



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1089239  
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
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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: \_\_\_\_\_



1089239

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
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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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Shell Gulf of Mexico Inc.
Well Name	Croft Farms 3407 30-1H
Doc ID	1089239

#### Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	5774'-6166'	160314 gals fluid, 88375# proppant	
6	6190'-6520'	148260 gals fluid, 60520# proppant	
6	6537'-6817'	154518 gals fluid, 61701# proppant	
6	6885'-7165'	185190 gals fluid, 58459# proppant	
6	7232'-7512'	194234 gals fluid, 77862# proppant	
6	7580'-7860'	148134 gals fluid, 83708# proppant	
6	7927'-8207'	156405 gals fluid, 64525# proppant	
6	8275'-8555'	152082 gals fluid, 59593# proppant	
6	8622'-8902'	2422 gals fluid, 71072# proppant	

SHELL GULF OF MEXICO, INC. (34574)	Croft Farms 3407 - 30	
<b>PETE MARTIN DRILLING (34645)</b> <b>(SET THE CONDUCTOR)</b>	1-H Conductor	1-H Mouse Hole
Call in DATE OF SPUD	3/30/2012	3/30/2012
spud in date	3/31/2012	4/3/2012
T.D date	3/31/2012	4/4/2012
Size Hole Drilled	26" Diam	20"
Size Casing Set (in O.D )	18"	14"
conductor wall thickness	.250	.118
Weight Lbs./Ft.	47.44 ppf	27.76 ppf
Setting Depth	60'	77'
Type of Cement	Type 1\2 portland cement	Type 1\2 portland cement
Cubic yards of cement	5 cu yds	5 cu ysd
2500 PSI Grout Mix	Yes	yes
Type and Percent of Additives	15% Fly ash	15% Fly ash
Comments	0'-12'dirt 12'-60' hard clay	0'-12'dirt 12'-60' hard clay hit a little water at 25'

# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC		DATE 23-MAY-12	F.R. # 1001910550	SERV. SUPV. JUSTIN D STAMPER										
LEASE & WELL NAME CROFT FARMS 3407 #30-1H - API 1507721814000		LOCATION 30-34S-7W		COUNTY-PARISH-BLOCK Harper Kansas										
DISTRICT McAlester		DRILLING CONTRACTOR RIG #		TYPE OF JOB Surface										
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		MECHANICAL BARRIERS		MD	TVD	HANGER TYPES		MD	TVD			
9-5/8" Top Cem Plug, Nitrile cvr, Phc		Shoe PROVIDED BY CUSTOMER												
MATERIALS FURNISHED BY BJ				PHYSICAL SLURRY PROPERTIES										
				SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER				
water					8.34					20				
CLASS C+2%CACL2+.25#CELLOFLKE				500	14.8	1.35	6.34	02:45		119.89	75.45			
Water					8.34					58				
Available Mix Water		500	Bbl.	Available Displ. Fluid		500	Bbl.	TOTAL		197.89	75.45			
HOLE				TBG-CSG-D.P.				COLLAR DEPTHS						
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE		
12.25		800	8.921	9.625	36	CSG	794	794	J-55	794	755			
LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.	
17.	18	84		60	60					9.625	8RD	WATER BASED MU	8.8	
DISPL. VOLUME		DISPL. FLUID		CAL. PSI		CAL. MAX PSI		OP. MAX		MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE		WGT.	BUMP PLUG	TO REV.		SQ. PSI	RATED	Operator	RATED	Operator		
58	BBLS	Water		8.34	268						2816	1500	FRAC TANK	
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: ARRIVE ON LOCATION, WAIT ON CASING, RIG UP														
PRESSURE/RATE DETAIL								EXPLANATION						
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>								
	PIPE	ANNULUS				TEST LINES 2300 PSI								
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>								
19:00						ARRIVE ON LOCATION								
08:00						SAFETY MEETING								
08:25	2300				WATER	PRESSURE TEST LINES, START WATER AHEAD								
08:30	50		4	20	WATER	FINISH WATER, START SLURRY								
08:55	320		5	120	SLURRY	FINISH SLURRY, SHUT DOWN, DROP PLUG AND DISPLACE								
09:07	340		5	48	WATER	SLOW TO BUMP PLUG								
09:10	260		3	10	WATER	BUMP PLUG, PRESSURE TO 800 PSI								
09:11	0					BLEED OFF RECIVED .25 BBLS BACK TO TRUCK								
						FLOATS HOLDING, RECIVED 58 BBLS OF CMT BACK TO SURFACE								
						THANK YOU FOR USING BHI								
						JUSTIN STAMPER AND CREW								
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:							
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	800	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	58	196	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N								

# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC	DATE 21-JUN-12	F.R. # 1001916509	SERV. SUPV. JUAN D MAESTAS
LEASE & WELL NAME CROFT FARMS 3407 #30-1H - API 1507721814000	LOCATION 30-34S-7W		COUNTY-PARISH-BLOCK Harper Kansas
DISTRICT McAlester	DRILLING CONTRACTOR RIG #		TYPE OF JOB Intermediate

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
7" Top Cem Plug, Nitrile cvr, Phen	Float Shoe 7 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
C50:50:2 + Additives		200	14.2	1.32	5.66	03:45	46.91	26.94
Displacement			8.34				211.13	
SealBond Spacer 25 (w/ 45lb bag)			8.45				40	
C15:85:8 + Additives		790	12.4	2.45	13.51	05:00	344.26	254.16
Available Mix Water _____ Bbl.		Available Displ. Fluid _____ Bbl.		TOTAL			642.31	281.10

HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
8.75		5403	6.366	7	23	CSG	5403	4780		5049	5001	

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
8.9	9.625	36		800	800				4600	4600	7	8RND	WATER BASED MU	8.8

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
211	BBLS	Displacement	8.34	1500	0	0	0	0	6340	5072	RIG

**EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:**

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 5500 PSI	
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>	
22:30	0	0	0	0		ARRIVED ON LOCATION	
22:35	0	0	0	0	0	HAZARD ASSESMENT WALK AROUND	
						06/22/2012	
12:30	0	0	0	0	0	CIRCULATING THROUGH TOOL	
14:30	0	0	0	0	0	HELD SAFTYMEETING WITH RIG CREW	
15:00	0	0	0	0	0	SBSPC RIG PUMPED 40 BBLS SEAL BOND SPACER	
15:42	0	0	0	0	0	H2O TEST C063 PUMP AND LINES TO 5000 PSI	
15:48	550	0	3	345	CMT	PUMP LEAD SLURRYT @ 12.4 PPG	
17:37	440	0	5.1	47	CMT	PUMP TAIL SLURRY @ 14.2 PPG	
17:47	0	0	0	0	CMT	SHUTDOWN	
17:49	70	0	4	0	H2O	DROPT TOP PLUG AND DISPLACE	
18:04	530	0	4	60	H2O	SEE LIFT PRESSURE	
18:31	1210	0	2.5	170	H2O	SLOW RATE	
18:45	1110	0	2.5	199	H2O	SHUTDOWN	
18:55	0	0	0	0	H2O	BLEED PSI .7 BBLS RTN FLOAT HELD	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	40	643	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC	DATE 06-AUG-12	F.R. # 1001927554	SERV. SUPV. JUSTIN D STAMPER
LEASE & WELL NAME CROFT FARMS 3407 #30-1H - API 1507721814000	LOCATION 30-34S-7W		COUNTY-PARISH-BLOCK Harper Kansas
DISTRICT McAlester	DRILLING CONTRACTOR RIG #		TYPE OF JOB Plug Back

