Typed

Log Book

Mailed Rig.

Well No. 1

Farm F. Cuthbertson

Kan (State) Crawford (County)

31 (Section) 29S. (Township) 23E. (Range)

For H.C.O. (Well Owner)

Farm: Crawford County

Kan State; Well No. 1

Elevation

Commenced Spuding Sept 1 19 81

Finished Drilling 19

Driller's Name William J. Bellow

Driller's Name

Driller's Name

Tool Dresser's Name John Porter

Tool Dresser's Name Bill Porter

Tool Dresser's Name

Contractor's Name V W & B

31 29S. 23E.

(Section) (Township) (Range)

Distance from EAST line, 2500 ft.

Distance from SOUTH line, 165' ft.

60' of 7" casing set with 9 sacks cement. 10th Cal. Circle.

CASING AND TUBING RECORD

10" Set		10" Pulled	
8" Set		8" Pulled	
6¼" Set		6¼" Pulled	
4" Set		4" Pulled	
2" Set		2" Pulled	

Rules of Thumb

CEMENTING ANNULUS

2" ID — 6¼" —1 Sack .....5.8'

2" ID — 8" — 1 Sack .....3.1'

3" ID — 8" — 1 Sack .....3.5'

4" ID — 8" — 1 Sack .....4.0'

CAPACITY

2" — 1 BBL. equals.....256'

2½"— 1 BBL. equals.....164'

3" — 1 BBL. equals.....115'

4" — 1 BBL. equals..... 64'

4 ⅞"— 1 BBL. equals..... 43'

6¼"— 1 BBL. equals..... 26'

8" — 1 BBL. equals..... 16'

WATER — CEMENT RATIO

5.5 gals. to 1 sack — 2½ hours to thicken slurry

7.7 gals. to 1 sack — 2 hours to thicken slurry

Thickness of Strata	Formation	Total Depth	Remarks
1	Top Soil	1	6 1/4" Tri core bit
6	Yellow clay	7	
10	Sand Stone	17	Show of oil
	Streak of coal	17	
13	Gray shale	30	
18	Lime Stone	48	water
5	Black Shale	53	
16	Lime Stone	69	
4	Black Shale	73	
1	Lime Stone	74	
1	Silty Light Gray shale	75	
9	Silt Stone	84	Show of oil
5	Silty Gray shale	89	
6	Salt Stone	95	
55	Silty Gray shale	150	
30	Gray shale	180	
3	Calcareous Dark Gray Stone	183	
2	Black Shale	185	
	Streak of coal	185	
8	Gray Shale	193	
2	Calcareous Gray shale	195	
1	Lime Stone	196	
3	Black Shale	199	
1	Calcareous Black Shale	200	
3	Black Shale	203	
5	Gray shale	208	

Thickness of Strata	Formation	Total Depth	Remarks
	Streak of coal	208	
14	Gray shale	222	
8	Black shale	230	2½ cores
1	Lime stone	231	
	Streak of coal	231	Start core 261
28	Silty Gray shale	259	Stop core 308
1	Siltstone	260	
3	Sandstone	263	
1	Shaley sandstone	264	
38	Sandstone	302	Changed to air hammer
2	Shale	304	6" carbide button bit
1	Coal	305	at 261'
10	Gray shale	315	
3	Silt Stone	318	
9	Silty Gray shale	327	
9	Gray shale	336	
1	Coal	337	
2	Silty Gray shale	339	
6	Dark Gray shale	345	
6	Light Gray shale	351	Start core 355
4	Silty Gray shale	355	Stop core 375
2	Broken Sandstone	357	
21	Silty Gray Shale	378	
	Streak of coal	378	
4	Light Gray shale	382	
1	Silt Stone	383	

Thickness of Strata	Formation	Total Depth	Remarks
1	Dark Gray shale	384	
14	Silty Gray shale	398	
3	Light Gray Shale	401	
2	Gray shale	403	
11	Light Gray shale	414	
29	Gray Shale	443	
6	Sand Stone & Shale	449	
	Streak of coal	449	
5	Gray shale	454	
1	Coal	455	
5	Light Gray shale	460	
15	Dark Gray shale	475	
3	Light Gray shale	478	
2	Gray shale	480	
3	Dark Gray Shale	483	
	Streak of coal	483	
6	Light Gray shale	489	
13	Gray shale	502	
1	Silt Stone	503	
5	Gray shale	508	
2	Dark Gray Shale & Pyrite	510	
1	Coal	511	
10	Dark Shale & Pyrite	521	
12	Miss chat	533	
3	Miss Lime & chert	536	
5	[redacted] & chert	541	
	Dolomite		

541

Thickness of Strata	Formation	Total Depth	Remarks
3	Miss Lime Stone	544	
5	Dolomite & chert	549	
1	Miss. Lime Stone	550	
7	Dolomite	557	
2	Dolomite-lime & chert	559	
4	Miss Lime & Stone	563	
12	Dolomite & chert	575	
7	Lime Stone & chert	582	
20	Limestone	602	
6	Shore Creek olites	608	
3	Limestone	611	
13	Limestone & chert	624	Bottom of hole

Short Cuts

TANK CAPACITY

BBLS. (42 gal.) equals D^2x.14xh

D equals diameter in feet.

h equals height in feet.

BARRELS PER DAY

Multiply gals. per minute x 34.2

HP equals BPH x PSI x .0004

BPH — barrels per hour

PSI — pounds square inch

TO FIGURE PUMP DRIVES

* D — Diameter of Pump Sheave
* d — Diameter of Engine Sheave

SPM — Strokes per Minute

RPM — Engine Speed

R — Gear Box Ratio

* C — Shaft Center Distance

D — RPMxd over SPMxR

d — SPMxRxD over RPM

SPM — RPMxD over RxD

R — RPMxd over SPMxD

$$\text{BELT LENGTH} - 2C + 1.57(D + d) + \frac{(D - d)^2}{4C}$$

*Need these to figure belt length

TO FIGURE AMPS: $\frac{\text{WATTS}}{\text{VOLTS}} = \text{AMPS}$

746 WATTS equal 1 HP