Johnson County, KS
Well:Donovan I-21
Lease Owner:D and Z

Town Oilfield Service, Inc.
(913) 837-8400

Commenced Spudding:
03/13/2014

WELL LOG

Thickness of Strata	Formation	Total Depth
5	soil/clay	5
15	sand stone	20
48	shale	68
23	lime	91
9	shale	100
8	lime	108
9	sandy shale	117
18	lime	135
12	shale	147
8	sand and sandy shale	154
17	lime	171
9	shale	180
56	lime	236
21	shale	257
10	lime	267
17	shale	284
7	lime	291
5	shale	296
9	lime	305
34	shale	339
1	lime	340
11	shale	351
24	lime	375
8	shale	383
24	lime	407
4	shale	411
4	lime	415
5	shale	420
6	lime	426
6	shale	432
18	sandy shale	450
7	shale	457
21	sandy shale	478
62	shale	5240
7	sand	547
48	shale	595
11	lime	606
7	shale	613
5	lime	618
17	shale	635

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2	lime	637
6	shale	643
6	lime	649
4	shale	653
3	lime	656
102	shale	758
11	broken sand	769
4	sandy shale	773
101	shale	874
2	sandy lime	876
1	sandy lime	877
1	sand	878
1	sand	879
2	sand	881
1	sand	882
2	broken sand	884
3	sandy shale	887
53	shale	940
23	sand	963
17	shale	980-TD

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

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

* Need these to figure belt length

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

746 WATTS equal 1 HP

Log Book

Well No. 1-21

Farm Donovan

KS (State) Johnson (County)

28 (Section) 14 (Township) 22 (Range)

For DTE Exploration (Well Owner)

Town Oilfield Services, Inc.

1207 N. 1st East
Louisburg, KS 66053
913-710-5400

Duncan Farm: Johnson County

KS State; Well No. 1-21

Elevation 1052

Commenced Spuding 3-13 20 14

Finished Drilling 3-14 20 14

Driller's Name Chad Weaver

Driller's Name

Driller's Name

Tool Dresser's Name Cole Holcom

Tool Dresser's Name

Tool Dresser's Name

Contractor's Name TOS

28 14 22

(Section) (Township) (Range)

Distance from S line, 4620 ft.

Distance from E line, 2365 ft.

3 - sacks

CASING AND TUBING RECORD

10" Set		10" Pulled	
7⅞" Set	22.3'	8" Pulled	
6¼" Set		6¼" Pulled	
4" Set		4" Pulled	
2"/8 Set	919.50	2" Pulled	

CASIN

Feet					

Thickness of Strata	Formation	Total Depth	Remarks
5	soil/clay	5	
15	sandstone	20	
48	shale	68	with some lime seams
23	Lime	91	
9	shale	100	
8	Lime	108	
9	sandyshale	117	
18	Lime	135	
12	shale	147	
8	sand+sandyshale	154	
17	Lime	171	
9	shale	180	
56	Lime	236	
21	shale	257	
10	Lime	267	
17	shale	284	
7	Lime	291	
5	shale	296	
9	Lime	305	
34	shale	339	
1	Lime	340	
11	shale	351	
24	Lime	375	
8	shale	383	
24	Lime	407	
4	shale	411	
4	Lime	415	

Thickness of Strata	Formation	Total Depth	Remarks
		415	
5	shale	420	
6	Lime	426	Hertha
6	shale	432	
18	sand, shale	450	
7	shale	457	
21	sandy shale	478	
62	shale	540	
7	sand	547	show, no oil
48	shale	595	
11	Lime	606	
7	shale	613	
5	Lime	618	
17	shale	635	
2	Lime	637	
6	shale	643	
6	Lime	649	
4	shale	653	
3	Lime	656	
102	shale	758	red bed · 660', with some Lime seams
11	Broken sand	769	little odor, no oil, Brown sand
4	sandy shale	773	
101	shale	874	
2	sandy Lime	876	no oil
1	sandy Lime	877	30% - 40% oil, slight bleeding
1	sand	878	2% - 5% oil
1	sand	879	20% - 40% oil
2	sand	881	60% - 70% oil

881

Thickness of Strata	Formation	Total Depth	Remarks
1	sand	882	<10% - <10% oil
2	Broken sand	884	30% - 40% oil
3	sandy shale	887	no oil
53	shale	940	
23	sand	963	white gray sand, no oil
17	shale	980	TD