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
	No Shoe						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
Mud Clean II			8.45				20	
H+.7%CD32+15%SILICA SAND		105	17	1.13	4.12	03:00	21.05	10.30
Mud Clean II			8.45				9	
Drilling Mud			8.7				41	

Available Mix Water	500	Bbl.	Available Displ. Fluid	500	Bbl.	TOTAL	91.05	10.30
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HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
6.125		5250	3.34	4	14	DP		4780	4780	D		
			2.441	2.875	6.4	TBG		5280		P-110		

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
											2	1502	WATER BASED MU	8.7

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	WATER
50	BBS	Drilling Mud	8.7	200				1500			FRACK TANK

**EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: ARRIVE ON LOCATION, RIG UP, WAIT ON RIG**

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 5600 PSI	
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>	
12:30						ARRIVE ON LOCATION	
14:00						SAFETY MEETING	
15:22	5700				WATER	TEST LINES, START MUD CLEAN	
15:32	500		4	20	MUD CLN	FINISH MUD CLEAN, START SLURRY	
15:38	100		3	21	SLURRY	FINISH SLURRY, DROP PLUG, CLEAN UP, START MUD CLEAN	
15:47	100		5	9	MUD CLN	FINISH MUD CLEAN START WATER	
15:53	150		5	32	MUD	SLOW TO BUMP PLUG	
15:58	180		2	9	MUD	BUMP PLUG PRESSURE TO 1300 PSI	
15:59	0					BLEED OFF AND CHECK FOR FLOW	
						PLUG HOLDING	
16:36	2800		2		MUD	PRESSURE UP AND SHEER PLUG TO CIRCULATE	
16:41	500		5	20	MUD	CIRCULATE MUD OUT OF TRUCK AND GIVE BACK TO RIG	
						THANK YOU FOR USING BHI	
						JUSTIN STAMEPER AND CREW	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1200	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N		111	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

# Shell Exploration & Production Co. Inc.

Harper Co. KS (NAD-27)

Sec 30-T34S-R07W

Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774

Wellbore #1

Design: Wellbore #1

## Sperry Drilling Services

# Combo Report With Grid North & True North

27 July, 2012

Well Coordinates: 140,456.71 N, 2,109,796.88 E (37° 03' 06.48" N, 098° 07' 25.67" W)

Ground Level: 1,329.00 ft

Local Coordinate Origin:	Centered on Well Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774
Viewing Datum:	WELL @ 1350.68ft (Original Well Elev)
TVDs to System:	N
North Reference:	True
Unit System:	API-US-new

Version: 2003.21 Build: 43

**HALLIBURTON**



**Design Report for Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
0.00	0.00	359.77	0.00	1,350.68	0.00	0.00 N	0.00 E	140,456.71	2,109,796.88	0.00	0.00	
144.00	0.46	250.36	250.59	1,206.68	144.00	0.19 S	0.55 W	140,456.52	2,109,796.34	0.32	-0.18	First MWD Survey
205.00	0.87	296.68	296.91	1,145.69	204.99	0.06 S	1.19 W	140,456.64	2,109,795.69	1.06	-0.05	
267.00	2.29	329.27	329.50	1,083.71	266.97	1.22 N	2.24 W	140,457.92	2,109,794.64	2.62	1.25	
328.00	4.17	350.57	350.80	1,022.81	327.87	4.46 N	3.21 W	140,461.15	2,109,793.65	3.61	4.50	
389.00	6.08	355.29	355.52	962.05	388.63	9.87 N	3.82 W	140,466.56	2,109,793.02	3.20	9.92	
451.00	6.77	355.91	356.14	900.44	450.24	16.79 N	4.32 W	140,473.48	2,109,792.49	1.12	16.85	
512.00	6.54	356.39	356.62	839.85	510.83	23.84 N	4.77 W	140,480.53	2,109,792.02	0.39	23.91	
604.00	4.97	353.14	353.37	748.32	602.36	33.03 N	5.54 W	140,489.72	2,109,791.21	1.74	33.11	
696.00	3.85	353.94	354.17	656.59	694.09	40.06 N	6.31 W	140,496.75	2,109,790.41	1.22	40.15	
731.00	3.55	355.17	355.40	621.67	729.01	42.31 N	6.52 W	140,498.99	2,109,790.19	0.89	42.40	
898.00	2.89	357.25	357.48	454.93	895.75	51.67 N	7.12 W	140,508.35	2,109,789.56	0.40	51.77	
990.00	2.38	356.53	356.76	363.03	987.65	55.90 N	7.33 W	140,512.57	2,109,789.33	0.56	56.00	
1,082.00	2.34	351.81	352.04	271.11	1,079.57	59.66 N	7.69 W	140,516.34	2,109,788.95	0.22	59.77	
1,174.00	1.58	334.52	334.75	179.16	1,171.52	62.67 N	8.50 W	140,519.34	2,109,788.13	1.04	62.79	
1,267.00	0.68	263.65	263.88	86.18	1,264.50	63.77 N	9.59 W	140,520.44	2,109,787.03	1.61	63.91	
1,359.00	0.75	221.20	221.43	-5.82	1,356.50	63.26 N	10.53 W	140,519.93	2,109,786.09	0.57	63.41	
1,451.00	0.87	197.13	197.36	-97.81	1,448.49	62.14 N	11.14 W	140,518.81	2,109,785.49	0.39	62.30	
1,543.00	0.87	203.94	204.17	-189.80	1,540.48	60.84 N	11.63 W	140,517.50	2,109,785.00	0.11	61.00	
1,638.00	0.62	214.20	214.43	-284.79	1,635.47	59.76 N	12.22 W	140,516.42	2,109,784.42	0.30	59.93	
1,732.00	0.69	194.94	195.17	-378.78	1,729.46	58.79 N	12.65 W	140,515.45	2,109,783.99	0.24	58.97	
1,827.00	0.53	215.27	215.50	-473.78	1,824.46	57.88 N	13.06 W	140,514.54	2,109,783.59	0.28	58.07	
1,921.00	0.46	199.63	199.86	-567.77	1,918.45	57.17 N	13.44 W	140,513.83	2,109,783.21	0.16	57.37	
2,016.00	0.59	200.08	200.31	-662.77	2,013.45	56.36 N	13.74 W	140,513.01	2,109,782.91	0.14	56.55	
2,110.00	0.44	207.09	207.32	-756.77	2,107.45	55.58 N	14.07 W	140,512.23	2,109,782.58	0.17	55.78	
2,205.00	0.20	198.26	198.49	-851.76	2,202.44	55.10 N	14.29 W	140,511.75	2,109,782.36	0.26	55.31	
2,299.00	0.33	170.30	170.53	-945.76	2,296.44	54.68 N	14.30 W	140,511.33	2,109,782.36	0.19	54.88	
2,394.00	0.25	195.02	195.25	-1,040.76	2,391.44	54.21 N	14.31 W	140,510.86	2,109,782.35	0.15	54.41	
2,489.00	0.28	187.76	187.99	-1,135.76	2,486.44	53.78 N	14.40 W	140,510.43	2,109,782.27	0.05	53.98	
2,583.00	0.34	222.22	222.45	-1,229.76	2,580.44	53.34 N	14.62 W	140,509.99	2,109,782.05	0.20	53.55	
2,678.00	0.22	258.79	259.02	-1,324.76	2,675.44	53.10 N	14.99 W	140,509.75	2,109,781.68	0.22	53.32	
2,772.00	0.10	328.60	328.83	-1,418.76	2,769.44	53.14 N	15.21 W	140,509.78	2,109,781.46	0.22	53.36	
2,867.00	0.15	285.97	286.20	-1,513.76	2,864.44	53.24 N	15.37 W	140,509.89	2,109,781.30	0.11	53.46	
2,961.00	0.29	223.95	224.18	-1,607.76	2,958.44	53.11 N	15.65 W	140,509.75	2,109,781.01	0.27	53.33	
3,056.00	0.28	195.94	196.17	-1,702.76	3,053.44	52.71 N	15.88 W	140,509.36	2,109,780.78	0.15	52.94	
3,150.00	0.32	165.14	165.37	-1,796.76	3,147.44	52.24 N	15.88 W	140,508.88	2,109,780.79	0.17	52.47	
3,245.00	0.59	155.35	155.58	-1,891.75	3,242.43	51.53 N	15.61 W	140,508.18	2,109,781.06	0.29	51.76	

