

JAMES C. MUSGROVE

Petroleum Geologist, LLC
212 Main Street
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Mai Oil Operations
Miller Farms #3
NE-NE-SW-NE (1465' FNL & 1460'
Section 33-15s-13w
Barton County, Kansas

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5 1/2" Disposal Casing Set

Contractor: Southwind Drilling Co. (rig #3)
Commenced: November 17, 2014
Completed: November 23, 2014
Elevation: 1981' K.B., 1979' D.F., 1973' G.L.
Casing program: Surface; 8 5/8" @ 515
Production, 5 1/2" @ 3675'
Sample: Samples saved and examined 3000' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 3000' to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were four (4) Drill Stem Tests ran by Trilobite Testing Co.
Electric Log: By Nabors Completion and Production Services Co.; Dual Induction,
Compensated Density/Neutron Log and Micro.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	938	+1043
Base Anhydrite	968	+1013
Heebner	3130	-1149
Toronto	3148	-1167
Brown Lime	3204	-1223
Lansing	3214	-1233
Base Kansas City	3419	-1438
Arbuckle	3427	-1446
Rotary Total Depth	3675	-1694
Log Total Depth	3676	-1695

All tops and zones corrected to Electric Log Measurement

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

- 3072-3090' Limestone, gray, tan, finely crystalline, few fossiliferous, poor visible porosity, cherty in part, no shows.
- 3094-3114' Limestone, cream, tan, finely crystalline, oolitic/fossiliferous, poor inter-crystalline porosity, dark brown spotty stain, no free oil and no odor in fresh samples.

TORONTO SECTION

- 3147-3160' Limestone, white, finely crystalline, poor visible porosity, chalky, few cherty, no shows.

LANSING SECTION

- 3204-3215' Limestone, tan, gray, finely crystalline, few fossiliferous, poor visible porosity, plus gray/cream chert.
- 3236-3245' Limestone, cream, tan, finely crystalline, oolitic, fossiliferous, sub-oomoldic, chalky, poor visible porosity, brown stain, no free oil and faint odor.
- 3261-3270' Limestone, cream, tan, finely crystalline, oolitic, poor visible porosity, dense, no shows.
- 3274-3290' Limestone, cream, tan, finely crystalline, oolitic in part, sub-oomoldic, poor visible porosity, chalky, no show of oil and faint odor in samples.
- 3290-3306' Limestone, white, cream, finely oolitic, fair pinpoint and fine vuggy porosity, chalky, trace spotty brown stain, no free oil and no odor in fresh samples.
- 3346-3352' Limestone, white, light gray finely crystalline, oolitic, oomoldic, fair oomoldic porosity, golden brown to dark brown stain, show of free oil and good odor.
- 3360-3366' Limestone, white, cream, oolitic, poor to fair vuggy type porosity, light brown stain, show of free oil and fair odor in fresh samples.
- 3378-3390' Limestone, white, cream, finely crystalline, oolitic, poor to fair inter-crystalline to vuggy type porosity, golden brown to dark brown stain, show of free oil and good odor in fresh samples.

Drill Stem Test #1 **3328-3397**

Times: 30-45-30-60

Blow: Strong

Recovery: 1837' very slightly oil and gas cut muddy water
(10% gas; 5% oil; 75% water; 10% mud)

Pressures: ISIP 894 psi
FSIP 902 psi
IFP 322-743 psi
FFP 768-872 psi
HSH 1679-1611 psi

ARBUCKLE SECTION

3426-3435' Dolomite, white, cream, light gray, finely crystalline, poor to fair inter-crystalline porosity, golden brown stain, show of free oil and good odor in fresh samples.

Drill Stem Test #2 **3398-3435**

Times: 30-45-30-60

Blow: Strong

Recovery: 15' clean oil
55' muddy oil
(75% oil; 25% mud)

Pressures: ISIP 186 psi
FSIP 176 psi
IFP 38-42 psi
FFP 50-53 psi
HSH 1702-1661 psi

3435-3445' Dolomite, light gray/cream, fine to medium crystalline, fair inter-crystalline porosity, brown stain, show of free oil and fair odor, trace pyrite and white boney chert.

Drill Stem Test #3 **3398-3445**

Times: 30-45-45-60

Blow: Fair to good

Recovery: 5' clean oil
60' heavily oil cut water
(40% oil; 10% water; 50% mud)

Pressures: ISIP 199 psi
FSIP 174 psi
IFP 40-45 psi
FFP 48-59 psi
HSH 1715-1651 psi

3445-3455' Dolomite, buff, fine to medium crystalline, scattered inter-crystalline porosity, dark brown to black stain trace of free oil and faint odor in fresh samples.

