



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1228578
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: _____

1228578

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: 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: _____ _____
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Customer <i>OSAGE-RESOURCES</i>	Lease No.	Date	
Lease <i>OSAGE</i>	Well # <i>3313 18-03Hc</i>	<i>07-20-14</i>	
Field Order # <i>10856</i>	Station <i>PRR #</i>	Casing <i>OP</i>	Depth
Type Job <i>CAW PlayBACK</i>	Formation	County <i>BARBER</i>	State <i>KS</i>
		Legal Description <i>18-33-13</i>	

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth	Depth <i>14</i>	From	To	Pre Pad	Max		5 Min.
Volume	Volume <i>14</i>	From	To	Pad	Min		10 Min.
Max Press	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative	Station Manager <i>Dave Scott</i>	Treater <i>Robert [Signature]</i>
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Service Units	<i>37900</i>	<i>33708</i>	<i>20920</i>	<i>19960</i>	<i>21000</i>				
Driver Names	<i>Willie</i>	<i>Eric</i>		<i>Phye</i>					

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>6:00</i>					<i>on loc</i>
					<i>Set PlayBACK @ 5600'</i>
					<i>2</i>
<i>7:00</i>			<i>3</i>	<i>4.5</i>	<i>AT SPACIL</i>
			<i>14</i>		<i>mix cont 75% common @ 16ppg. 1.12 yield 4.7194%</i>
					<i>cont mixed</i>
				<i>5</i>	<i>ST Disp</i>
<i>7:20</i>			<i>50</i>		<i>Play down</i>
					<i>PULL 4 STANOS</i>
					<i>Hook Rig circ. 400 dead</i>
					<i>circ 405 BBL cont P/T</i>
					<i>JOB Complete</i>
					<i>Thank [Signature]</i>

RECEIVED

JUL 25 2014

Customer <i>Osage Resources</i>	Lease No.	Date <i>7-29-14</i>	
Lease <i>Osage</i>	Well # <i>3513 18-03MC</i>		
Field Order # <i>1115A</i>	Station <i>Pratt</i>	Casing <i>4 1/2</i>	Depth <i>9515</i>
Type Job <i>Job</i>	Formation	County <i>Barber</i>	State <i>KS</i>
		Legal Description <i>18-335-136</i>	

