				
	1340		7:25	10				
P. du Ch.	41		7:40	15				
	42		8:00	20				
	43	8:15	8:35	20				
	44		9:00	25				
	1345		9:30	30				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date Nov 30, 1972

Job North Eng

Hole No. 3

Rig No. 7-4

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1495	96	7:30	7:55	25				conn. serv Rig
	97		8:25	30				
	98		9:05	40				
	99		9:40	35				
	1500		10:10	30				
	01		10:53	43				
	02		11:15	22				
	03		11:35	20				
	04		12:00	25				
	05		12:30	30				
	06		1:10	40			Weld std Pipe Air Pump	
	07	1:30	2:10	40			" " "	
	08	2:20	2:40	20			Weld mud line	
	09	3:12	3:35	23				
	1510		4:05	30			Weld std Pipe	
	11		4:35	30				
	12		5:05	35				
	13		5:17	15				
	14		5:30	17				
	15		5:50	20				
	16		6:10	20			Weld std Pipe	
	17	6:20	6:35	15				
	18		6:55	20				
	19		7:12	17				
	1520		8:00	48			Long & Dolo @ Pyrite	
	21		8:42	42			Weld Top of STANDPIPE	
	22	9:09	9:47	36			P-H 8 V15-31	
	23		10:40	53				
	24		11:15	35				
	1525		11:41	26				

ADDITIONAL REMARKS, ETC.

ANY DIFFICULTY Call

515-243-4257
BY 7:00AM-MIKE - SCHWERM
- 928 SKS.
1000 SKS Add BENT.

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☐ 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 *Mar 30, 72*

Job *North Eng. Juv*

Hole No. *#3*

Rig No. *Brewster*

Tour

M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1525	1526	11:41	12:16	35			<i>Lim & Sols.</i>	<i>Conn @ 1526</i>
	27	12:36	1:04	28				<i>W. o. Pump.</i>
	28		1:24	20				<i>17 1/2" Hole</i>
	29		1:51	27				
1530			2:08	17				
	31		2:39	31				
	32		3:30	51			<i>Line Sdy</i>	
	33		4:25	55				<i>Gen Rig & Pump</i>
	34	<i>4:55</i>	5:20	25				<i>New Valve</i>
1535			5:45	25				<i>Rubber</i>
	36		6:05	20				
	37		6:20	15				
	38		6:35	15				
	39		6:55	20				
1540	<i>7:15</i>		7:45	30				
	41		8:15	30				
	42		9:20	65			<i>Trip</i>	
	43	<i>2:55</i>	4:10	75				
	44		5:20	70				
1545			5:55	35				
	46		6:30	35				
	47		7:25	55			<i>TRYING TO LEVEL RIG</i>	
	48	<i>8:25</i>	8:55	30				
	49		9:19	24				
1550			9:35	16				
	51		9:44	9				
	52		10:01	16				
	53		10:15	15				
	54		10:40	25				
	55		10:59	14				<i>Conn. Leak in mud line</i>
								<i>SER RIG</i>

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA
☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 4-1-71
Job North English, Iowa
Hole No. #3
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1555	1556	11:12	11:30	18			Lim & Holo	
	57		12:37	67				
	58		1:15	38			JACKING ON RIG	
	59	2:12	2:30	18				
	60		2:50	20			sew Rig Leveling some	
	61	3:50	4:30	40				
	62		5:30	60				
	63		6:10	40				
	64		6:43	33				
	1565		7:13	30				
	66		7:50	37				
	67		8:25	35				
	68		8:55	30				
	69		9:25	30				
	1570		10:00	35				
	71		10:45	45			welding on std Pipe	
	72		11:10	35				
	73		11:25	15				
	74		11:50	25				
	75		12:18	28				
	76		12:45	27			weld std Pipe	
	77		1:15	30				
	78		1:35	20				
	79		1:50	15				
	1580		2:10	20				
	81		2:30	20				
	82		2:40	10				
	83		2:50	10				
	84		3:05	15				
	85		3:25	20				

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BOX 73 BROOKFIELD, ILL.