Drill Stem Test #4 **3438-3455**

Times: 30-30-30-30

Blow: Weak

Recovery: 10' very slightly oil cut mud
(1% oil; 99% mud)

Pressures: ISIP 643 psi
 FSIP 348 psi
 IFP 21-22 psi
 FFP 22-23 psi
 HSH 1702-1650 psi

3458-3470' Dolomite, gray, fine to medium crystalline, poor to fair inter-crystalline porosity, dark brown stain, to black stain, weak show of free oil and vey faint odor.

3470-3500' Dolomite, cream, tan, fine to medium crystalline, sucrosic in part, poor inter-crystalline porosity, trace spotty stain, no free oil and trace white, cream chert.

3500-3540' Dolomite, tan finely crystalline, sucrosic, poor porosity, trace white/tan chert, no shows.

3540-3570' Dolomite, cream, light gray, fine to medium crystalline, poorly developed inter-crystalline porosity, cherty in part, no shows.

3570-3600' Dolomite, as above.

3600-3620' Dolomite, white, light gray, fine to medium crystalline, few slightly oomoldic and chalky luster, no shows.

3620-3640' Dolomite, white, light gray, medium crystalline, fair inter-crystalline porosity, chalky luster, trace white/cream, boney chert.

3640-3660' Dolomite, white, cream, fine and medium crystalline, scattered porosity, plus white, tan, boney, chert, few glauconitic.

3660-3675' Dolomite, white/light gray, fine to medium crystalline, scatter inter-crystalline porosity, sandy in part, glauconitic, no shows.

Rotary Total Depth 3675
Log Total Depth 3676

Mai Oil Operations
Miller Farms #3
NE-NE-SW-NE (1465' FNL & 1460' FWL)
Section 36-16s-14w
Barton County, Kansas

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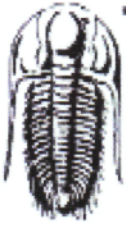
Recommendations:

The 5 ½" disposal casing set and cemented at 3675.

Respectfully yours,

A handwritten signature in cursive script that reads "Kurt Talbott".

Kurt Talbott
Petroleum Geologist



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Incorporated
 8411 Preston Road Suite 800
 Dallas, TX 75225+5520
 ATTN: Kurt Talbot

36-16s-14w Barton,KS
Miller Farms #3
 Job Ticket: 61925 **DST#: 1**
 Test Start: 2014.11.21 @ 13:21:00

GENERAL INFORMATION:

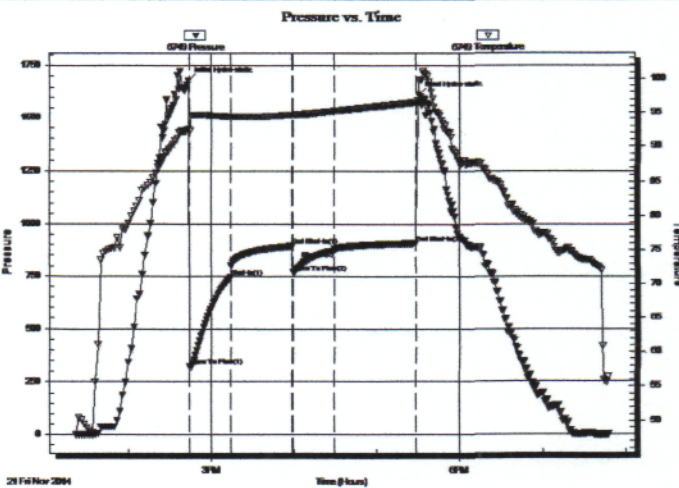
Formation: **LKC H-J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:44:30
 Time Test Ended: 19:47:30
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: S1
 Interval: **3328.00 ft (KB) To 3397.00 ft (KB) (TVD)**
 Total Depth: 3397.00 ft (KB) (TVD)
 Reference Elevations: 1981.00 ft (KB)
 1973.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 6749

Inside

Press@RunDepth: 872.50 psig @ 3393.28 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.21 End Date: 2014.11.21 Last Calib.: 2014.11.21
 Start Time: 13:22:00 End Time: 19:47:30 Time On Btm: 2014.11.21 @ 14:43:30
 Time Off Btm: 2014.11.21 @ 17:30:30