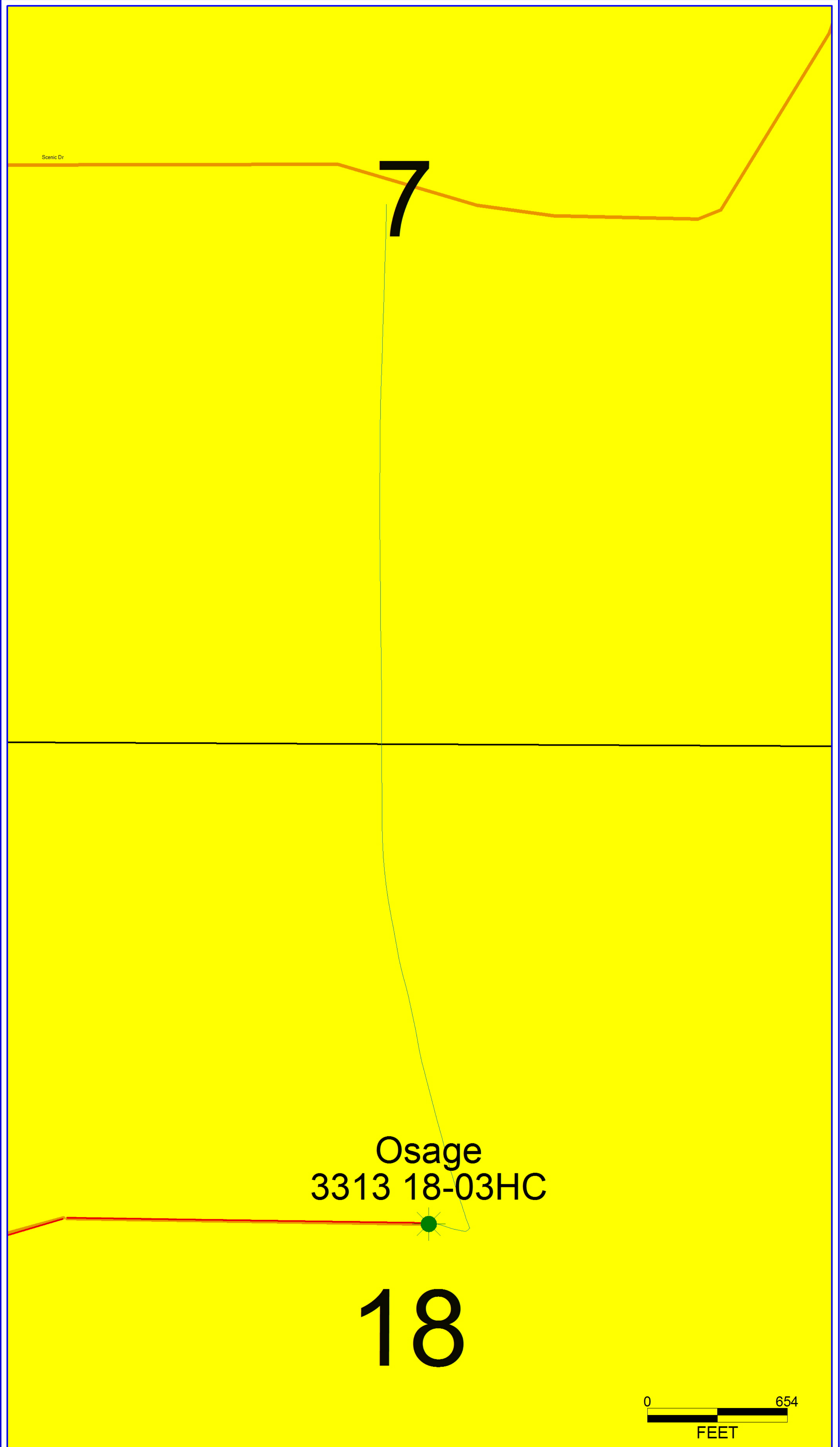
PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size <i>4 1/2</i>	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth <i>9515</i>	Depth	From	To	Pre Pad	Max		5 Min.
Volume <i>111</i>	Volume	From	To	Pad	Min		10 Min.
Max Press <i>5000</i>	Max Press	From	To	Frac	Avg		15 Min.
Well Connection <i>4 1/2</i>	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative			Station Manager <i>Kevin Goodley</i>			Treater <i>Scott Graves</i>		
Service Units	<i>75443</i>	<i>77686</i>	<i>19960</i>					
Driver Names	<i>Scott</i>	<i>Mike</i>	<i>Adrian</i>					

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>4:30</i>					<i>On location Safety Meeting Rig up.</i>
<i>5:40</i>					<i>Pump ball with rig</i>
<i>6:03</i>					<i>ball landed + opened</i>
<i>6:18</i>	<i>5000</i>				<i>Pressure Test</i>
<i>6:22</i>	<i>0</i>		<i>5</i>	<i>5.1</i>	<i>Pump H2O spacer</i>
<i>6:24</i>	<i>2000</i>		<i>12</i>	<i>4.7</i>	<i>Pump Mud flush</i>
<i>6:28</i>	<i>1100</i>		<i>5</i>	<i>5.2</i>	<i>Pump H2O spacer</i>
<i>6:30</i>	<i>1400</i>		<i>86</i>	<i>5.2</i>	<i>Pump 320515 50/50 P02 at 13.6 app</i>
<i>6:50</i>					<i>Wash Pump + line</i>
<i>6:51</i>					<i>Drop Bomb/Dart</i>
<i>6:52</i>	<i>200</i>			<i>6.1</i>	<i>Start Displacement</i>
<i>7:01</i>	<i>1700</i>		<i>43</i>	<i>3.2</i>	<i>land dart</i>
<i>7:16</i>	<i>1200</i>		<i>105</i>	<i>2.9</i>	<i>Slow Rate</i>
<i>7:18</i>	<i>1500</i>		<i>111</i>		<i>Dart landed</i>
<i>7:18</i>	<i>2100</i>				<i>Increase pressure to set tool</i>
<i>7:30</i>					<i>set packer</i>
<i>7:35</i>			<i>200</i>	<i>5</i>	<i>Circulate well clear</i>
<i>8:10</i>					<i>Shut down Job Complete</i>