Date April 6, 1972
Job North Eng
Hole No. 3
Rig No. W-4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1595	96	4:55	5:05	10			Lime	start drlg 12'4
	97		5:12	7				
	98		5:18	6				April 6, 1972
	99		5:25	7				
1600			5:35	10				
	01		5:45	10				
	02		5:55	10				
	03		6:03	8				
	04		6:10	7				
	05		6:18	8				
	06		6:25	7				
	07		6:33	8				
	08		6:40	7				
	09		6:46	6				
1610			6:54	8				
	11		7:02	8				
	12		7:10	8				
	13		7:17	7				
	14		7:25	7				
	15		7:31	6				
16	7:40	7:45	5					CONN.
	17		7:47	2				
	18		7:56	9				
	19		8:00	4				
1620			8:06	6				
	21		8:11	5				
	22		8:20	9				
	23		8:35	15				
	24		8:50	15				
	25		9:00	10				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date April 6, 1972
Job North Eng
Hole No. 3
Rig No. 7.4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1625	26	9:00	9:07	7			lime	
	27		9:15	8				
	28		9:25	10				
	29		9:35	10				
1630			9:42	7				
	31		9:50	8				
	32		10:00	10				
	33		10:08	8				
	34		10:15	7				
	35		10:21	6				
	36		10:29	8				
	37		10:36	7				
	38		10:41	7				
	39		10:50	9				
1640			11:00	10				
	41		11:08	8				
	42		11:20	12				
	43		11:33	13				
	44		11:44	11				
	45		12:16	16				
46	1:00	1:10	10				working on STD Pipe	
47		1:20	10					
48		1:35	15					
49		1:55	20				CONCRETE	
1650	2:10	2:17	7					
51		2:24	7					
52		2:34	10					
53		2:43	9					
54		2:53	10					
1655		3:10	17					

ADDITIONAL REMARKS, ETC.

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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							
1655	56	3:10	3:20	10				
	57		3:35	15				
	58		3:50	15				
	59		4:02	12				
1660			4:18	16				
	61		4:36	18				
	62		4:55	19				
	63		5:05	10				
	64		5:14	9				
	65		5:24	10				
	66		5:33	9				
	67		5:40	7				
	68		5:50	10				
	69		6:02	12				
1670			6:25	23				Air Pump
	71	6:35	7:00	25				
	72		7:28	28				
	73		7:47	19				
	74		8:00	13				
	75		8:10	10				
	76		8:20	10				
	77		8:30	10				
	78	10:05	10:15	10				See R16; Welding on Mud Lines CONN @ 1679
	79		10:24	9				
1680		10:37	10:46	9				
	81		10:53	7				
	82		11:00	7				Losing Fluid
	83		11:10	10				
	84		11:20	10				
	85		11:28	8				

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BOX 73 BROOKFIELD, ILL.

Date 4-7-72

Job NORTH ENGLISH, IOWA

Hole No. #3

Rig No. Brewster

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1685	1686	11:28	11:39	11			Sdy. DoLo.	
	87		11:50	11				
	88		12:02	12				
	89		12:16	14			LEAK IN MUD LINE + REDOPE UNION.	
1690	12:33	12:45	12					
	91		1:00	15				
	92		1:12	12				
	93		1:20	8				
	94		1:32	12			New Thread HALF UNION ON STAND PIPE	
95	2:05	2:25	20				Line & D.L. VALVE	
	96		2:40	15				
	97		2:50	10				
	98		3:00	10				
	99		3:12	12				
1700			3:30	18				
	01		3:34	14				
	02		3:55	21				
	03		4:16	21				
	04		4:30	14				
1705			4:45	15				
	06		5:00	15				
	07	-	5:15	15				
	08	-	5:30	15				
	09	-	5:45	15				
1710			6:03	18				
	11	7:05	7:25	20				Can't @ 1710
	12		7:47	22				Saw Rig Build
	13		8:12	25				Down
	14		8:35	23				
1715			9:00	25				

ADDITIONAL REMARKS, ETC.

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BOX 73 BROOKFIELD, ILL.

Date April 7 1972
Job North Eng
Hole No. 3
Rig No. 21 4
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1715	16	9:00	9:16	16			lime	
	17		9:33	17				
	18		9:49	16				
	19		10:06	17				
1720			10:30	24			11	
	21		10:47	17				
	22		10:57	10				
	23		11:13	16				
	24		11:23	10				
	25		11:33	10				
	26		11:45	12				
	27		12:00	15				
	28		12:13	13				
	29		12:30	17			11	
1730			12:45	15				
	31		12:55	10				
	32		1:10	15				
	33		1:30	20				
	34		1:47	17				
	35		2:05	18				
	36		2:15	10				
	37		2:35	20				
	38		2:55	20				
	39		3:15	20				
1740			3:45	30			11	
	41		4:07	22				Cor @ 1741'
	42	4:20	4:32	12				
	43		4:46	14				
	44		5:01	15				
	45		5:20	19				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date April 18 1972

Job N English 3rd

Hole No.