**Design Report for Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
3,339.00	0.35	139.17	139.40	-1,985.75	3,336.43	50.88 N	15.23 W	140,507.52	2,109,781.45	0.29	51.10	
3,434.00	0.20	154.95	155.18	-2,080.75	3,431.43	50.50 N	14.97 W	140,507.15	2,109,781.71	0.18	50.72	
3,528.00	0.22	158.48	158.71	-2,174.75	3,525.43	50.19 N	14.83 W	140,506.84	2,109,781.84	0.03	50.40	
3,623.00	0.29	97.67	97.90	-2,269.75	3,620.43	49.98 N	14.53 W	140,506.64	2,109,782.15	0.28	50.19	
3,718.00	1.13	68.57	68.80	-2,364.74	3,715.42	50.29 N	13.42 W	140,506.95	2,109,783.26	0.93	50.48	
3,812.00	1.16	56.95	57.18	-2,458.72	3,809.40	51.14 N	11.75 W	140,507.80	2,109,784.92	0.25	51.31	
3,907.00	0.76	64.34	64.57	-2,553.71	3,904.39	51.93 N	10.38 W	140,508.60	2,109,786.29	0.44	52.08	
3,970.00	0.97	27.37	27.60	-2,616.70	3,967.38	52.59 N	9.75 W	140,509.26	2,109,786.92	0.93	52.72	
4,001.00	3.45	16.12	16.35	-2,647.67	3,998.35	53.71 N	9.37 W	140,510.38	2,109,787.30	8.08	53.85	
4,033.00	7.82	16.30	16.53	-2,679.51	4,030.19	56.73 N	8.48 W	140,513.40	2,109,788.17	13.66	56.84	
4,064.00	11.90	16.97	17.20	-2,710.05	4,060.73	61.80 N	6.93 W	140,518.48	2,109,789.70	13.17	61.90	
4,096.00	15.51	21.03	21.26	-2,741.13	4,091.81	68.94 N	4.40 W	140,525.64	2,109,792.20	11.67	69.00	
4,127.00	17.60	23.83	24.06	-2,770.85	4,121.53	77.09 N	0.99 W	140,533.79	2,109,795.58	7.21	77.09	
4,159.00	18.55	24.74	24.97	-2,801.27	4,151.95	86.12 N	3.13 E	140,542.84	2,109,799.66	3.10	86.06	
4,190.00	19.96	23.99	24.22	-2,830.53	4,181.21	95.42 N	7.38 E	140,552.15	2,109,803.88	4.62	95.30	
4,222.00	22.44	23.04	23.27	-2,860.36	4,211.04	106.01 N	12.04 E	140,562.77	2,109,808.49	7.82	105.82	
4,253.00	26.12	22.30	22.53	-2,888.62	4,239.30	117.75 N	16.99 E	140,574.53	2,109,813.40	11.91	117.49	
4,285.00	29.58	21.80	22.03	-2,916.91	4,267.59	131.58 N	22.66 E	140,588.38	2,109,819.00	10.84	131.23	
4,317.00	32.95	20.81	21.04	-2,944.26	4,294.94	147.03 N	28.74 E	140,603.86	2,109,825.03	10.65	146.59	
4,348.00	35.06	18.96	19.19	-2,969.95	4,320.63	163.31 N	34.70 E	140,620.16	2,109,830.92	7.58	162.78	
4,380.00	36.35	16.32	16.55	-2,995.94	4,346.62	181.08 N	40.42 E	140,637.96	2,109,836.57	6.28	180.46	
4,411.00	37.63	13.51	13.74	-3,020.70	4,371.38	199.09 N	45.29 E	140,655.98	2,109,841.36	6.84	198.39	
4,443.00	39.50	11.84	12.07	-3,045.72	4,396.40	218.53 N	49.74 E	140,675.44	2,109,845.73	6.69	217.77	
4,474.00	40.67	9.87	10.10	-3,069.44	4,420.12	238.12 N	53.57 E	140,695.04	2,109,849.49	5.57	237.30	
4,506.00	42.27	8.49	8.72	-3,093.42	4,444.10	259.02 N	57.03 E	140,715.96	2,109,852.86	5.76	258.15	
4,537.00	43.80	7.24	7.47	-3,116.08	4,466.76	279.97 N	60.01 E	140,736.92	2,109,855.76	5.65	279.05	
4,569.00	45.24	5.60	5.83	-3,138.89	4,489.57	302.25 N	62.60 E	140,759.21	2,109,858.26	5.76	301.29	
4,600.00	48.05	3.88	4.11	-3,160.17	4,510.85	324.70 N	64.54 E	140,781.67	2,109,860.11	9.92	323.71	
4,632.00	50.94	2.10	2.33	-3,180.96	4,531.64	348.99 N	65.90 E	140,805.96	2,109,861.37	9.97	347.98	
4,663.00	52.36	0.37	0.60	-3,200.19	4,550.87	373.29 N	66.52 E	140,830.27	2,109,861.89	6.34	372.27	
4,695.00	53.70	359.08	359.31	-3,219.44	4,570.12	398.86 N	66.50 E	140,855.83	2,109,861.77	5.28	397.83	
4,758.00	58.29	356.97	357.20	-3,254.66	4,605.34	451.04 N	64.88 E	140,908.01	2,109,859.94	7.80	450.03	
4,852.00	58.92	357.31	357.54	-3,303.63	4,654.31	531.19 N	61.20 E	140,988.15	2,109,855.94	0.74	530.23	
4,915.00	60.21	359.06	359.29	-3,335.55	4,686.23	585.49 N	59.70 E	141,042.43	2,109,854.22	3.15	584.54	
4,947.00	62.46	1.53	1.76	-3,350.90	4,701.58	613.56 N	59.97 E	141,070.51	2,109,854.37	9.76	612.60	
4,979.00	64.89	3.31	3.54	-3,365.09	4,715.77	642.21 N	61.30 E	141,099.16	2,109,855.59	9.08	641.23	
5,010.00	66.92	4.13	4.36	-3,377.74	4,728.42	670.44 N	63.25 E	141,127.39	2,109,857.42	6.98	669.42	

