

Johnson County, KS
 Well: I-2-4
 Lease Owner: Thomas C

TDR Construction, INC.
 (913) 837-8400

Commenced Spudding:
 12/17/2018

WELL LOG

Thickness of Strata	Formation	Total Depth
0-14	soil-clay	14
30	lime	44
7	shale	51
9	lime	60
7	shale	67
16	lime	83
18	shale	101
71	lime	172
32	shale	204
8	lime	212
20	shale	232
6	lime	238
4	shale	242
10	lime	252
33	shale	285
1	lime	286
9	shale	295
27	lime	322
6	shale	328
24	lime	352
4	shale	356
2	lime	358
7	shale	365
7	lime	372 Hertha
172	shale	544
5	lime	549
11	shale	560
6	lime	566
17	shale	583
3	lime	586
5	shale	591
11	lime	602
24	shale	626
2	lime	628
202	shale	830
9	sand	839 solid-good oil show
3	sandy shale	842 no oil
3	sand & sandy shale	845 broken-good oil show
95	shale	940 TD

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 $SPM \times D$

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

* Need these to figure belt length

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

746 WATTS equal 1 HP

Log Book

Well No. I-2-4

Farm Thomas C

KS Johnson
(State) (County)

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

For ST Petroleum inc
(Well Owner)

15-091-24471

Town Oilfield Services, Inc.

1207 N. 1st East

Louisburg, KS 66053

913-710-5400

Thomas C Farm: Johnson County

KS State; Well No. I-2-4

Elevation 1040

Commenced Spuding 12-17 .20 18

Finished Drilling 12-18 .20 18

Driller's Name Wesley Dollard

Driller's Name Ryan Ward

Driller's Name _____

Tool Dresser's Name _____

Tool Dresser's Name _____

Tool Dresser's Name _____

Contractor's Name TOS

14 14 22

(Section) (Township) (Range)
Distance from S line, 2160 ft.

Distance from E line, 3430 ft.

4 sacks
10 hrs
5 5/8 borehole
2 7/8 casing

CASING AND TUBING RECORD

10" Set _____ 10" Pulled _____
8" Set _____ 8" Pulled _____
6 1/4" Set 21 6 1/4" Pulled _____
4" Set _____ 4" Pulled _____
2" Set _____ 2" Pulled _____

CASING AND TUBING MEASUREMENTS

Feet	In.	Feet	In.	Feet	In.
894		Baffle		2 7/8	
926		Float			
940		TD			

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9	Lime	60	
7	shale	67	
16	Lime	83	
18	shale	101	
71	Lime	172	
32	shale	204	
8	Lime	212	
20	shale	232	
6	Lime	238	
4	shale	242	
10	Lime	252	
33	shale	285	
1	Lime	286	
9	shale	295	
27	Lime	322	
6	shale	328	
24	Lime	352	
4	shale	356	
2	Lime	358	
7	shale	365	
7	Lime	372	Hertha
172	shale	544	
5	Lime	549	
11	shale	560	

560

Thickness of Strata	Formation	Total Depth	Remarks
6	Lime	566	
17	Shale	583	
3	Lime	586	
5	Shale	591	
11	Lime	602	
24	Shale	626	
2	Lime	628	
202	Shale	830	
9	sand	839	solid- good oil show
3	sandy shale	842	no oil
3	sand & sandy shale	845	broken- good oil show
45	Shale	940	TD



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

12218

12094

TICKET NUMBER 55488

LOCATION Ottawa, KS

FOREMAN Jim Green

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
12-18-18	7532	Thomas C#1-2-4	SW 14	14	22	50
CUSTOMER <u>ST Petroleum</u>			TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS <u>18800 Sunflower Rd</u>			<u>669</u>	<u>Jim Green</u>		
CITY <u>Edgerton</u>			<u>467</u>	<u>Kay Corl</u>		
STATE <u>KS</u>			<u>675</u>	<u>Kay Corl</u>		
ZIP CODE <u>66021</u>			<u>548</u>	<u>Ala Mod</u>		