Rig No. Brewster

Tour

M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1745	46	5:20	5:40	20			Liner	
	47		6:00	20				
	48		6:23	23				
	49		6:33	10				
1750			6:42	9			Liner & Rods	
	51		7:05	23				
	52		7:12	7				
	53		7:20	8				
	54		7:29	9				
	55		7:40	11				
	56		7:53	13				
	57		8:07	14				
	58		8:18	11				
	59		8:29	11			22 MIN.	
1760			8:40	11			OUT OF FLUID.	
	61	9:02	9:16	14				
	62		9:30	14			OUT OF FLUID. 60 MIN.	
	63	10:30	10:58	28			BOTH JAM NUTS ON PISTON RODS LOOSE	
	64	11:15	11:30	15				
	65		11:44	14				
	66		11:57	13				
	67		12:09	12				
	68		12:18	9				
	69		12:27	9				
1770			12:36	9				
	71		12:45	9				
	72		12:53	8				
	73	1:05	1:14	9				Conn @ 1772
	74		1:22	8				
	75		1:32	10				

ADDITIONAL REMARKS, ETC.

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 4-8-72
Job City of North English
Hole No. #13
Rig No. Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1775	1776	1:32	1:48	16			<u>lime</u>	
	77		2:00	12				
	78		2:11	11				
	79		2:27	16				
	1780		2:47	20				
	81		3:03	16				<u>Wait on</u>
	82	4:30	4:44	14				<u>Water</u>
	83		5:00	16				
	84		5:12	12				
	85		5:23	11				
	86		5:35	12				
	87		5:50	15				
	88		6:05	15				
	89		6:20	15				
	1790		6:35	15				
	91		6:44	9				
	92		7:00	16				
	93		7:12	12				
	94		7:23	11				
	95		7:35	12				
	96		7:48	13				
	97		8:15	27				
	98		8:40	25				
	99		9:04	24				
	1800		9:25	21				
	01	9:45	9:55	10				
	02		10:07	12				
Jordan	03		10:12	5				
	04		10:20	8				
	1805		10:34	14				

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date April 9 1972

Job North Eng

Hole No. 3

Rig No. 714

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1805	06	10:34	10:45	11			lime	
	07		10:53	8			SANDY lime	
	08		10:58	5				
	09		11:04	6				
1810			11:07	3			SAND	
	11		11:12	5				
	12		11:19	8				
	13		11:26	7				
	14		11:33	7				
	15		11:43	10				
	16		11:50	7				
	17		12:02	12				
	18		12:20	18				
	19		12:30	10				
1820			12:35	5				
	21		12:40	5				
	22		12:52	12				
	23		1:04	12				
	24		1:17	13				
	25		1:24	17				
	26		1:36	12				
	27		1:48	12				
	28		2:03	15				
	29		2:15	12				
1830			2:27	12				
	31		2:40	13				
	32		2:55	15				
	33		3:12	17				
34	3:25		3:38	13				
35			3:55	17				

CONN @ 1833

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date April 10 1972

Job 7th Eng.

Hole No. 3

Rig No. 74

Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1835	36	3:55	4:02	7			Sand	
	37		4:10	8				
	38		4:18	8				
	39		4:25	7				
	1840		4:35	10				
	41		4:50	15				
	42		5:07	17				
	43		5:20	13				
	44		5:30	10				
	45		5:35	5				
	46		5:48	13				
	47		6:00	12				
	48		6:10	10				
	49		6:19	9				
	1850		6:25	6			Sand	
	51		6:33	8				
	52		6:41	8				
	53		6:58	7				
	54		7:07	9				
	55		7:14	7			Sand	
	56		7:22	8				
	57		7:32	10				
	58		7:36	4				
	59		7:39	3				
	1860		7:44	5				
	61		7:48	4				
	62		7:52	4				
	63							
	64							
	65	8:05	8:09	4				

zones w/ dol. cement
& sdy. dol.

zones w/ dol. cement
& sdy. dol.

Canal Per Rig.
Survived

ADDITIONAL REMARKS, ETC. _____

APPROVED BY _____ DRILLER

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☐ HOLLAND WELL SERVICE CO.
BOX 73 BROOKFIELD, ILL.