**Design Report for Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
5,042.00	70.91	4.71	4.94	-3,389.25	4,739.93	700.19 N	65.67 E	141,157.16	2,109,859.73	12.58	699.14	
5,073.00	73.87	5.82	6.05	-3,398.63	4,749.31	729.60 N	68.50 E	141,186.58	2,109,862.44	10.14	728.50	
5,105.00	77.16	5.59	5.82	-3,406.63	4,757.31	760.41 N	71.71 E	141,217.40	2,109,865.52	10.30	759.26	
5,136.00	80.16	4.75	4.98	-3,412.73	4,763.41	790.67 N	74.56 E	141,247.67	2,109,868.25	10.04	789.47	
5,168.00	83.47	3.67	3.90	-3,417.28	4,767.96	822.24 N	77.01 E	141,279.25	2,109,870.58	10.87	821.01	Last MWD Survey

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
144.00	144.00	-0.19	-0.55	First MWD Survey
5,168.00	4,767.96	822.24	77.01	Last MWD Survey

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	359.15	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
144.00	5,168.00	MWD Survey	MWD+SC

**Design Targets**

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									

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**Design Report for Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774 - Wellbore #1**

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**Directional Difficulty Index**

Average Dogleg over Survey:	2.18 °/100ft	Maximum Dogleg over Survey:	13.66 °/100ft at 4,033.00 ft
Net Tortosity applicable to Plans:	0.14 °/100ft	Directional Difficulty Index:	5.028

**Audit Info**

## North Reference Sheet for Sec 30-T34S-R07W - Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774 - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to WELL @ 1350.68ft (Original Well Elev). Northing and Easting are relative to Croft Farms 3407 #30-1H/ Job#9281846 / Nabors 774

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 98° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00004918

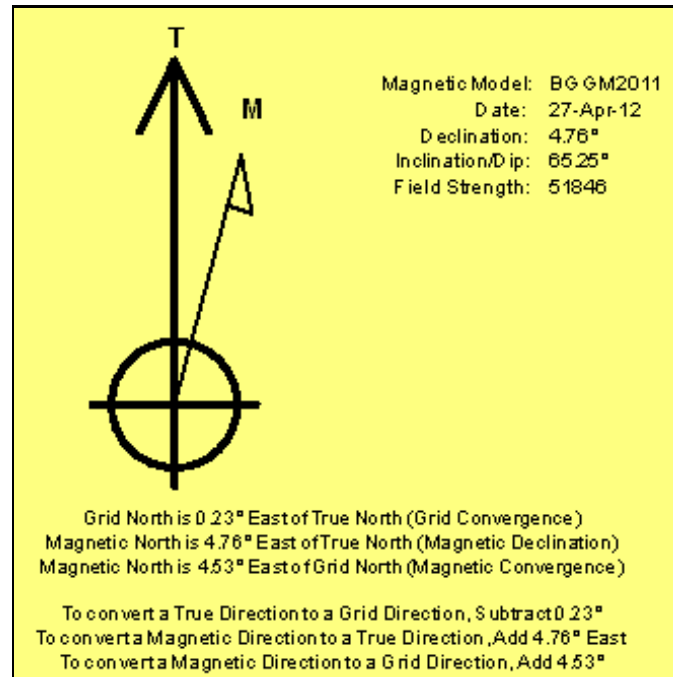
Grid Coordinates of Well: 140,456.71 ft N, 2,109,796.88 ft E

Geographical Coordinates of Well: 37° 03' 06.48" N, 098° 07' 25.67" W

Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 5,168.00ft the Bottom Hole Displacement is 825.84ft in the Direction of 5.35° (True).

Magnetic Convergence at surface is: -4.53° (27 April 2012, , BGGM2011)