JOB TYPE Long string HOLE SIZE 5 1/8" HOLE DEPTH 940' CASING SIZE & WEIGHT 2 7/8" EUE
 CASING DEPTH 926' DRILL PIPE Butt 894' TUBING _____ OTHER _____
 SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/ek _____ CEMENT LEFT IN CASING _____
 DISPLACEMENT _____ DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Held safety meeting. Mix and pump 100# Gel to flush hole. Mix and pump 126 slt Pozblend IA with 2% gel & 1/4# FLO-seal. Circulated cement to surface. Flush Pump clear of cement. Pump 2 1/2" rubber plug to total depth of casing. Pressure well up to 800 PSI. Held 800 PSI for a 30 min MIT. Well held set float

Jim Green Held 800 PSI on well for a 30 min MIT
12-18-18 Held good

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0450	1	PUMP CHARGE	1500 ⁰⁰	
CE0002	30	MILEAGE	214.52	
CE0711	min	Ten Mileage	1660 ⁰⁰	
WE0858	2 hrs	VAL TK	200 ⁰⁰	
			2524.52	
		Less-40%	1029.80	
				1594.72
CC5840-18988	126 slt	Poz Blend IA Cement	1701. ⁰⁰	
CC4965	312 #	Gel	936 ⁰⁰	
CC6075	32 #	FLO-Seal	64 ⁰⁰	
CP8170	1	2 1/2" Rubber Plug	450 ⁰⁰	
			1903.60	
		Less-40%	761.41	
				1142.19
		SCANNED		
		SCANNED		
		7,925 ⁰⁰		
		SALES TAX	91.03	
		ESTIMATED TOTAL		2772.95
		DATE		12/18/18

AUTHORIZATION [Signature] 12-18-18 TITLE Jim Green 12-18-18 DATE 12/18/18

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.

TERMS AND CONDITIONS

ATTENTION: THESE TERMS AND CONDITIONS CONTAIN INDEMNITY PROVISIONS FOR DAMAGE TO PERSONS AND PROPERTY.

All Services or Products provided by QES Pressure Pumping LLC (its a Consolidated Oil Well Services LLC) are subject to these Terms and Conditions unless superseded by a Master Service Agreement signed by the parties. In the event Customer does not accept these Terms and Conditions as written, Customer must request a Master Service Agreement from QES' Contracts Administration Department at naga@qesp.com

The operations, services, supplies, materials, personnel or parts to be provided, "Services or Products" as applicable by QES Pressure Pumping LLC ("QES"), will be provided to you as customer ("Customer") in accordance with the following terms and conditions ("Agreement"). QES and Customer may be referred to as "Party" or "Parties".

1. **Price and Taxes.** Customer will pay QES for the Services or Products in accordance with QES' quoted rates which exclude applicable taxes or process, license fees. Customer shall pay all applicable taxes and process license fees related to the Services and/or Products. QES' prices are subject to change without notice.

2. **Terms of Payment.** Customer will pay QES cash in advance for Services and Products unless QES has approved credit prior to the performance of the Services and/or delivery of the Products. Credit terms for approved accounts require full payment of the invoice amount within 30 days from the date of invoice. All invoices not paid within 30 days will be charged an interest rate of 1.5% per month or the maximum rate allowed under applicable state law, whichever is higher. Customer will be responsible for any fees incurred by QES in the collection of any amounts owed to QES including but not limited to attorney's fees, except collection fees exist.

3. **Proof of Services or Delivery of Products.** QES will furnish verification of proof of Services performed and Product delivered to Customer's representative at the time of performance of the Services or Product delivery. Customer agrees to sign and return such verification indicating Customer's acceptance of the Services or Product.