Date 4-9-72

Job North English

Hole No. 3

Rig No. Brewster

Tour

M

M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1865	1866	8:09	8:15	6			Sand	
	67		8:20	5				
	68		8:25	5				
	69		8:30	5				
1870			8:35	5			Sand	
	71		8:40	5				
	72		8:48	8				
	73		8:56	8				
	74		9:04	8			SAND.	
	75		9:12	8				
	76		9:19	7				
	77		9:25	6				
	78		9:32	7				
	79		9:39	7				
1880			9:46	7			SAND.	
	81		9:53	7				
	82		10:01	8				
St. Louis	83		10:11	10				
	84		10:24	13			Sand	
	85		10:35	11				
	86		10:57	12				
	87		11:09	12				
	88		11:21	12				
	89		11:35	14				
1890			11:50	15			Sand & Dolo.	
	91		12:05	15				
	92		12:17	12				
	93		12:30	13				
	94		12:43	13				
1895	12:50	1:01	8					Conn @ 1894

ADDITIONAL REMARKS, ETC.

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BOX 237 DUBUQUE, IOWA

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BOX 73 BROOKFIELD, ILL.

Date 4-9-72
Job NORTH English
Hole No. #3
Rig No. N4 Brewster
Tour M M

DEPTH		TIME START	TIME FINISH	MINUTES	MUD VISCOSITY	MUD WEIGHT	FORMATION	REMARKS
FROM	TO							
1895	1896	1:01	1:09	8			Dolo.	
	97		1:18	9				
	98		1:32	14				
	99		1:47	15				
	1900		2:03	16				
	01		2:19	16				
	02		2:35	16				
	03		2:50	15				
	04		3:04	14				
	05		3:19	15				
	06		3:32	14				
	07		3:49	17				
	08		4:02	13				
	09		4:20	18				
	1910		4:38	18				
	11		4:57	19				
	12		5:15	18				
	13		5:30	15				
	14		5:47	17				
	15		6:05	18				
	16		6:23	18				
	17		6:38	15				
	18		6:53	15				
	19		7:00	17				
	20		7:20	20				
	21		7:35	15				
	22		7:47	12				
	23	8:05	8:20	15				Conn - Sew Rig
	24		8:35	15				
	25		8:50	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 April 9, 1972

Job 102116 En

Hole No. 3 8

Rig No. 2-4

Tour	M	M
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[illegible]

ADDITIONAL REMARKS, ETC.

850-START.