# Shell Exploration and Production Company

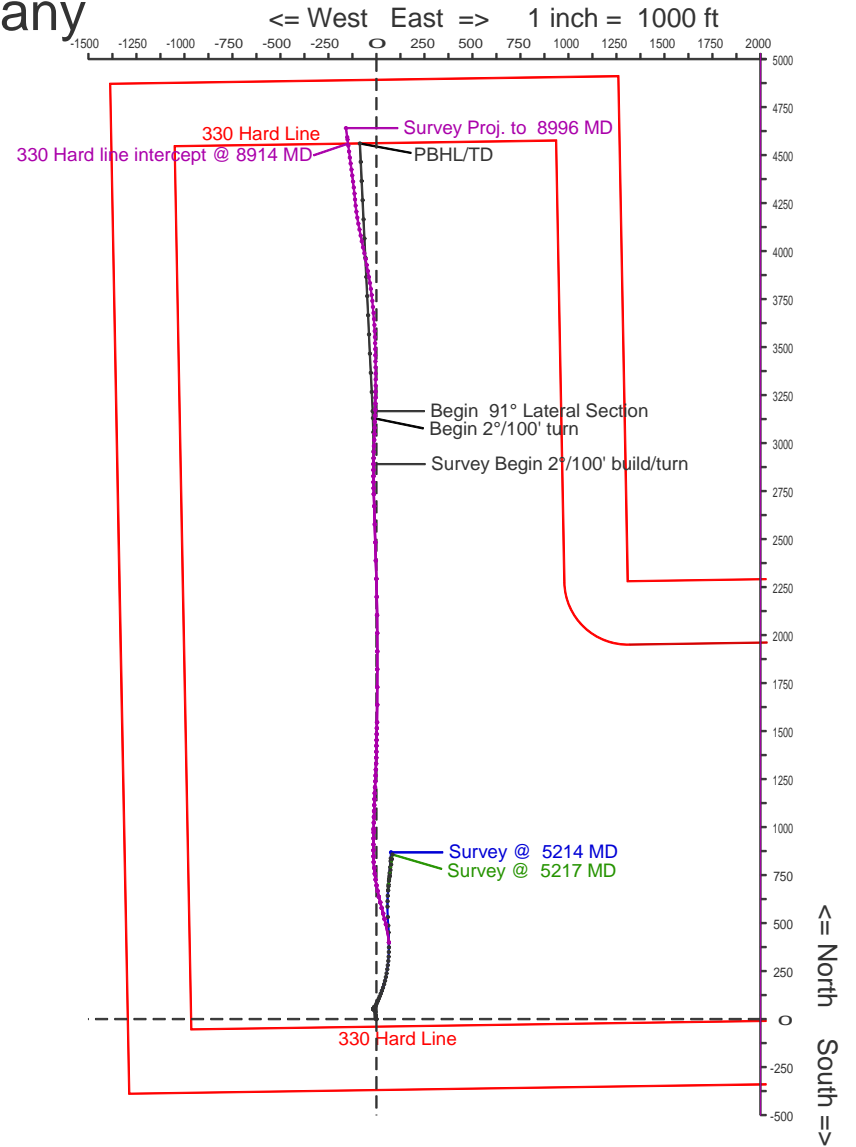
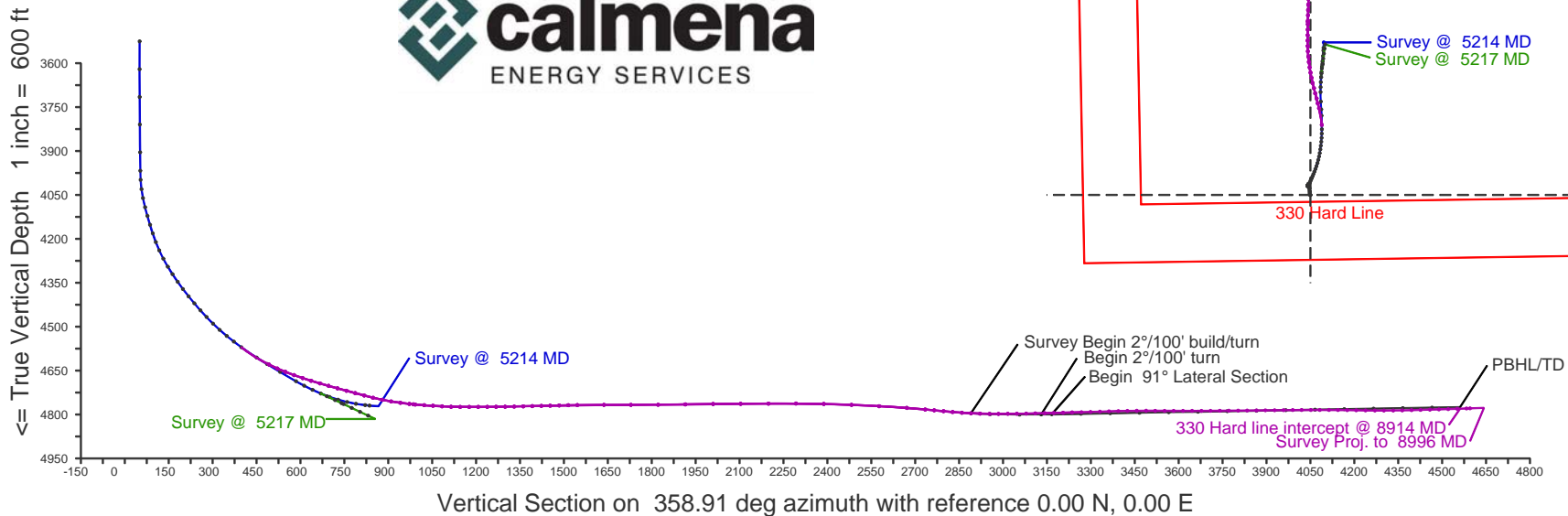


Croft Farms 3407 #30-1H

Harper County, Kansas

WELL PROFILE DATA rev5							
MD	Inc.	Azi.	TVD	N-S	E-W	DLS	Comment
7234	87.10	0.80	4796	2891	-16	0.00	Survey Begin 2°/100' build/turn
7474	91.00	357.98	4800	3131	-18	2.01	Begin 2°/100' turn
7510	91.00	357.26	4799	3166	-20	2.00	Begin 91° Lateral Section
8906	91.00	357.26	4775	4560	-86	0.00	PBHL/TD

WELL PROFILE DATA svys							
MD	Inc.	Azi.	TVD	N-S	E-W	DLS	Comment
8914	92.04	352.47	4780	4559	-148	0.70	330 Hard line intercept @ 8914 MD
8996	91.90	352.40	4777	4641	-159	0.00	Survey Proj. to 8996 MD



Vertical Section on 358.91 deg azimuth with reference 0.00 N, 0.00 E

**Calmena Energy Services**

Company: Shell Exploration and Production Company  
 Well: Croft Farms 3407 #30-1H  
 Location: Harper County, Kansas

