



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1163518
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1163518

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR: _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
--	---	---



#1 Carpenter 13A

335' FNL & 330' FEL

5' S of NE NE NE Section 13-16S-32W

Scott County, Kansas

API# 15-171-20955-0000

Elevation: 2955' GL, 2960' KB

Sample Tops			Ref. Well
Anhydrite	2367'	+593	-15
B/Anhydrite	2388'	+572	-17
Stotler	3551'	-591	-3
Heebner	3932'	-972	-2
Lansing	3978'	-1018	-5
Muncie Shale	4140'	-1180	+3
Stark Shale	4244'	-1284	-3
Hush	4280'	-1320	+1
BKC	4320'	-1360	-4
Marmaton	4355'	-1395	-4
Altamont	4382'	-1422	-5
Pawnee	4456'	-1496	-8
Myrick	4491'	-1531	-11
Fort Scott	4502'	-1542	-7
Cherokee Shale	4529'	-1569	-10
Johnson	4565'	-1605	-7
Morrow	4609'	-1649	+4
Mississippian	4626'	-1666	Flat
RTD	4776'	-1816	

ALLIED OIL & GAS SERVICES, LLC 060332

Federal Tax I.D. # 20-8661476

EMAIL TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakkey KS

DATE <u>6-21-13</u>	SEC. <u>13</u>	TWP. <u>16</u>	RANGE <u>22</u>	CALLED OUT	ON LOCATION <u>4:00 pm</u>	JOB START <u>4:30 pm</u>	JOB FINISH <u>5:00 pm</u>
OPERATOR <u>Carpenter</u>	WELL # <u>1</u>	LOCATION <u>Dakkey 345, 42 (260)</u>			COUNTY <u>Scott</u>	STATE <u>KS</u>	
WELL # <u>1</u>							
LOCATION <u>Dakkey 345, 42 (260)</u>							
COUNTY <u>Scott</u>							
STATE <u>KS</u>							

CONTRACTOR WJW # 2 OWNER Same

TYPE OF JOB Surface

JOB SIZE 12" x 4' T.D. 2.26 CEMENT AMOUNT ORDERED 165 sks Cem 3% cc

PLACING SIZE 8" x 8" DEPTH 225.25 2% gel

PIPE SIZE DEPTH

DRILL PIPE DEPTH

RES. MAX MINIMUM

LEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

DISPLACEMENT 13.44 bbl

EQUIPMENT

PUMP TRUCK CEMENTER La Rene E. Wente

423/281 HELPER Paul Beaver

TRUCK DRIVER Talon Jones

TRUCK DRIVER

HANDLING 178.42 @ 2.48 442.98

MILEAGE 8.24 @ 40 x 2.60 876.86

TOTAL 4709.74

REMARKS:

Mix 165 sks cement
Dispense w/ 3% cc surf
Cement did cementate.

Thank you

ORDER TO: Ritchie Exploration

ADDRESS

CITY STATE ZIP

SERVICE

DEPTH OF JOB 225.25

PUMP TRUCK CHARGE 1512.29

EXTRA FOOTAGE @

MILEAGE 40 @ 2.20 88.00

MANIFOLD Sawedge @ 275.00

40 @ 4.40 176.00

TOTAL 2276.25

PLUG & FLOAT EQUIPMENT

@
@
@
@
@

TOTAL

I, Allied Oil & Gas Services, LLC, you are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Louise Yang

SIGNATURE Louise Yang

SALES TAX (If Any)

TOTAL CHARGES 6,972.99

DISCOUNT 1,603.78 IF PAID IN 30 DAYS

5,369.20 Net

TR

ALLIED OIL & GAS SERVICES, LLC 060728

Federal Tax I.D. # 20-8661476

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Oakley

DATE <u>7/2/13</u>	SEC. <u>13</u>	TWP. <u>16</u>	RANGE <u>32</u>	CALLED OUT	ON LOCATION	JOB START <u>5:30 PM</u>	JOB FINISH <u>6:30 PM</u>
LEASE <u>Carpenter 13A</u>	WELL# <u>1</u>	LOCATION <u>Oakley 345-4E-1 3/4 N into</u>			COUNTY <u>Scott</u>	STATE <u>Ks.</u>	
OLD OR <u>NEW</u> (Circle one)							