APPROVED BY

DRILLER

MUNICIPAL WELL NO. 3
NORTH ENGLISH, IOWA

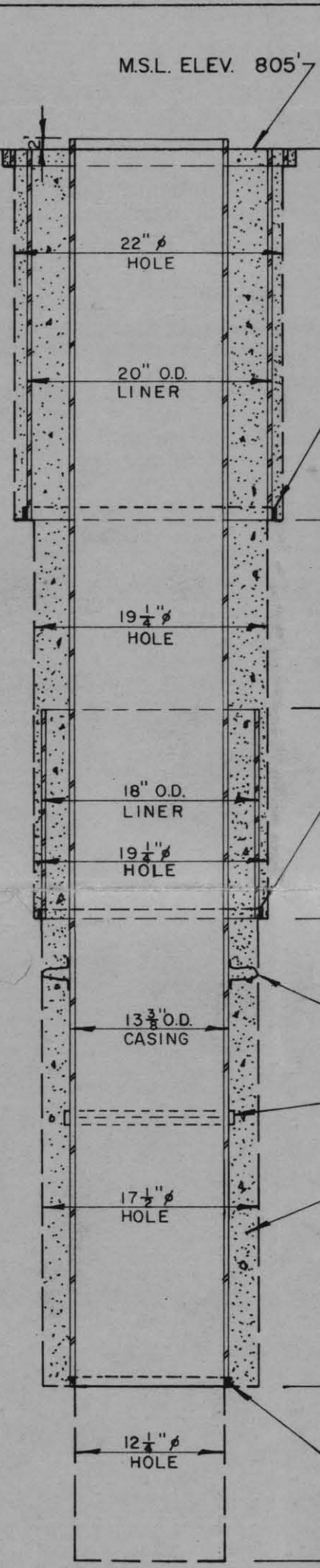
1971

HOWARD R. GREEN, CO.
Consulting Engineers
CEDAR RAPIDS, IOWA

BASE BID - CABLE TOOL DRILLING METHOD

GEOLOGICAL FORECAST						CONSTRUCTION LOG							
SYSTEM	FORMATION	DESCRIPTION	THICKNESS FEET	FROM FEET	TO FEET		TOTAL DEPTH - FEET	LENGTH SECTION - FEET	DIAMETER OF BORE - INCHES	CASING O.D. INCHES	CASING I.D. INCHES	TYPE CASING	WALL THICKNESS
QUARTERNARY	PLEISTOCENE	DRIFT											
MISS.	PROSPECT HILL	SHALE	215	0	215								
	ENGLISH RIV.	SILTSTONE	30	215	245								
DEVONIAN	MAPLEMILL	SHALE	15	245	260								
			240	260	500								
	LIME CR.	LIMESTONE SILTSTONE											
SILU.	CEDAR VALLEY	LIMESTONE DOLOMITE	132	500	632								
	NIAGARAN	LIMESTONE	133	632	765								
ORDOVICIAN	MAQUOKETA	SHALE	25	765	790								
			260	790	1050								
	GALENA	LIMESTONE DOLOMITE											
	DECORAH PLATTEVILLE	LIMESTONE SHALE	185	1050	1235								
	ST. PETER	SANDSTONE	75	1235	1310								
CAMBRIAN	PRAIRE DU CHEIN	LIMESTONE DOLOMITE SANDSTONE	30	1310	1340								
	JORDAN	SANDSTONE											
	ST. LAWRENCE	DOLOMITE	470	1340	1810								
NOTE: GEOLOGICAL FORECAST & ELEVATIONS BASED ON LOG OF WELL NO. 2													

M.S.L. ELEV. 805'



22" ϕ HOLE

20" O.D. LINER

BUILT-UP SHOE

19 1/2" ϕ HOLE

18" O.D. LINER

19 1/2" ϕ HOLE

13 3/4" O.D. CASING

BAKER CENTRALIZERS
100' MAX. SPACING

T & C CASING OPTIONAL

P.C. GROUT
0' TO 1700'

17 1/2" ϕ HOLE

12 1/2" ϕ HOLE

CEMENTING SHOE
BAKER #250-02 OR EQUAL

1940 TOTAL DEPTH

PIPE SPECS. API 5L, GRADE B
54.5#/FT.

SCALE:
HORZ. 1" = 1'-0"
VERT. 1" = 200'

1971

HOWARD R. GREEN, CO.
Consulting Engineers
CEDAR RAPIDS, IOWA

GEOLOGICAL FORECAST

CONSTRUCTION LOG

SYSTEM	FORMATION	DESCRIPTION	THICKNESS FEET	FROM FEET	TO FEET
QUATERNARY	PLEISTOCENE	DRIFT			
MISS.	PROSPECT HILL	SHALE	215	0	215
	ENGLISH RIV.	SILTSTONE	30	215	245
DEVONIAN	MAPLEMILL	SHALE	15	245	260
	LIME CR.	LIMESTONE SILTSTONE	240	260	500
	CEDAR VALLEY	LIMESTONE DOLOMITE	132	500	632
SILU.	NIAGARAN	LIMESTONE	133	632	765
	MAQUOKETA	SHALE	25	765	790
ORDOVICIAN	GALENA	LIMESTONE DOLOMITE	260	790	1050
	DECORAH PLATTEVILLE	LIMESTONE SHALES	185	1050	1235
	ST PETER	SANDSTONE	75	1235	1310
	PRAIRIE DU CHEIN	LIMESTONE DOLOMITE SANDSTONE	30	1310	1340
JORDAN	SANDSTONE		470	1340	1810
ST. LAWRENCE	DOLOMITE		70	1810	1880
NOTE: GEOLOGICAL FORECAST & ELEVATIONS BASED ON LOG OF WELL NO. 2					

M.S.L. ELEV. 805'

The diagram illustrates a well casing profile from the surface down to a total depth of 1940 feet. Key features include:
 - Surface at M.S.L. ELEV. 805'.
 - A 21" diameter hole section from 0' to 215' depth.
 - A 20" O.D. liner section from 215' to 260' depth.
 - A built-up shoe at 260' depth.
 - An 18" diameter hole section from 260' to 765' depth.
 - A Baker Centralizer installed at 100' maximum spacing.
 - A 13 3/8" O.D. casing section from 765' to 1050' depth.
 - T & C casing optional section from 1050' to 1235' depth.
 - A 12.625" I.D. section from 1235' to 1310' depth.
 - PC. GROUT (Pore Filling Cement Grout) applied from 0' to 1700' depth at 15#/GAL. concentration.
 - A cementing shoe Baker #250-02 or equal installed at 1700' depth.
 - A 12 1/4" diameter hole section from 1700' to 1810' depth.
 - Total depth reached at 1940 feet.

PIPE SPECS. A.P.I.-5L GRADE B
54.5#/FT.

SCALE:
HORZ. 1" = 1'-0"
VERT. 1" = 200'