Date: 25-Aug-2012  
 Surveys ST2  
 Page 1  
 Job# : 6701

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.91° (feet)	Az Grid Y	NAD27 Ks South gr elev=1329 RKB=1350.68 Grid X	Comments
<b>Surface Location</b>								<b>140456.71</b>	<b>2109796.88</b>	
4695.00	53.70	359.08	4570.12	399.12	64.90	0.00	397.81	140855.83	2109861.78	Tie into original hole.
4808.00	63.30	342.90	4629.38	493.57	49.21	14.84	492.54	140950.28	2109846.09	
4840.00	66.80	346.70	4642.88	521.56	41.62	15.35	520.67	140978.27	2109838.50	
4871.00	69.20	346.10	4654.49	549.49	34.86	7.95	548.73	141006.20	2109831.74	
4903.00	70.90	344.80	4665.41	578.61	27.31	6.54	577.98	141035.32	2109824.19	
4935.00	72.10	345.60	4675.56	607.95	19.56	4.44	607.46	141064.66	2109816.44	
4966.00	73.40	346.70	4684.76	636.69	12.47	5.39	636.34	141093.40	2109809.35	
4998.00	74.20	348.50	4693.69	666.70	5.87	5.95	666.47	141123.41	2109802.75	
5029.00	74.50	350.10	4702.05	696.03	0.33	5.06	695.90	141152.74	2109797.21	
5061.00	74.70	351.40	4710.55	726.48	-4.63	3.97	726.44	141183.19	2109792.25	
5093.00	75.00	353.00	4718.91	757.08	-8.82	4.92	757.11	141213.79	2109788.06	
5124.00	75.10	354.60	4726.91	786.86	-12.05	5.00	786.94	141243.57	2109784.83	
5156.00	75.20	356.50	4735.11	817.69	-14.45	5.75	817.82	141274.40	2109782.43	
5187.00	76.20	358.50	4742.77	847.70	-15.76	7.03	847.85	141304.41	2109781.12	
5219.00	78.40	359.90	4749.80	878.91	-16.20	8.09	879.06	141335.62	2109780.68	
5250.00	81.00	1.20	4755.34	909.41	-15.90	9.35	909.55	141366.12	2109780.98	
5282.00	82.30	1.00	4759.99	941.06	-15.29	4.11	941.18	141397.77	2109781.59	
5313.00	83.70	1.00	4763.77	971.83	-14.76	4.52	971.93	141428.54	2109782.12	
5327.00	84.40	1.30	4765.22	985.75	-14.48	5.44	985.84	141442.46	2109782.40	
5333.00	84.80	1.30	4765.79	991.72	-14.34	6.67	991.81	141448.43	2109782.54	
5364.00	86.30	1.10	4768.19	1022.62	-13.70	4.88	1022.69	141479.33	2109783.18	
5394.00	86.50	1.00	4770.07	1052.55	-13.15	0.75	1052.61	141509.26	2109783.73	
5425.00	86.40	1.20	4771.99	1083.49	-12.55	0.72	1083.53	141540.20	2109784.33	
5456.00	87.90	1.80	4773.54	1114.44	-11.74	5.21	1114.46	141571.15	2109785.14	
5487.00	89.90	2.50	4774.13	1145.41	-10.58	6.84	1145.40	141602.12	2109786.30	
5518.00	90.10	2.90	4774.13	1176.38	-9.12	1.44	1176.34	141633.09	2109787.76	
5549.00	90.20	3.00	4774.05	1207.33	-7.52	0.46	1207.26	141664.04	2109789.36	
5580.00	90.30	2.90	4773.91	1238.29	-5.93	0.46	1238.18	141695.00	2109790.95	
5610.00	90.50	2.90	4773.70	1268.25	-4.41	0.67	1268.11	141724.96	2109792.47	
5641.00	90.90	2.20	4773.33	1299.22	-3.03	2.60	1299.04	141755.93	2109793.85	

## Calmena Energy Services

Company: Shell Exploration and Production Company  
 Well: Croft Farms 3407 #30-1H  
 Location: Harper County, Kansas

Date: 25-Aug-2012  
 Surveys ST2  
 Page 2  
 Job# : 6701

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.91° Az (feet)	Grid Y	Grid X	Comments
5672.00	91.00	1.80	4772.81	1330.20	-1.95	1.33	1329.99	141786.91	2109794.93	
5703.00	91.30	0.80	4772.19	1361.18	-1.25	3.37	1360.96	141817.89	2109795.63	
5734.00	91.40	0.80	4771.46	1392.17	-0.81	0.32	1391.93	141848.88	2109796.07	
5765.00	91.60	1.10	4770.65	1423.16	-0.30	1.16	1422.90	141879.87	2109796.58	
5795.00	91.60	1.50	4769.81	1453.14	0.38	1.33	1452.87	141909.85	2109797.26	
5826.00	91.30	1.60	4769.03	1484.11	1.22	1.02	1483.82	141940.82	2109798.10	
5857.00	91.30	1.60	4768.32	1515.09	2.08	0.00	1514.78	141971.80	2109798.96	
5888.00	90.70	1.60	4767.78	1546.08	2.95	1.94	1545.74	142002.79	2109799.83	
5979.00	90.10	359.60	4767.15	1637.07	3.90	2.29	1636.70	142093.78	2109800.78	
6071.00	89.90	0.10	4767.15	1729.06	3.66	0.59	1728.68	142185.77	2109800.54	
6164.00	90.60	0.30	4766.74	1822.06	3.99	0.78	1821.66	142278.77	2109800.87	
6257.00	91.00	0.00	4765.44	1915.05	4.23	0.54	1914.63	142371.76	2109801.11	
6352.00	90.60	359.70	4764.12	2010.04	3.98	0.53	2009.60	142466.75	2109800.86	
6446.00	90.10	359.00	4763.54	2104.03	2.91	0.92	2103.60	142560.74	2109799.79	
6541.00	90.80	359.10	4762.79	2199.02	1.34	0.74	2198.59	142655.73	2109798.22	
6635.00	89.60	358.60	4762.47	2293.00	-0.55	1.38	2292.59	142749.71	2109796.33	
6730.00	88.80	358.20	4763.79	2387.95	-3.20	0.94	2387.58	142844.66	2109793.68	
6825.00	87.20	358.50	4767.11	2482.85	-5.93	1.71	2482.51	142939.56	2109790.95	
6919.00	87.30	358.30	4771.62	2576.70	-8.56	0.24	2576.40	143033.41	2109788.32	
7014.00	85.60	357.90	4777.50	2671.47	-11.70	1.84	2671.20	143128.18	2109785.18	
7077.00	84.70	357.90	4782.83	2734.20	-14.00	1.43	2733.97	143190.91	2109782.88	
7108.00	84.60	358.60	4785.72	2765.05	-14.94	2.27	2764.83	143221.76	2109781.94	
7140.00	84.90	359.20	4788.65	2796.91	-15.55	2.09	2796.70	143253.62	2109781.33	
7171.00	85.00	359.70	4791.37	2827.79	-15.85	1.64	2827.58	143284.50	2109781.03	
7203.00	85.90	0.00	4793.91	2859.68	-15.93	2.96	2859.47	143316.39	2109780.95	
7234.00	87.10	0.80	4795.81	2890.62	-15.72	4.65	2890.40	143347.33	2109781.16	
7265.00	88.20	1.60	4797.08	2921.59	-15.07	4.39	2921.35	143378.30	2109781.81	
7297.00	89.20	1.90	4797.80	2953.57	-14.09	3.26	2953.30	143410.28	2109782.79	
7328.00	90.40	2.10	4797.91	2984.55	-13.01	3.92	2984.26	143441.26	2109783.87	
7360.00	90.60	2.20	4797.63	3016.52	-11.81	0.70	3016.20	143473.23	2109785.07	



## Calmena Energy Services

Company: Shell Exploration and Production Company  
 Well: Croft Farms 3407 #30-1H  
 Location: Harper County, Kansas