CONTRACTOR <u>WW-2</u>	OWNER <u>Same</u>
TYPE OF JOB <u>PTA</u>	CEMENT
HOLE SIZE <u>7 7/8</u>	AMOUNT ORDERED <u>300 SKs 60% 4% Gel</u>
CASING SIZE	<u>1/4" Flo Seal</u>
TUBING SIZE	
DRILL PIPE <u>4 1/2</u>	
TOOL DEPTH <u>2400</u>	
PRES. MAX	COMMON <u>180 SKs @ \$17.90 = \$3222.00</u>
MEAS. LINE	POZMIX <u>120 SKs @ \$9.35 = \$1122.00</u>
CEMENT LEFT IN CSG.	GEL <u>10 SKs @ \$23.40 = \$234.00</u>
PERFS.	CHLORIDE @
DISPLACEMENT <u>2601</u>	ASC @
EQUIPMENT	<u>Flo Seal 75 @ \$2.92 = \$222.75</u>
PUMP TRUCK CEMENTER <u>Dawn Racette</u>	
# <u>120</u> HELPER <u>Tyler Flipse</u>	
BULK TRUCK	
# <u>323-308</u> DRIVER <u>Chris Helpingstine</u>	
BULK TRUCK	
#	
	HANDLING <u>322.20 CF X @ \$2.48 = \$799.06</u>
	MILEAGE <u>13.45 X 40 X @ \$2.60 = \$1398.80</u>
	TOTAL <u>\$6998.61</u>

REMARKS:

mix 50 SKs Cement 2100'
mix 80 SKs Cement 1710'
mix 50 SKs Cement 850'
mix 50 SKs Cement 270'
mix 20 SKs Cement 60'
Plug mousehole 20 SKs Cement
Plug Rathole 30 SKs Cement
Thank You

SERVICE

DEPTH OF JOB <u>2400</u>	
PUMP TRUCK CHARGE	<u>\$2489.59</u>
EXTRA FOOTAGE @	
MILEAGE <u>40</u>	<u>@ \$7.70 = \$308.00</u>
MANIFOLD @	
<u>LV mileage</u>	<u>@ \$4.40 = \$176.00</u>

TOTAL \$2967.59

CHARGE TO: Ritchie Exploration

STREET _____

CITY _____ STATE _____ ZIP _____

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____

TOTAL _____

To: Allied Oil & Gas Services, LLC.
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Lenny Wang

SIGNATURE [Signature]

SALES TAX (If Any) _____

TOTAL CHARGES 9,966.20

DISCOUNT 2,292.22 IF PAID IN 30 DAYS

7,673.97 Net.

[Handwritten mark]

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

October 17, 2013

Peter Fiorini
Ritchie Exploration, Inc.
8100 E 22ND ST N # 700
BOX 783188
WICHITA, KS 67278-3188

Re: ACO1
API 15-171-20955-00-00
Carpenter 13A 1
NE/4 Sec.13-16S-32W
Scott County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Peter Fiorini

Max R. Loveley

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY **Pitcher Exploration, Inc.**

LEASE **#1 Carpenter 13A**

FIELD **Wildcat**

LOCATION **NE NENE**

SEC **13** TWP **16** RGE **32W**

COUNTY **Scott** STATE **KS**

CONTRACTOR **WW #2**

SPUD **6-21-13** COMP **7-2-13**

RTD **4776** LTD **4780**

MUD UP **3405** TYPE MUD **Chem**

ELEVATIONS

KB **2960**

DF

GL **2955**

Measurements Are All From **KB**

From **KB**

CASING

SURFACE **8 5/8" @ 226'**

PRODUCTION

ELECTRICAL SURVEYS

Duct **N/D**

Comp **N/D**

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION		
				A	B	C
Anhydrite	2967	2964	596	698		
Base Anhydrite	2988	2984	576	589		
Stotler	3551	3551	-591	-588		
Heeber	3932	3934	-974	-970		
Lansing	3978	3974	-1010	-1013		
Muncie SH	4140	4142	-1182	-1183		
B/C	4320	4326	-1366	-1356		
Marmaton	4355	4354	-1396	-1391		
Pawnee	4456	4458	-1498	-1484		
Ft Scott	4502	4509	-1549	-1535		
Cherokee SH	4529	4534	-1574	-1559		
Johnson	4565	4576	-1616	-1599		
Morrow	4612	4624	-1664	-1653		
Mississippi	4626	4632	-1672	-1666		