4. **Ownership or Control.** All liability and responsibility of QES ceases when (1) Products are delivered to the Customer by QES and no longer in the care, custody, and control of QES or (2) when the carrier receives the Products and/or equipment. QES will not be responsible for loss or damage to Products in transit or for delay of orders in following goods. In case of shortage, loss, or damage to or apparent damage to the Customer's responsibility to secure written acknowledgment from the carrier before Customer accepts delivery. And finally, QES will not be liable for any damage or delay in delivery of customer's due to a Force Majeure as defined below. As a condition of the Customer, their party, partner, or affiliate during delay, responsibility of performance of any other third party remains outside the control of QES. In the event of a delay caused by the affected, the delivery or completion date will be extended for a period equal to any such delay, and the purchase or service will remain void or voidable as a result thereof.

5. **Well or Service Site Conditions.** Customer, having custody and control of the well under service site and having superior knowledge of the same and the conditions surrounding them, warrant that the well and/or service site will be in proper condition to receive and accommodate Services and Products. QES' request. Customer will provide documentation to verify that the well or service site is acceptable to support the Services and the delivery of Products. Customer also warrants that QES' personnel and equipment will be able to safely access the well and service site and that any special equipment or site improvements required for such access will be the responsibility of Customer, unless otherwise agreed to by the parties.

6. **Chemical Handling and Hazardous Materials.** Customer agrees that for any waste created as part of the Services, Customer will be considered the generator for purposes of any applicable laws or regulations pertaining to the transportation, storage and handling of chemicals and hazardous materials.

7. **Data, Data Transmission and Storage.** QES does not warrant or guarantee the accuracy of any research analysis, survey, or other data generated for the Services. QES is not responsible for the accidental or intentional information of such data by third parties and it is the responsibility of the Customer to safeguard such data against loss including any need to retain digital or paper copies for storage.

8. **WARRANTIES-LIMITATION OF LIABILITY**

a) QES warrants that the Services and Products will be free from defects in materials and workmanship (a) as performed in a good and workmanlike manner, in accordance with good industry servicing practices; and (b) conform to the plans, specs and technical information provided in writing by Customer until the Services or Products are accepted by Customer or QES' contractual obligations are met. In the event that Customer receives a defect in the Services or Products within the warranty period specified above, Customer will notify QES of such defect. To the extent that QES confirms that the Services or Products are defective, QES's liability and Customer's exclusive remedy in any cause of action, whether in tort, contract, breach of warranty or otherwise, arising out of the sale or use of any Services or Products is expressly limited to: (a) QES' option, the replacement of such Services or Products upon their return to QES or (b) a credit to Customer for the full price paid by Customer for the defective segment of the Services or Products upon their return to QES. In the case of Products or parts not of QES' manufacture, QES liability will be limited to the extent of its recovery from the manufacturer of such products or parts under its liability to QES. QES will not be liable for any damages, claims, losses or expenses of Customer resulting from such defects or for damages resulting from delays, loss of time, or other direct, indirect, incidental, punitive or consequential damages of any kind. QES will not be responsible for, or the effect of Services that have been in any way tampered with or altered by a third party. QES will not be liable for violations of QES. (i) failures due to lack of compliance with manufacturer maintenance procedures, and (ii) products requiring replacement due to normal wear and tear.

b) EXCEPT FOR THE WARRANTIES EXPRESSLY STATED ABOVE, THERE ARE NO OTHER WARRANTIES. THE PARTIES EXPRESSLY EXCLUDE AND CUSTOMER WAIVES ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

c) IN NO EVENT WILL QES' ENTIRE LIABILITY (IN TORT, CONTRACT, WARRANTY, INFRINGEMENT OR OTHERWISE) TO CUSTOMER EXCEED THE PURCHASE PRICE ACTUALLY PAID BY CUSTOMER FOR THE SERVICES OR PRODUCTS THAT GIVE RISE TO A DISPUTE. THIS PROVISION WILL SURVIVE ANY TERMINATION OF THIS AGREEMENT.