TEST COMMENT: FP 30 Minutes BOB in 45 seconds
 ISI 45 Minutes Surface blow back
 FFP 30 Minutes BOB in 1 minute 45 seconds
 FSI 60 Mintues Very weak surface blow back



PRESSURE SUMMARY

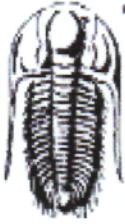
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1679.26	92.58	Initial Hydro-static
1	322.94	92.22	Open To Flow (1)
31	743.70	94.34	Shut-in(1)
75	894.86	94.65	End Shut-in(1)
76	768.66	94.63	Open To Flow (2)
106	872.50	95.24	Shut-in(2)
165	908.67	96.55	End Shut-in(2)
167	1611.16	99.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1837.00	SGOMCW Oil 5% Gas 10% Mud 10% Water 25.77%	

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Incorporated
 8411 Preston Road Suite 800
 Dallas, TX 75225+5520
 ATTN: Kurt Talbot

36-16s-14w Barton,KS
Miller Farms #3
 Job Ticket: 62026 **DST#: 2**
 Test Start: 2014.11.22 @ 02:49:00

GENERAL INFORMATION:

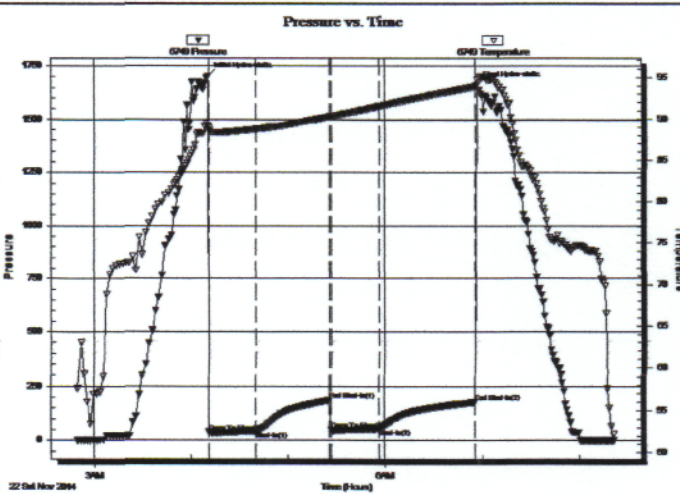
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:11:00
 Time Test Ended: 08:21:30
 Interval: **3398.00 ft (KB) To 3435.00 ft (KB) (TVD)**
 Total Depth: 3435.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: S1
 Reference Elevations: 1981.00 ft (KB)
 1973.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6749

Inside

Press@RunDepth: 53.24 psig @ 3431.00 ft (KB)
 Start Date: 2014.11.22 End Date: 2014.11.22
 Start Time: 02:50:00 End Time: 08:21:30
 Capacity: 8000.00 psig
 Last Calib.: 2014.11.22
 Time On Btm: 2014.11.22 @ 04:10:30
 Time Off Btm: 2014.11.22 @ 06:56:30

TEST COMMENT: IFP 30 Mintues BOB in 29 minutes
 ISI 45 Minutes No blow back
 FFP 30 Minutes Good blow built to 11"
 FSI 60 Minutes No blow back



PRESSURE SUMMARY

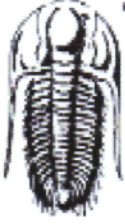
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1702.02	89.21	Initial Hydro-static
1	38.27	88.80	Open To Flow (1)
30	42.05	88.68	Shut-In(1)
75	186.14	90.27	End Shut-In(1)
76	50.39	90.28	Open To Flow (2)
106	53.24	91.51	Shut-In(2)
165	176.99	93.89	End Shut-In(2)
166	1661.60	94.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Clean oil	0.21
55.00	Muddy Emulsified oil Mud 25% Emuls O	0.77

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Incorporated
 8411 Preston Road Suite 800
 Dallas, TX 75225+5520
 ATTN: Kurt Talbot

36-16s-14w Barton, KS
Miller Farms #3
 Job Ticket: 62027 **DST#: 3**
 Test Start: 2014.11.22 @ 13:39:00

GENERAL INFORMATION:

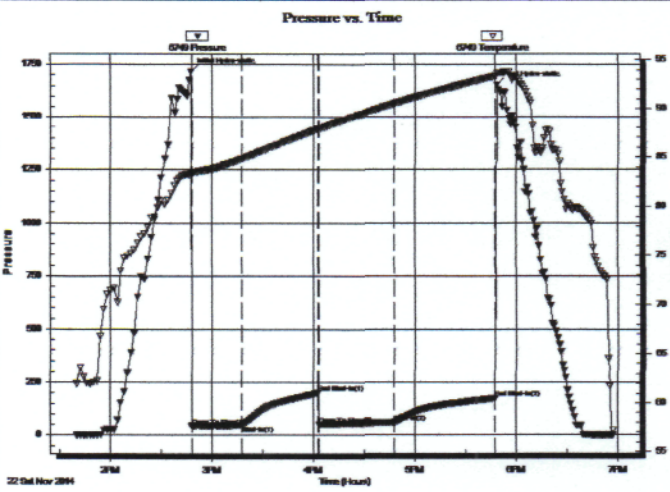
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:48:00
 Time Test Ended: 18:58:00
 Interval: **3398.00 ft (KB) To 3445.00 ft (KB) (TVD)**
 Total Depth: 3445.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: S1
 Reference Elevations: 1981.00 ft (KB)
 1973.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6749

Inside

Press@RunDepth: 59.84 psig @ 3441.00 ft (KB)
 Start Date: 2014.11.22 End Date: 2014.11.22
 Start Time: 13:40:00 End Time: 18:58:00
 Capacity: 8000.00 psig
 Last Calib.: 2014.11.22
 Time On Btm: 2014.11.22 @ 14:47:30
 Time Off Btm: 2014.11.22 @ 17:48:30

TEST COMMENT: FFP 30 Minutes Fair blow / built to 11"
 ISI 45 Minutes Slight surface blow back
 FFP 45 Minutes Fair blow built to 7"
 FSI 60 Minutes Slight surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.54	83.41	Initial Hydro-static
1	40.08	83.19	Open To Flow (1)
30	45.92	84.80	Shut-In(1)
75	199.94	87.85	End Shut-In(1)
76	48.83	87.88	Open To Flow (2)
121	59.84	90.51	Shut-In(2)
180	174.19	93.34	End Shut-In(2)
181	1651.20	93.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean oil	0.07
60.00	WCOM Water 10%/Oil 40%/Mud 50%	0.84

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Mai Oil Operations Incorporated
 8411 Preston Road Suite 800
 Dallas, TX 75225+5520
 ATTN: Kurt Talbot

36-16s-14w Barton,KS
Miller Farms #3
 Job Ticket: 62028 DST#: 4
 Test Start: 2014.11.23 @ 00:35:00

GENERAL INFORMATION:

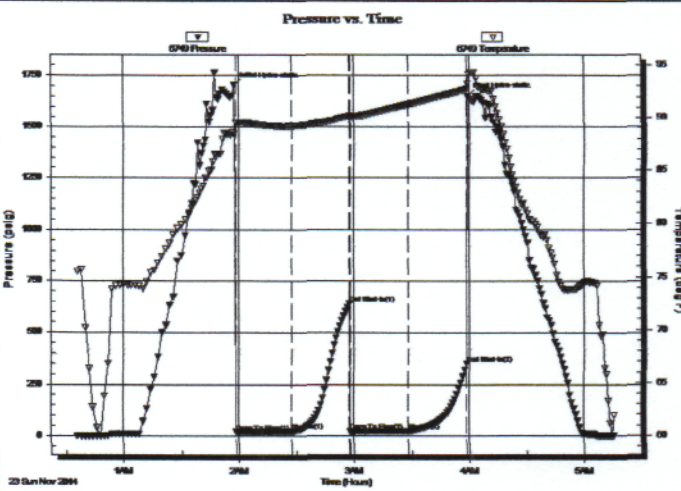
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:58:30
 Time Test Ended: 05:15:30
 Interval: **3438.00 ft (KB) To 3455.00 ft (KB) (TVD)**
 Total Depth: 3455.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: S1
 Reference Elevations: 1981.00 ft (KB)
 1973.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6749

Inside

Press@RunDepth: 23.09 psig @ 3451.00 ft (KB)
 Start Date: 2014.11.23 End Date: 2014.11.23
 Start Time: 00:36:00 End Time: 05:15:30
 Capacity: 8000.00 psig
 Last Calib.: 2014.11.23
 Time On Btm: 2014.11.23 @ 01:57:30
 Time Off Btm: 2014.11.23 @ 03:59:00