REFERENCE WELLS FOR STRUCTURE

A **Bercoxa #1 Windi SW/C 13-16-32W**

B

C

REMARKS

LEGEND

Anhydrite	Salt	Sandstone	Shale	Carb sh	Limestone	Ool. Lime	Chert	Dolomite

DRILLING TIME IN MINUTES PER FOOT
Rate of Penetration Decreases

5" 10" 15" 20" 25"

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

c ANHYDRITE
2367 +593

BASE
ANHYDRITE
2388 +572

c 2400

3450

LS. TAN, CRM, F XTLN, SOFT,
V ALGAL + OOL, G FOSS Ø, NS

LS, GRY, F-DM XTLN, SOFT, MED
XTLS W/N, SL FOSS, F-Ø, NS

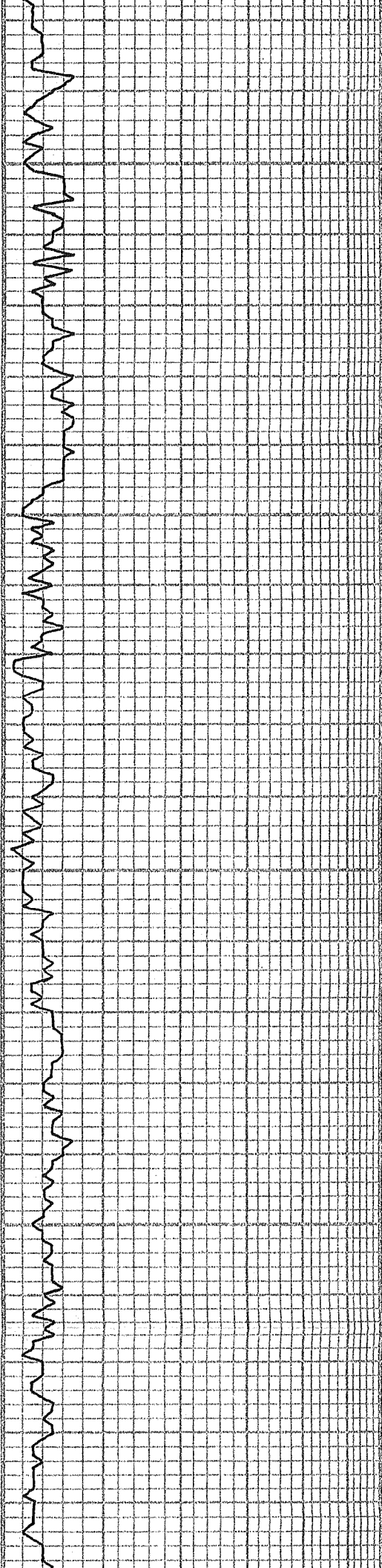
A.A.

c 3500

LS, CRM, F XTLN, SL HRD,
SCT FOSS, NS

SH, GRY/GRN, V LMY

7:AM 6-24-13
DRLG @ 3500'



