



**Discovery
Drilling**

P.O. Box 763 • Hays, KS 67601 • OFFICE (785) 623-2920 • CELLULAR (785) 635-1511

DRILLER'S LOG

Operator: Hupfer Operating, Inc. Lic# 30380 Contractor: Discovery Drilling Co., Inc. LIC#31548
P.O. Box 3912 PO Box 763
Shawnee, KS 66203 + 0912 Hays, KS 67601

Lease: Knop "A" # A-3 Location: 675 FSL - 350 FEL
SW?NE/SE/SE
Section 32/ 19S/ 11W
Bartob County, KS

Loggers Total Depth: 3342' API#15- 009-26,222-00-00
 Rotary Total Depth: 3339' Elevation: 1776 GL - 1784 KB
 Commenced: 8/21/2018 Completed: 8/27/2018
 Casing: 8 5/8" @ 257'W/270sks Status: Oil Well
5 1/2" @ 3330'W?145sks

**DEPTHS & FORMATIONS
(All from KB)**

Surface, Sand & Shale	<u>0'</u>	Shale	<u>551'</u>
Dakota Sand	<u>154'</u>	Shale & Lime	<u>975'</u>
Shale	<u>207'</u>	Shale	<u>1382'</u>
Cedar Hill Sand	<u>226'</u>	Shale & Lime	<u>2360'</u>
Red Bed Shale	<u>372'</u>	Lime & Shale	<u>3042'</u>
Anhydrite	<u>538'</u>	RTD	<u>3339'</u>
Base Anhydrite	<u>551'</u>		

STATE OF KANSAS))
) ss
 COUNTY OF ELLIS))

Thomas H. Alm of Discovery Drilling states that to the best of his knowledge the above and foregoing is a true and correct log of the above captioned well.

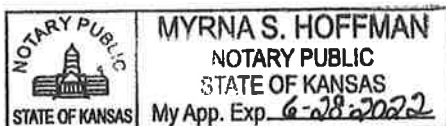
 Thomas H. Alm

Subscribed and sworn to before me on 8-30-2018

My Commission expires: 6-28-2022

(Place stamp or seal below)

 Notary Public



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 227

Date	8-21-18	Sec.	32	Twp.	19	Range	11	County	Barton	State	Ks	On Location		Finish	7:30pm
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Location Ellinwood - IE, N + SW to Rig

Lease	<u>Knop</u>		Well No.	<u>A-3</u>	Owner		
Contractor	<u>Discovery #2</u>				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.		
Type Job	<u>Surface</u>				Charge To <u>Hypter operating</u>		
Hole Size	<u>12 1/4"</u>	T.D.	<u>262'</u>		Street		
Csg.	<u>8 5/8"</u>	Depth	<u>262'</u>		City		
Tbg. Size		Depth			State		
Tool		Depth			The above was done to satisfaction and supervision of owner agent or contractor.		
Cement Left in Csg.	<u>15'</u>	Shoe Joint	<u>15'</u>		Cement Amount Ordered <u>285 80% 30% 20% 20% 20% 20%</u>		
Meas Line		Displace	<u>15 3/4 BLS</u>		<u>1/2 flo</u>		

EQUIPMENT

Pumptrk	<u>16</u>	No.	<u>16</u>	Cement Helper	<u>David</u>	Common	<u>215</u>
Bulktrk	<u>9</u>	No.	<u>9</u>	Driver	<u>James</u>	Poz. Mix	<u>55</u>
Bulktrk	<u>p.u.</u>	No.	<u>p.u.</u>	Driver	<u>Rick</u>	Gel.	<u>5</u>
				Driver		Calcium	<u>10</u>

JOB SERVICES & REMARKS

Remarks:	<u>Cement did Circulate</u>	Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	<u>150#</u>
Centralizers		Kol-Seal	
Baskets		Mud CLR 48	
D/V or Port Collar	<u>Mixed 200 sk</u>	CFL-117 or CD110 CAF 38	
		Sand	
		Handling	<u>285</u>
		Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
	<u>150# plug</u>
Pumptrk Charge	<u>Surface</u>
Mileage	<u>15</u>

[Handwritten Signature]

X
Signature

Tax	
Discount	
Total Charge	

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 935

Cell 785-324-1041

Date	8-27-18	Sec.	32	Twp.	19	Range	11	County	Barton	State	Ks	On Location		Finish	7:45 PM
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Location Ellinwood - 1E, N + W to well

Lease Knop Well No. A #3 Owner

Contractor Discovery #2 To Quality Oilwell Cementing, Inc.

Type Job Longstring You are hereby requested to rent cementing equipment and furnish

Hole Size 5 7/8" T.D. 3339' Charge To Hupfer Operating

Csg. 5 1/2" New 17# Depth 3330.28' Street

Tbg. Size Depth City State

Tool Depth The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 23.35' Shoe Joint 23.35' Cement Amount Ordered 190 @ Pro-C 10% Salt 5% Gilsomite

Meas Line Displace 76 3/4 BLS 700 gal mud Clear 48

EQUIPMENT

Pumptrk 16 No. Cementer David Common 190 @ pro-c

Bulktrk 15 No. Helper James Poz. Mix

Bulktrk p.u. No. Driver Rick Gel.

JOB SERVICES & REMARKS

Remarks: Salt 15

Rat Hole Flowseal

Mouse Hole Kol-Seal 750 #

Centralizers 2, 4, 6, 10, 12, 14, 16, 18 Mud CLR 48 700 gal

Baskets 8 CFL-117 or CD110 CAF 38

D/V or Port Collar pipe on bottom break Sand

Circulation Pump 700 gal mud Clear Handling 212

48, plug Rathole w/ 30sx, plug mousehole Mileage

w/ 15sx, Hook to 5 1/2" Casing + mix

FLOAT EQUIPMENT

145 sx Cement Shut down, wash pump Guide Shoe packer shoe

+ lines Displaced plug w/ 76 3/4 BLS H2O. Centralizer 7

Released + held Baskets 1

AFU Inserts

Lift pressure 600 # Float Shoe 1

Land plug to 1500 # Latch Down

Thanks

Pumptrk Charge Pro & String

Mileage 15

X Signature [Signature] Tax

Discount

Total Charge