Date: 25-Aug-2012  
 Surveys ST2  
 Page 3  
 Job# : 6701

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.91° Az (feet)	Grid Y	Grid X	Comments
7391.00	90.60	2.10	4797.31	3047.50	-10.65	0.32	3047.15	143504.21	2109786.23	
7423.00	90.90	2.00	4796.89	3079.48	-9.50	0.99	3079.10	143536.19	2109787.38	
7454.00	91.20	1.90	4796.32	3110.45	-8.45	1.02	3110.05	143567.16	2109788.43	
7486.00	91.30	1.90	4795.62	3142.43	-7.39	0.31	3142.00	143599.14	2109789.49	
7517.00	91.40	1.40	4794.89	3173.41	-6.49	1.64	3172.96	143630.12	2109790.39	
7549.00	91.70	1.40	4794.03	3205.39	-5.71	0.94	3204.91	143662.10	2109791.17	
7580.00	91.80	1.40	4793.08	3236.36	-4.95	0.32	3235.87	143693.07	2109791.93	
7612.00	91.70	0.60	4792.10	3268.34	-4.40	2.52	3267.83	143725.05	2109792.48	
7643.00	91.60	0.20	4791.21	3299.33	-4.18	1.33	3298.81	143756.04	2109792.70	
7675.00	92.10	0.00	4790.18	3331.31	-4.12	1.68	3330.79	143788.02	2109792.76	
7706.00	91.50	359.10	4789.20	3362.30	-4.37	3.49	3361.77	143819.01	2109792.51	
7738.00	91.70	359.00	4788.31	3394.28	-4.90	0.70	3393.76	143850.99	2109791.98	
7769.00	91.20	358.00	4787.52	3425.26	-5.71	3.61	3424.75	143881.97	2109791.17	
7801.00	90.50	359.40	4787.05	3457.24	-6.44	4.89	3456.74	143913.95	2109790.44	
7833.00	89.70	359.50	4786.99	3489.24	-6.74	2.52	3488.74	143945.95	2109790.14	
7864.00	89.40	359.30	4787.24	3520.24	-7.07	1.16	3519.74	143976.95	2109789.81	
7896.00	89.70	358.10	4787.49	3552.23	-7.79	3.87	3551.74	144008.94	2109789.09	
7927.00	90.20	357.10	4787.52	3583.20	-9.09	3.61	3582.73	144039.91	2109787.79	
7959.00	90.00	356.90	4787.46	3615.16	-10.77	0.88	3614.71	144071.87	2109786.11	
7990.00	89.90	356.00	4787.49	3646.10	-12.69	2.92	3645.68	144102.81	2109784.19	
8022.00	89.80	354.80	4787.57	3677.99	-15.25	3.76	3677.62	144134.70	2109781.63	
8053.00	90.60	354.10	4787.46	3708.85	-18.25	3.43	3708.52	144165.56	2109778.63	
8085.00	90.40	353.90	4787.18	3740.67	-21.59	0.88	3740.41	144197.38	2109775.29	
8116.00	90.50	353.10	4786.94	3771.47	-25.10	2.60	3771.27	144228.18	2109771.78	
8148.00	90.50	352.00	4786.66	3803.20	-29.25	3.44	3803.07	144259.91	2109767.63	
8179.00	90.50	350.70	4786.39	3833.85	-33.91	4.19	3833.80	144290.56	2109762.97	
8211.00	90.60	349.30	4786.08	3865.36	-39.47	4.39	3865.41	144322.07	2109757.41	
8242.00	90.70	350.80	4785.73	3895.89	-44.83	4.85	3896.04	144352.60	2109752.05	
8274.00	90.40	349.50	4785.42	3927.41	-50.30	4.17	3927.66	144384.12	2109746.58	
8305.00	90.70	347.60	4785.13	3957.79	-56.45	6.20	3958.15	144414.50	2109740.43	

## Calmena Energy Services

Company: Shell Exploration and Production Company  
 Well: Croft Farms 3407 #30-1H  
 Location: Harper County, Kansas