STOTLER
3551 -591

3600

3700

SH, GRY, BLK

LS, GRY, TAN, F→M XTLN, SL HRD,
FEW FOSS, P XTLN Ø, NS

SH, BLK

LS, BUFF, VF XTLN, SL HRD,
FEW FOSS, P XTLN Ø, NS

LS, CRM, F XTLN, BRITL, SL DNS,
NO APP Ø, NS

LS, GRY, DK GRY, F→M XTLN,
BRITL, P→F XTLN Ø, NS

LS, TAN, BRN, CONGL, S→M HRD
P→F Ø, NS

CHALK

CHALK

SLT STN, GRY

SH, GRY

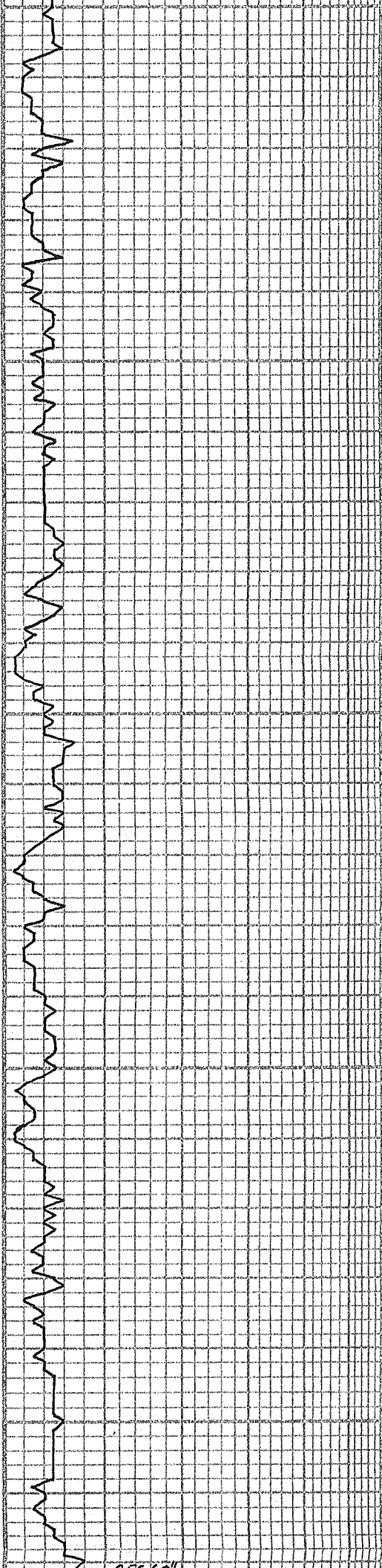
LS, GRY, F XTLN, DNS, S→M HRD,
P→TITE Ø, NS

LS, WHT, VF XTLN, SL DNS,
SOFT, F→G XTLN, PP Ø, NS

LS, GRY, F→M XTLN, SL GRNLR TRT,
SOFT, G XTLN Ø, NS

LS, TAN/ BUFF, F XTLN, SL HRD,
SCT FOSS, SML FOSS, P Ø, NS

MUD CHECK
VIS 56 WT 8.6
CHLOR 1,500 LCM2
FILT 6.4



3800

LS, TAN, MXTLN, SMDY TXF, SOFT,
GXTLN, NS

LS, BUFF, FXTLN, BRITL, SOFT,
SCT FOSS + FRAGS, VPI, NS

LS, GRY, TAN, F → SL MED XTLN,
SOFT, BRITL, FEW SCT FOSS +
ALGAL, FØ, NS

SH, BLK

SH, GRY

LS, WHY, VFXTLN, DNS, HRD,
VCLN LS, TITE, NS

DOLD, LMY, LT TAN, VFXTLN,
SL SUCR, HRD, DNS, NS

A.A.

DOLD, A.A. CRM

A.A.

CHALK

LS, BRN, VEXTLN, DNS, VHRD,
FOSS, TITE, NS

LS, TAN, WHY, F → MXTLN, HRD,
SLGRNLR TXT N/PES, NO VIS P, NS

3900

SH, GRY, BLK

LS, BRN, TAN, F → MXTLN, SOFT,
SL CHLKY, FØ, NS

HEEBNER
3932 - 972

SH, BLK

SH, GRY, GRY/GRN

LS, VCHLKY, SHLY-GRY, SOFT,
TRASHY, SCT GILS, NS

A.A.

TORONTO
3962 - 1002

LS, WHY, VFXTLN, VDNS, VHRD,
SCT FOSS W/N, TITE, NS
"SCT WHTCHT - FOSS

LANSING
3978-1018

4000

4100

MUNCIE
4140-1180

SH, G. RY, GRN / GRY
LS, WHT, F XTLN, HRD, V FOSS,
SL CHLKY N / Pcs, NS

LS, CRM, TAN, V F XTLN, V DNS,
V HRD, VW CMT'D, ABUN FOSS,
TITE, NS

SH, VARI COLOR

SH, GRY
LS, TAN, BUFF, F XTLN, BRITL,
HRD, ABUN SML OOLS + FOSS,
VG FOSS Ø, NS

LS, WHT, F XTLN, M HRD, SCT
MED VUGS, NS

LS, LT GRY / WHT, F XTLN, BRITL,
ABUN SML → MED VUGS, NS
LS, TAN, F XTLN, BRITL, S → M HRD
SCT FOSS, G. EVEN FLUOR STNG,
MICRO + V SML FLUOR FO ON BRK,
V LT OIL, SOME MED BRN OIL SPTS -
NON FLUOR, ? GAS BLS ON BRK