9. **INDEMNIFICATION AND WAIVER OF CONSEQUENTIAL DAMAGES**

9.1 For purposes of this Section 9, the following definitions will apply: "QES Group" means QES Pressure Pumping LLC, its parent company and affiliated subsidiaries and its and their officers, directors, employees, contractors, subcontractors and invitees. "Customer Group" means Customer, its parent (if any), subsidiary and affiliated companies, associates, co-venturers, partners, and any entity with whom Customer has an economic interest and/or respect to the Services, including Customer's joint interest owners and partners and its and their officers, directors, employees, contractors (not including QES), subcontractors and invitees.

9.2 QES INDEMNITY. QES AGREES TO PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, ARISING IN CONNECTION WITH THE SERVICES, ON ACCOUNT OF BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF QES GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF QES GROUP.

9.3 CUSTOMER INDEMNITY. CUSTOMER AGREES TO PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, ARISING IN CONNECTION WITH THE SERVICES, ON ACCOUNT OF BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF CUSTOMER GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF CUSTOMER GROUP.

9.4 WELL. CUSTOMER WILL RELEASE, PROTECT, DEFEND, AND INDEMNIFY QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER IN THE EVENTS OF: (i) LOSS OR DAMAGE TO ANY GEOLOGICAL FORMATION, STRATA OR OIL OR GAS RESERVOIR OR MINERAL OR WATER RESOURCE BENEATH THE SURFACE OF THE LAND OR WATER, (ii) LOSS OR DAMAGE TO THE HOLE OR WELL, (iii)

IMPAIRMENT OF PROPERTY RIGHTS OR OTHER INTERESTS IN OR TO OIL, GAS, MINERAL OR WATER RESOURCES, AND (iv) REGAINING CONTROL OF ANY WILD WELL OR OUT OF CONTROL WELL, UNDERGROUND OR ABOVE THE SURFACE, INCLUDING REMOVAL OF WRECK, DEBRIS, EQUIPMENT, AND HAZARDOUS MATERIALS AND REMEDIATING ENVIRONMENTAL DAMAGE.

9.5 POLLUTION RESPONSIBILITY. Subject to paragraphs 9.2 and 9.3, it is understood and agreed between Customer and QES that the responsibility for pollution shall be as follows:

(a) QES WILL ASSUME RESPONSIBILITY FOR CONTROL AND REMOVAL OF AND WILL PROTECT, DEFEND AND INDEMNIFY CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND OF CHARACTER ARISING FROM POLLUTION OR CONTAMINATION WHICH ORIGINATES ABOVE THE SURFACE OF THE LAND OR WATER FROM THE EQUIPMENT OF ANY MEMBER OF QES GROUP MAINTAINED IN QES GROUPS' CARE, CUSTODY AND CONTROL, AND ARISING FROM THE PERFORMANCE OF THE SERVICES.

(b) CUSTOMER WILL ASSUME RESPONSIBILITY FOR CONTROL AND REMOVAL OF AND WILL PROTECT, DEFEND AND INDEMNIFY QES GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER ARISING FROM POLLUTION OTHER THAN THAT DESCRIBED IN SECTION 9.5(A) ABOVE, WHICH MAY OCCUR DURING THE CONDUCT OF OPERATIONS HEREUNDER, INCLUDING BUT NOT LIMITED TO, POLLUTION RESULTING FROM FIRE, BLOWOUT, CRATERING, SEEPAGE OR OTHER UNCONTROLLED FLOW OF OIL, GAS OR OTHER SUBSTANCE.

9.6 WAIVER OF CONSEQUENTIAL DAMAGES. NOTWITHSTANDING ANY PROVISION TO THE CONTRARY, CUSTOMER AND QES FURTHER AGREE THAT NEITHER PARTY WILL BE LIABLE TO THE OTHER OR EACH OTHER'S RESPECTIVE GROUP FOR ANY CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFIT, LOSS OF PRODUCTION, REVENUE, OR ANTICIPATED BUSINESS "/>LOSSES". CUSTOMER AGREES TO INDEMNIFY AND HOLD QES GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS FOR SUCH LOSSES ASSERTED BY MEMBERS OF CUSTOMER GROUP. QES AGREES TO INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS FOR SUCH LOSSES ASSERTED BY MEMBERS OF QES GROUP.