TEST COMMENT: IFF 30 Minutes Weak blow built to 1"
 ISI 30 Minutes No blow back
 FFP 30 Minutes Weak surface blow died in 10 minutes
 FSI 30 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1702.57	88.41	Initial Hydro-static
1	21.05	89.44	Open To Flow (1)
30	22.11	89.16	Shut-In(1)
60	643.00	90.13	End Shut-In(1)
61	22.18	89.92	Open To Flow (2)
91	23.09	91.28	Shut-In(2)
121	348.43	92.73	End Shut-In(2)
122	1650.72	93.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	VSOCM Oil 1% Mud 99%	0.14

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

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. 889

Date	11-17-14	Sec.	36	Twp.	16	Range	14	County	Barton	State	Ks	On Location		Finish	11:45 PM
Lease								Location		281 + Galatia Bk top 15 + 180 Rd					
Miller Farms								Well No.		3					
Contractor								Owner		1 1/2 E S 1/4					
Southwind #3								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								Surface							
Hole Size				T.D.				Charge To				mai oil operations			
12 1/4"				515'											
Csg.				Depth				Street							
8 5/8"				515'											
Tbg. Size				Depth				City				State			
Tool				Depth				The above was done to satisfaction and supervision of owner agent or contractor.							
Cement Left in Csg.				Shoe Joint				Cement Amount Ordered							
15'				15'				275 60/40 3 1/2 CC 2 1/2 Gal							
Meas Line				Displace											
				31 3/4 80											
EQUIPMENT								Common							
Pumptrk 20 No.				Cementer											
				Helper				Nick				Poz. Mix			
Bulktrk 9 No.				Driver				Tyson				Gel.			
				Driver				Rick				Calcium			
Bulktrk p.u. No.				Driver								Hulls			
				Driver								Salt			
JOB SERVICES & REMARKS								FLOAT EQUIPMENT							
Remarks: Cement did Circulate								Guide Shoe Rubber plug							
Rat Hole								Centralizer							
Mouse Hole								Baskets							
Centralizers								AFU Inserts							
Baskets								Float Shoe							
D/V or Port Collar								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
X Signature								Jay Brewer							

Quality Oilwell
Cementing

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. 1351

Date 11-24-14	Sec. 36	Twp. 16	Range 14	County Barton	State KS	On Location	Finish 7:30AM
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Location *Susank-281, 15, 1 1/2 E*

Lease <i>Miller Farms</i>	Well No. 3	Owner
Contractor <i>Southwind #3</i>		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 <i>long string</i>		
Hole Size <i>7 7/8</i>	T.D. 3675	Charge To <i>Mai Oil</i>
Csg. <i>5 1/2 #14</i>	Depth 3489.07	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.	Shoe Joint 18.40	Cement Amount Ordered <i>160sx 60/40, 10% salt, 2% gel</i>
Meas Line	Displace 84.6661	<i>1/4 # Flo</i>

EQUIPMENT

Pumptrk 17	No.	Cementer Helper <i>Lonn, ew.</i>	Common
Bulktrk 15	No.	Driver <i>Doug</i>	Poz. Mix
Bulktrk <i>Py</i>	No.	Driver <i>Travis</i>	Gel.
			Calcium

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole <i>30sx</i>	Salt
Mouse Hole	Flowseal
Centralizers <i>1, 2, 5, 6, 9</i>	Kol-Seal
Baskets <i>3' #1</i>	Mud CLR 48 <i>1000 gal</i>
D/V or Port Collar	CFL-117 or CD110 CAF 38
<i>Pipe on bottom broke circulation. Drilled</i>	Sand
<i>Ball and set Packer shoe. Pumped 1000 gal</i>	Handling
<i>Mud CLR-48 with 10661 fw behind it.</i>	Mileage
<i>Plugged Rat hole with 30sx. Hooked to</i>	FLOAT EQUIPMENT
<i>5 1/2 and Mixed 130sx. Shut down washed</i>	Guide Shoe
<i>pump and lines. Released Plug and displaced</i>	Centralizer 5 turbos
<i>with 84.6661 fw. Plug landed and held.</i>	Baskets 1 Reel
<i>Lift pressure 700 psi</i>	AFU Inserts
	Float Shoe
	Latch Down 1
<i>Plug landed at 1500 psi</i>	1 Packer Shoe
	Pumptrk Charge
	Mileage

X Signature *B. Homen*

Tax	
Discount	
Total Charge	