60' CIRC OIL + GAS INCR, PPT SML VUGS

LS, CRM, F XTLN, HRD, SL DNS, FEW
SCT FOSS, VP XTLN Ø, NS

LS, BRN / CRM, M → CRS XTLN, HRD
NS

LS, BUFF, F XTLN, BRITL, V DOM,
G. DOM Ø, NS

SH, DK GRY

LS, TAN, BUFF, F XTLN, HRD, V OOL,
VARI SIZE OOLS, MOSTLY W CMT'D,
G. DOM Ø, NS

LS, WHT, F XTLN, HRD, W CMT'D OOLS,
+ FOSS, SL DOM, NS

LS, WHT, CRM, V F XTLN, HRD, DNS,
FEW FOSS, V P. NS

LS, WHT, CRM, F → V F XTLN, SOET,
SCT CHLK, NS

LS, LT GRY / CRM, V F XTLN, BRITL,
SL DNS, VP → TITE Ø, NS

SH, BLK
LS, BRN, V F XTLN, V DNS, V HRD,
SCT FOSS, TITE, NS

LS, BUFF, F → M XTLN, M HRD, BRITL
PP XTLN Ø, NS, V GRN LR TXT

LS, BUFF, V F XTLN, DNS, HRD,
TITE, NS

LS, TAN / BRN, V F XTLN, V HRD,
V DNS, SCT FOSS, TITE, NS

SHORT TRIP: 27 STDS +
TRIP TO COLLARS
DST #1 4026-4060
30-45-45-60
IF: BOB 3 1/2 MIN ISI: NR
FF: BOB 4 1/2 MIN FSI: NR
REC: 124' W
1140' MW 95% W
120' MW 75% W
28,000 CHLOR
FP: 62-376, 389-673
SIP: 1034-1022
HP: 1968-1917

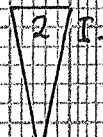
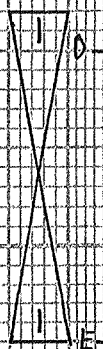
STRAP 4066.52'
BOARD 4065.72'
LONG .80'
7:AM 6-25-13
DRLG @ 4058'

MUD CHECK
VIS 50 WT 9.2
CHLOR 2,200 LCM1
FILT 8.0

7:AM 6-26-13
CFS @ 4092

MUD CHECK
VIS 56 WT 9.2
CHLOR 3,000 LCM1
FILT 8.8

DST #2 4178-4210
30-45-45-60
IF: 5" ISI: NR
FF: 5 1/2" FSI: NR
REC: 124' MW 75% W
115' MW 65% W
CHLOR: 4,600
FP: 17-81, 82-122
SIP: 1100-1076



CFS 60"

CFS 45"

CFS 60"

CFS 60"

CFS 60"

CHART CHANGE

CFS 45"

CFS 45"

4200

LS. WHT/CRM, BRTL, M HRD, LG XTLN + OOL, G SCT OIL COAT'D OOL + VUGS, PCS & FO ON BRK, ENERGY, A FEW GAS BBLs 1/4 OIL

DK OIL NO FLUOR NO ODOR 20' FDN/CUP (8 PCS)

HP: 2061-1905

20" A.A. 45" TAN, HRD, F XTLN, V CHT, WHT CHT, DNS, VW CMT'D, TITE SH, BLK, GRN, GRN LS, BUFF, VF XTLN w/ ABUN OOLS, ABUN OOLs, VARI SIZE OOLS + OOLS, HRD, NS