9.7 EXCEPT AS OTHERWISE EXPRESSLY LIMITED BY THIS AGREEMENT OR BY LAW, ALL RELEASES, INDEMNITY OBLIGATIONS AND OTHER LIABILITIES ASSUMED UNDER THIS AGREEMENT WILL BE WITHOUT LIMIT AND WITHOUT REGARD TO THE CAUSE OR CAUSES, INCLUDING, WITHOUT LIMITATION, PREEXISTING CONDITIONS, UNSEAWORTHNESS, STRICT LIABILITY, WILLFUL MISCONDUCT, AND THE SOLE JOINT, GROSS, OR CONCURRENT NEGLIGENCE OF ANY PARTY.

9.8. Each Party hereunder agrees to support its indemnity obligations with liability insurance coverage with limits of liability not less than ten million dollars (\$10,000,000). It is the express intention of the Parties that the indemnities contained herein apply to the fullest extent permitted by applicable law, and in no event will a Party's indemnity obligation be limited to the amount of insurance carried by each Party.

THIS SECTION 9 WILL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT.

10. **Assignment.** All the above portions of this Party, its successors and assigns, whether or not required by this Agreement, shall to the extent of the laws and liabilities assumed by such party, to the other party, shall be an integral part of the contract for work under this Agreement. QES' and its subcontractors' and invitees' obligations under this Agreement shall be limited to the other party group and shall be primary and not secondary to any insurance of the other party group.

11. **Force Majeure.** Except the obligation to make payments when due, neither Party nor its subcontractors will be liable nor deemed to be in breach of this Agreement for any delay or failure in performance caused by the acts of God, war, or military authority, strike of a carrier or any governmental actions, acts of public enemy, war, insurrection, riot, strikes or civil disturbances, floods, drought, earthquakes, natural or man-made events, or unusual events, natural or man-made shortages, or any similar or dissimilar cause beyond the reasonable control of a Party. The Party so affected will be excused as such a cause of force majeure promptly notify the other Party in writing upon learning the occurrence of the event and the other Party will make every effort to promptly resume performance of the work under the Agreement. In the event Customer's obligations are excused, QES will be compensated at the standard daily rate for the materials and personnel that are standing idle as a consequence of the force majeure occurrence until Customer terminates the work order or work resumes.

12. **Governing Law.** This Agreement will be governed by the laws of the state of Texas with it bound to its conflicts of law provisions. The Parties agree to submit to the exclusive jurisdiction of the federal or state courts located in Houston, Harris County, Texas with respect to any and all disputes that arise out of or are related in any way to the subject matter of this Agreement. This Section 12 will survive the termination or expiration of this Agreement.

13. **Independent Contractor.** QES will be an independent contractor with respect to the Services performed and neither QES nor any employee of QES will be deemed for any purpose to be the independent agent, servant, borrowed servant or representative of Customer.

14. **Severability.** In the event any provision of this Agreement is inconsistent with or contrary to any applicable law, rule or regulation, this provision will be deemed modified to the extent necessary to comply and the remaining terms, as modified, will remain in full force and effect.

15. **Waiver.** A waiver on the part of either Party of any breach of any term, provision or condition of this Agreement will not constitute a precedent and not bind either Party hereto to a waiver of any subsequent or other breach of this Agreement or any other term, provision or condition of this Agreement.

16. **Entire Agreement.** This Agreement contains the entire agreement of the Parties with regard to the subject matter hereof and supersedes any prior oral and written agreements, contracts, understandings or arrangements between the Parties relating to the subject matter hereof. No time limit or expiration of this Agreement will be effective unless this Agreement is signed by an authorized representative of each Party. If the Parties enter into a Master Service Agreement, not any term or condition hereof shall conflict with the provisions of such Master Service Agreement to be deemed in full.