Date: 25-Aug-2012  
 Surveys ST2  
 Page 4  
 Job# : 6701

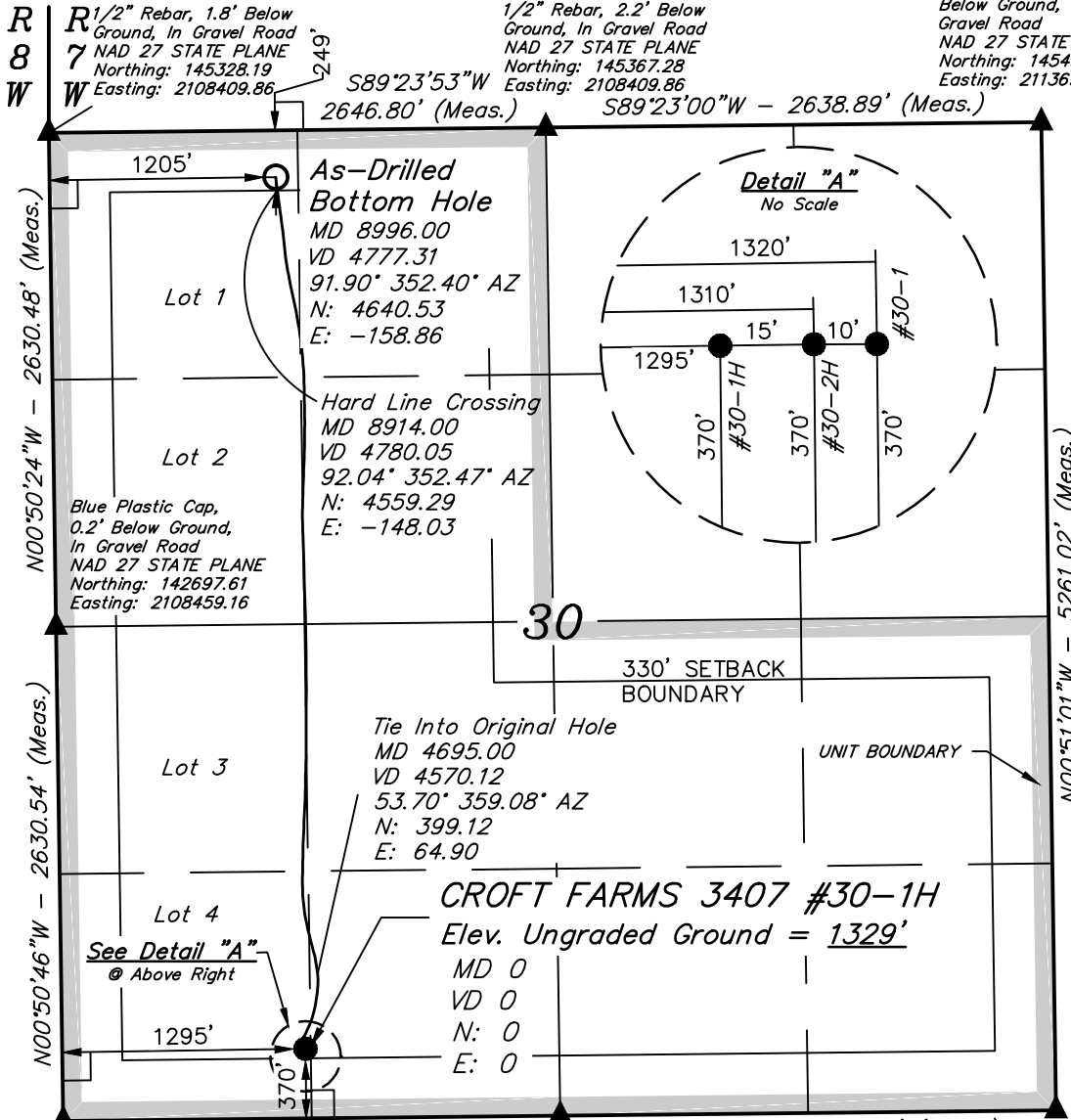
MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.91° Az (feet)	Grid Y	Grid X	Comments
8337.00	90.70	347.20	4784.74	3989.02	-63.43	1.25	3989.51	144445.73	2109733.45	
8368.00	89.90	348.20	4784.57	4019.31	-70.04	4.13	4019.91	144476.02	2109726.84	
8400.00	90.20	348.40	4784.55	4050.64	-76.53	1.13	4051.37	144507.35	2109720.35	
8431.00	90.10	349.40	4784.46	4081.06	-82.50	3.24	4081.89	144537.77	2109714.38	
8463.00	89.90	348.70	4784.46	4112.48	-88.57	2.28	4113.42	144569.19	2109708.31	
8494.00	89.40	349.70	4784.65	4142.93	-94.38	3.61	4143.98	144599.64	2109702.50	
8526.00	89.20	350.20	4785.04	4174.44	-99.97	1.68	4175.58	144631.15	2109696.91	
8557.00	89.10	352.00	4785.50	4205.06	-104.76	5.81	4206.29	144661.77	2109692.12	
8589.00	89.20	354.10	4785.98	4236.82	-108.63	6.57	4238.12	144693.53	2109688.25	
8621.00	89.50	355.10	4786.34	4268.67	-111.64	3.26	4270.03	144725.38	2109685.24	
8652.00	90.00	353.70	4786.48	4299.52	-114.67	4.80	4300.93	144756.23	2109682.21	
8684.00	90.40	353.20	4786.37	4331.32	-118.32	2.00	4332.78	144788.03	2109678.56	
8715.00	91.30	352.70	4785.91	4362.08	-122.12	3.32	4363.61	144818.79	2109674.76	
8747.00	91.40	352.50	4785.15	4393.80	-126.24	0.70	4395.41	144850.51	2109670.64	
8778.00	91.40	352.40	4784.39	4424.52	-130.32	0.32	4426.20	144881.23	2109666.56	
8810.00	91.70	352.50	4783.53	4456.24	-134.52	0.99	4457.99	144912.95	2109662.36	
8841.00	91.80	352.50	4782.58	4486.96	-138.56	0.32	4488.78	144943.67	2109658.32	
8873.00	92.00	352.60	4781.52	4518.67	-142.71	0.70	4520.57	144975.38	2109654.17	
8904.00	92.10	352.50	4780.41	4549.39	-146.73	0.46	4551.35	145006.10	2109650.15	
8914.00	92.04	352.47	4780.05	4559.29	-148.03	0.70	4561.29	145016.00	2109648.85	330 Hard line intercept
8936.00	91.90	352.40	4779.30	4581.09	-150.93	0.70	4583.13	145037.80	2109645.95	
8948.00	91.90	352.40	4778.90	4592.98	-152.52	0.00	4595.05	145049.69	2109644.36	
8996.00	91.90	352.40	4777.31	4640.53	-158.86	0.00	4642.71	145097.24	2109638.02	Survey Proj. to 8996 MD

# T34S, R7W, 6th P.M.

SGOMI

1/2" Rebar, 1.2' Below Ground, In Gravel Road  
NAD 27 STATE PLANE  
Northing: 145406.60  
Easting: 2113695.14

Well location, CROFT FARMS 3407 #30-1H, located as shown in Lot 4 of Section 30, T34S, R7W, 6th P.M., Harper County, Kansas.

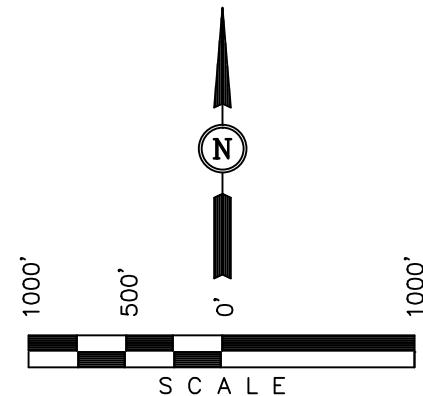


## BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE NORTHEAST CORNER OF SECTION 22, T33S, R7W, 6th P.M. TAKEN FROM THE ANTHONY, QUADRANGLE, KANSAS, HARPER COUNTY, 7.5 MINUTE QUAD (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 1348 FEET.

## BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



## CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

*Robert J. Quinn*  
REGISTERED LAND SURVEYOR  
REGISTRATION NO. 1457  
STATE OF KANSAS 40-49-12

2" Alum. Cap, 0.5' Below Ground, In Gravel Road  
NAD 27 STATE PLANE  
Northing: 140145.08  
Easting: 2113793.89

## LEGEND:

- = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

NAD 83 (#30-1H AS DRILLED BOTTOM HOLE)	NAD 83 (#30-1H SURFACE LOCATION)
LATITUDE = 37°03'52.46" (37.064572)	LATITUDE = 37°03'06.57" (37.051825)
LONGITUDE = 98°07'28.87" (98.124686)	LONGITUDE = 98°07'26.90" (98.124139)
NAD 27 (#30-1H AS DRILLED BOTTOM HOLE)	NAD 27 (#30-1H SURFACE LOCATION)
LATITUDE = 37°03'52.37" (37.064547)	LATITUDE = 37°03'06.48" (37.051800)
LONGITUDE = 98°07'27.63" (98.124342)	LONGITUDE = 98°07'25.67" (98.123797)
STATE PLANE NAD 27	STATE PLANE NAD 27
N: 145097.24 E: 2109618.79	N: 140456.71 E: 2109796.88

<b>UINTAH ENGINEERING &amp; LAND SURVEYING</b> 85 SOUTH 200 EAST - VERNAL, UTAH 84078 (435) 789-1017		
SCALE 1" = 1000'	DATE SURVEYED: 08-25-12	DATE DRAWN: 10-26-12
PARTY L.S. D.S. C.A.G.	REFERENCES G.L.O. PLAT	
WEATHER WARM	FILE SGOMI	

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

November 08, 2012

Damonica Pierson  
Shell Gulf of Mexico Inc.  
150 N DAIRY-ASHFORD (77079)  
PO BOX 576 (77001-0576)  
HOUSTON, TX 77001-0576

Re: ACO1  
API 15-077-21814-01-00  
Croft Farms 3407 30-1H  
SW/4 Sec.30-34S-07W  
Harper 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,  
Damonica Pierson