LS. CRM, TAN, VF XTLN, V DNS, V HRD, CHTY, SCT FOSS w/N, TITE, NS

DST #3 4276-4372 30.45.45.60

IF: 8 1/2" 151:NR FF: 3 3/4" F51:NR REC: 103' WCM - 40%W 63' MCW - 72%W 187' MCW - 86%W

41,000 CHLOR FP: 18-99, 101-172 SIP: 1134-1125 HP: 2100-2004

STARK 4244-1284

SH, BLK LS. TAN, VF XTLN, HRD, V FOSS, TITE, NS

CHALK LS. TAN, VF XTLN, ABUN VARI SIZE OOLS + FOSS FRAGS, P CMT'D, CHLKY, SOFT, BRTL, P XTLN, NS

CHT, WHT MILKY, OPAQ, FRESH, FEW SCT FOSS w/N, NS

LS. TAN, P XTLN, SOFT -> M HRD, FOSS, P, NS

LS, DK BRN, F XTLN, HRD, DNS, FEW FOSS, TITE, NS

7:AM 6-27-13 CFS @ 4280'

HUSHPUCKNEY 4287-1327

SH, BLK LS. TAN, F -> CRS XTLN, V BRTL OIL STND O STRKS, SCT PCS w/HNY DP OIL COAT'D VUGS, LG VUGS, SOME BK BRN OIL SPTS ON BRK, FAIR

NO ODOR OIL SPTS N/CUP

4300

SET PPB STRKS LS. TAN, WHT, F XTLN w/ CRS XTLs w/N, M HRD, P XTLN, NS

LS. CRM, V CHLKY, SOFT, NS

BKC 4320-1360

LS. WHT/CRM, VF XTLN, V DNS, V HRD, TITE, NS

PLEASANTON 4326-1366

LS. BRN, VF XTLN, V HRD, V DNS, TITE, NS

LS. TAN, F XTLN, HRD, DNS, V FEW FOSS, NO BINS

LS. TAN, F XTLN, SOFT, SL DNS, FAIR PP XTLN, NS

MUD CHECK VIS 67 WT 9.2 CHLOR 3,300 LCM 2 FLY 9.6

MARMATON 4355-1395

SH, GRN LS. WHT, SCT CLR XTLs, F XTLN, SL GRN LR TXT, M HRD, G BRN STAG STRKS, G PP OIL FILL, NO SAT, G PP OIL SPTS ON BRK, NO BLEED, NO FLUOR

WT -> MED BRN FO ? ODOR

4370' DRLG SMPL: G FO N/TRAY

SH, GRN SH, VARI COLOR

ALTAMONT 4382-1422

LS. GRN, TAN, F XTLN, V HRD, TAN w/ SCT M -> CRS XTLs w/N, VP, NS

DST #4 4398-4445 30.30.30.30

IF: sunblo, died 20min FF: dead, flush, dead REC: 3' m w/skim of oil FP: 12-18, 15-17 SIP: 96-46 HP: 2201-2066

4400

LS LT GRN SH TAN, F XTLN, V HRD TITE, NS

LS. DK BRN, F XTLN, HRD, V FOSS, NO VIS, NS

LS. WHTSH GRN, VF XTLN, HRD, ABUN W CMT'D FOSS, TITE, NS

7:AM 6-28-13 DRLG @ 4402'

MUD CHECK

CFS 45'

CFS 45'

CFS 60"

CFS 45'

CFS 60"

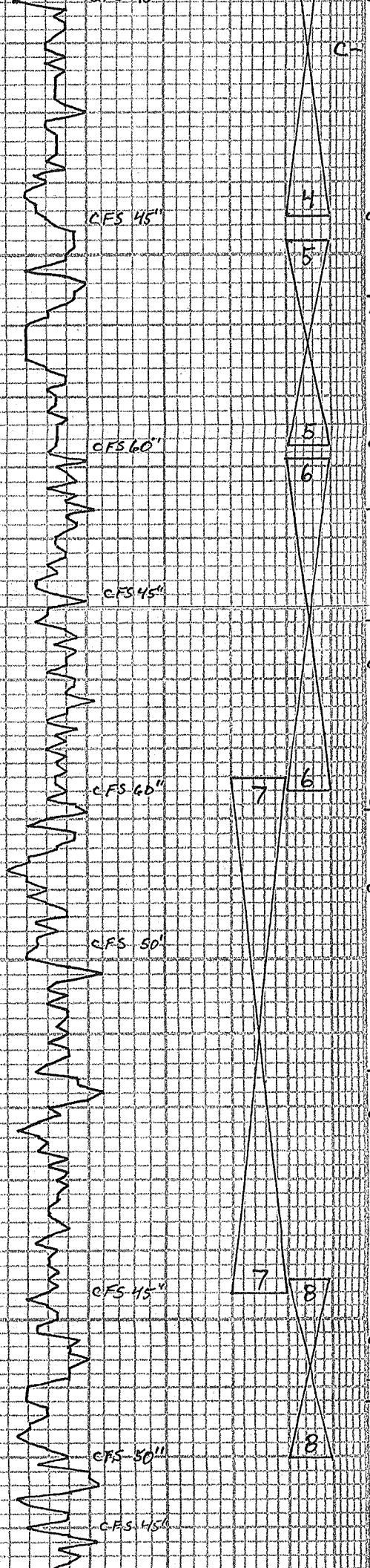
CFS 60"

