

Johnson County, KS
 Well:Knabe 23
 Lease Owner: DE TZ

Town Oilfield Service, Inc.
 (913) 294-2125

Commenced Spudding:
 7/21/16

WELL LOG

Thickness of Strata	Formation	Total Depth
0-16	Soil-Clay	16
48	Shale	64
5	Lime	69
2	Shale	71
15	Lime	86
7	Shale	93
9	Lime	102
8	Shale	110
19	Lime	129
3	Shale	132
17	Sandy Shale	149
29	Lime	178
15	Shale	193
8	Lime	201
9	Shale	210
29	Lime	239
15	Shale	254
10	Lime	264
20	Shale	284
6	Lime	290
4	Shale	294
7	Lime	301
43	Shale	344
25	Lime	369
9	Shale	378
21	Lime	399
4	Shale	403
4	Lime	407
5	Shale	412
6	Lime	418
28	Shale	446
18	Sandy Shale	464
126	Shale	590
5	Lime	595
3	Shale	598
1	Lime	599
9	Shale	608
7	Lime	615
4	Sand	619
12	Shale	631

Short Cuts

TANK CAPACITY

BBLS. (42 gal.) equals $D^2 \times .14 \times h$
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 - $RPM \times d$ over $SPM \times R$

d - $SPM \times R \times D$ over RPM

SPM - $RPM \times D$ over $R \times d$

R - $RPM \times D$ over $SPM \times d$

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

* Need these to figure belt length

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

746 WATTS equal 1 HP

Log Book

Well No. 23

Farm Knabe

KS Johnson
(State) (County)

31 14 22
(Section) (Township) (Range)

For DE & TZ LLC
(Well Owner)

Town Oilfield Services, Inc.

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

Thickness of Strata	Formation	Total Depth	Remarks
0-16	Soil - clay	16	
48	Shale	64	
5	Lime	69	
2	Shale	71	
15	Lime	86	
7	Shale	93	
9	Lime	102	
8	Shale	110	
19	Lime	129	
3	Shale	132	
17	sandy shale	149	
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6	Lime	290	
4	Shale	294	
7	Lime	301	
43	Shale	344	
25	Lime	369	
9	Shale	378	
21	Lime	399	
4	Shale	403	

403

Thickness of Strata	Formation	Total Depth	Remarks
4	Lime	407	
5	Shale	412	
6	Lime	418	Heather
28	Shale	446	
18	sandy shale	464	
126	Shale	590	
5	Lime	595	
3	Shale	598	
1	Lime	599	
9	Shale	608	
7	Lime	615	
4	Sand	619	good oil show
12	Shale	631	
3	Lime	634	
7	Shale	641	
2	Lime	643	
6	Shale	649	
4	Lime	653	
23	Shale	676	red bed
1	Lime	677	
76	Shale	753	
7	Sand	760	broken - good oil show
5	sandy shale	765	
17	Shale	782	
4	Lime	786	
27	Shale	813	
7	Sand	820	broken - slight show



CONSOLIDATED
Oil Well Services, LLC

REMIT TO
Consolidated Oil Well Services, LLC
Dept:970
P.O.Box 4346
Houston, TX 77210-4346

MAIN OFFICE

P.O.Box884
Chanute, KS 66720
620/431-9210, 1-800/467-8676
Fax 620/431-0012

Invoice

Invoice#

808152

Invoice Date: 07/26/16

Terms: Net 30

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D.E. EXPLORATION

P.O. BOX 128
WELLSVILLE KS 66092
USA
7858834057

KNABE #23

Part No	Description	Quantity	Unit Price	Discount(%)	Total
CE0450	Cement Pump Charge 0 - 1500'	1.000	1,500.0000	62.000	570.00
CE0002	Equipment Mileage Charge - Heavy Equipment	25.000	7.1500	62.000	67.93
CE0711	Minimum Cement Delivery Charge	1.000	660.0000	62.000	250.80
WE0853	80 BBL Vacuum Truck (Cement Services)	1.000	100.0000	62.000	38.00
CC5840	Poz-Blend I A (50:50)	118.000	13.5000	62.000	605.34
CC5965	Bentonite	298.000	0.3000	62.000	33.97
CC5326	Sodium Chloride, Salt	238.000	1.0000	62.000	90.44
CC6077	Kolseal	590.000	0.5000	62.000	112.10
CP8176	2 7/8" Top Rubber Plug	1.000	45.0000	62.000	17.10

Subtotal 4,699.15

Discounted Amount 2,913.47

SubTotal After Discount 1,785.68

Amount Due 4,873.77 If paid after 08/25/16

Tax: 66.35

Total: 1,852.03



CONSOLIDATED
Oil Well Services, LLC

6271
6175

TICKET NUMBER 50156
LOCATION Ottawa KS
FOREMAN Fred Maden

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
INVOICE # 808152 EMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
7-22-16	2355	Kuabe # 23	NE 31	14	22	JO
CUSTOMER			TRUCK #	DRIVER	TRUCK #	DRIVER
DE + TZ LLC % DE Exploration			712	Fred Mad		
MAILING ADDRESS			368	Ar1 Mad		
P.O. Box 128			369	Mik Hoa		
CITY	STATE	ZIP CODE	503	Kei Dat		
Wellsville	KS	66092				

JOB TYPE Long string HOLE SIZE 5 7/8 HOLE DEPTH 960 CASING SIZE & WEIGHT 2 7/8 EOE
CASING DEPTH 942 DRILL PIPE Baffle in TUBING @ 910' OTHER _____
SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/sk _____ CEMENT LEFT in CASING 32' + Plug
DISPLACEMENT 5.29 BBL DISPLACEMENT PSI _____ MIX PSI _____ RATE 48 BPM

REMARKS: Hold Safety Meeting. Establish pump rate. Mix + Pump 100# Gel
Flush. Mix + Pump 118# SKS Poz Blend I A Cement 2% Gel 5% Salt
5# Kal Seal/sk. Cement to surface. Flush pump + lines clean.
Displace 2 1/2" Rubber plug to Baffle in casing. Pressure to
600# PSI. Release pressure to set float valve. Shut in casing.

T.O.S Drilling - (Wes)

Fred Maden

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0450	1	PUMP CHARGE	368	1500.00
CE0002	25	MILEAGE	368	178.25
CE0711	Minimum	Top Miles Delivery	563	660.00
WE0853	1 hr	80 BBL Vac Truck	369	100.00
		Sub Total		2438.25
		Less 62%		1512.03
				926.22
CC5840	118 SKS	Poz Blend I A Cement		1593.00
CC5965	226#	Bentonite Gel		89.40
CC5326	238#	Salt		238.00
CC6077	590#	Kal Seal		295.00
CP8176	1	2 1/2" Rubber Plug		45.00
		Sub Total		2260.40
		Less 62%		1401.45
				858.95
		7.725% TAX		66.35
		ESTIMATED TOTAL		1852.03

9262

Ravin 3737

AUTHORIZATION Buyer MCM TITLE _____ DATE (48732)

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form