CFS 60"

CFS 45' CHART CHANGE

CFS 45"





CFS 45"
 CFS 60"
 CFS 45"
 CFS 45"
 CFS 60"
 CFS 50"
 CFS 45"
 CFS 50"
 CFS 45"

SH, GRY
 LS, BRN, V FXTLN, HRD, NO VIS Ø, FLUOR STNG, FAIR FO ON BRK, LT TAN OIL
 LS, BRN, V FXTLN, HRD, DNS, TITE, FEW SCT FOSS W/N, NS
 LS, WHT, FXTLN, SOPY, LT SCT, MICRO DIL SPTS ON BRK, WT SCT STNG
 CHALK, SHLY
 SH, BLK, GRN/GRY, GRY, GRN RED
 LS, WHT, F → M XTLN, S O FT, VG OIL SAT PPXTLN Ø, V SL SLO BLEED, G SAT STNG, FO N/ TRAY, SCT DULL FLUOR FO, VG FO ON BRK
 LS, TAN, V FXTLN, V DNS + HRD, TITE, NS
 A.A. CHT, WHT, SMOKE-OPAQ, FRESH
 SH, BLK
 LS, WHT, FXTLN, HRD, G SCT XTLN Ø, VG BLEED, DK BRN OIL W/GAS
 LS, BRN/BUFF, FXTLN, M HRD, G EVEN FLUOR STNG W/VG OIL ON BRK, FLAT OIL SPTS, VLT BRN OIL CHALK, EVEN FLUOR
 SH, BLK
 LS, TAN, V FXTLN, V HRD, V DNS, TITE, NS
 LS, A.A., V CHTY
 LS, BRN/TAN, HRD, F → M XTLN, SCT FOSS, F SCT XTLN Ø, NS
 SH, BLK, GRY, RED, GRN
 LS, TAN/WHT, F → CRS XTLN, LG RND'D PEBBLS W/N, CONGL, MOSTLY HRD, NO VIS Ø, NS
 LS, WHT, CHLKY, S → HRD, FXTLN, DK BRN STNG STRKS, F FO ON BRK, 1 PC OIL FILL FRAC Ø, MOSTLY PPXTLN Ø
 LS, BRN, V FXTLN, V DNS + HRD, TITE, V FEW FOSS, NS
 LS, BRN, V DNS, V FXTLN, V HRD, TITE, NS
 LS, CRM, FXTLN, V SOFT, TR SCT FLUOR STNG, G FO ON BRK, G VUGY + LG XTLN Ø, VARI SIZE FO, G G + O BLEED ON BRK, FEW W/NAT BLEED
 LS, CRM, FXTLN, M HRD, NO APPR, NS
 A.A.
 LS, CHLKY, GRY/TAN, F → M XTLN, TRAY HVY W/FO, VG EDGE STNG, DK OIL FILL, PP + SML VUG Ø, SCT FLUOR STNG + FO, ABUN SLO BLEED OIL ROCKS, V GASSY
 SH, BLK
 SS, QZ, WHT CMT, CLR GRNS, F SORT, SCT HARDNESS, MOSTLY SOFT VG Ø, NS
 LS, TAN, BRN, FXTLN, V HRD, SL DNS TITE, NS
 SS, F GRNS, LT GRN CMT, HRD, FO, W SORT
 LS, DK + LT BRN, V FXTLN, HRD, V FEW SCT FOSS, TITE, NS
 LS, WHT TAN, FXTLN, V HRD, DNS

1 PC W/SH NO ODOR
 NO ODOR 3 SHOW CHIPS
 NO ODOR DK BRN OIL FO-CUP
 2 PCS G. ODOR RAINBOW O SPTS W/ CUP
 1 PC FLUOR OIL SPTS W/ OIL
 VIS 66 WT 9.1
 CHLDR 3,100 LCM 2
 FILT 9.2
 DST #5 4448-4477
 30.45.45.60
 IF: 2" ISI: NR
 FF: dead, flush FSI: NR
 REC: 30' G.OWCM (5%G, 8%O, 15%W)
 60' OG WCM (4%G, 3%O, 32%W)
 44,000 CHLDR
 FP: 12-34, 37-60
 SIP: 1051-1008
 HP: 2248-2006
 7:AM 6-29-13
 DST #5 @ 4477'
 MUD CHECK
 VIS 47 WT 9.3
 CHLDR 3,100 LCM 2
 FILT 9.6
 DST #6 4479-4526
 30.30.30.30
 REC: 5' M W/OIL SPKS N/TOOL
 FP: 15-16, 16-17
 SIP: 31-25
 HP: 2209-2093
 FEW FO N/ TRAY LT ODOR
 7:AM 6-30-13, CFS @ 4548'
 MUD CHECK
 VIS 58 WT 9.0
 CHLDR 3,100 LCM 2
 FILT 8.0
 HVY FO IN CUP VGASSY G BLEED
 SH FLOOD
 7:AM 7-1-13
 DST #8 @ 4620'
 MUD CHECK
 VIS 48 WT 9.4
 CHLDR 2,500 LCM 2
 FILT 8.8

PAWNEE
4456-1496

MYRIC
4486-1526

4500
FT SCOTT
4502-1542

CHEROKEESH
4529-1569

JOHNSON
4565-1605

4600
MORROW SH
4609-1649

MORROW SD
4617-1652

MISS
4626-1666

LS, TAN, MXTLN, VHRD, DWS, TITE, NS

LS, TAN, MXTLN, SOFT, BRTL, P PPXTLN, NS

LS, WHT, M → CRS XTLN, SOFT, F → G XTLN, NS

LS, TAN, BRN, VFXTLN, HRD, TITE, NS

LS, TAN, WHT, FXTLN, HRD, TITE, NS

△ △
△ △
△ △
△
CHT, OPAQ, FRESH

LS, CRM, TAN, BUFF, VFXTLN, DWS, HRD, TITE, NS

LS, TAN, CRM, F → MXTLN, HRD, TITE W/SCT PPXTLN, NS

LS, WHT/CRM, MXTLN, BRTL, SCT CHLKY LS, S → M HRD, WP, NS

AA.

A.A, MCR CHLKY LS

LS, BRN/TAN, MXTLN, VHRD, CRS TXT, 70, NS

LS, WHT/TAN, F → MXTLN, BRTL, HRD, VP → TITE, NS

LS, TAN, VF GRNLR, SOFT, NO APP, NS

LS, VDK BRN/BLK, VFXTLN, V DWS, HRD, TITE, NS

DST#7 4524-4596
30.45.45.60
IF: 3/4" 151:NR
FF: DEAD FSI:NR
REC: 30' GOWCM
(2%G, 3%O, 4%W)
FP: 15-24, 26-35
SIP: 1033-995
HP: 2277-2122

DST#8 4594-4620
30.45.45.60
IF: 7" 151:NR
FF: 7" FSI: vwk surf blo @40 min
REC: 40' WCM 40 SPKS
27%W, 73% M
63' MCW - 62%W, 38%W
187' MCW - 88%W, 12%W
86' WEAK GIP
36,000 CHLOR
FP: 13-88, 91-149
SIP: 1127-1066
HP: 2306-2141

4700

CFS 4511

TD
DEV 2 3/4"

10 STD SHORTTRIP
COND ≈ 1 1/2 HRS
OUT FOR LOGS

5" 10" 15" 20" 25"

LITH

OIL

DRILLING TIME Minutes/Foot

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

STATIONS

REMARKS

Rate of Penetration Decreases