RECEIVED

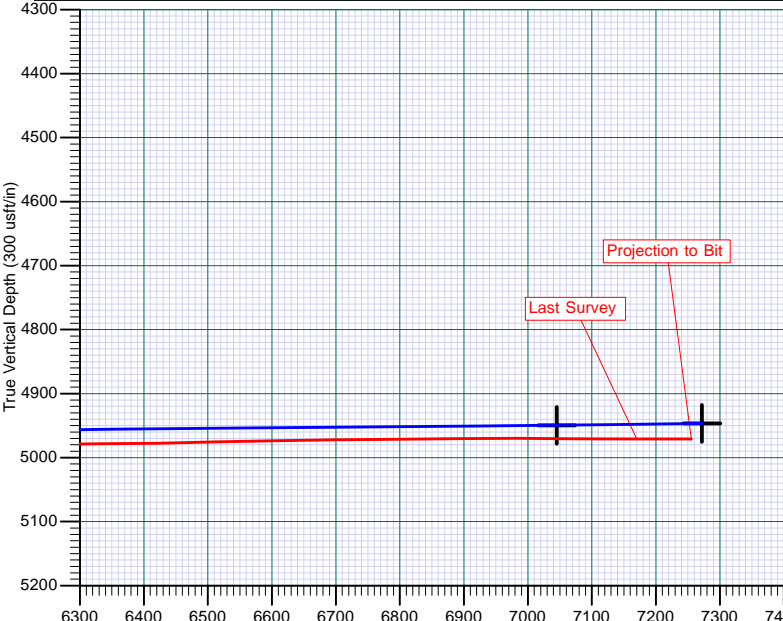
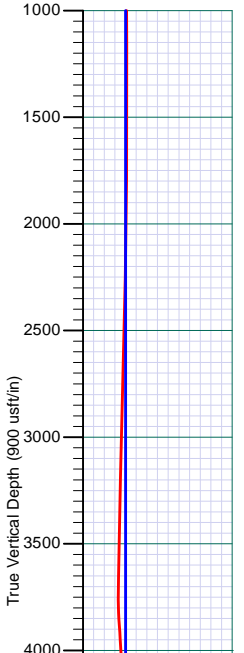
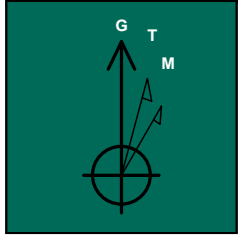
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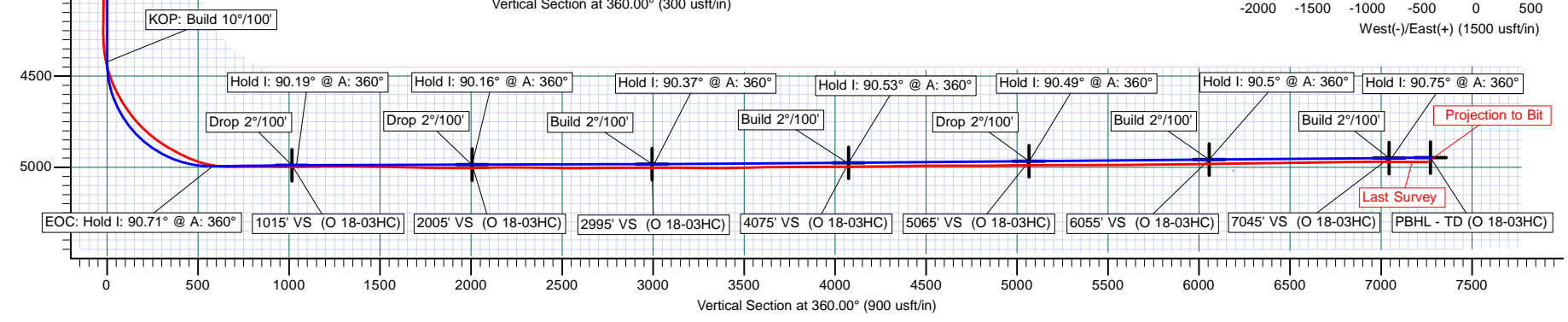
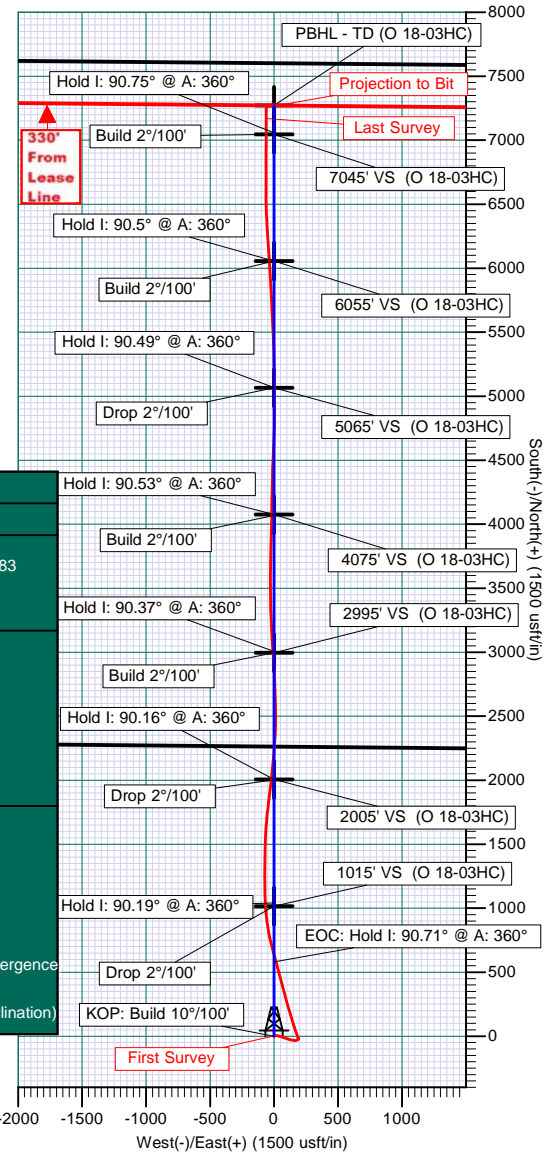
PLAN SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4421.3	0.00	0.00	4421.3	0.0	0.0	0.00	0.00	0.0		KOP: Build 10°/100'
3	5328.4	90.71	0.00	4994.2	580.1	0.0	10.00	0.00	580.1		EOC: Hold I: 90.71° @ A: 360°
4	5763.4	90.71	0.00	4988.8	1015.0	0.0	0.00	0.00	1015.0	1015' VS (O 18-03HC)	Drop 2°/100'
5	5789.3	90.19	0.00	4988.6	1040.9	0.0	2.00	180.00	1040.9		Hold I: 90.19° @ A: 360°
6	6751.9	90.19	0.00	4985.4	2003.5	0.0	0.00	0.00	2003.5		Drop 2°/100'
7	6753.4	90.16	360.00	4985.4	2005.0	0.0	2.00	-180.00	2005.0	2005' VS (O 18-03HC)	Hold I: 90.16° @ A: 360°
8	7743.4	90.16	360.00	4982.6	2995.0	0.0	0.00	0.00	2995.0	2995' VS (O 18-03HC)	Build 2°/100'
9	7753.7	90.37	0.00	4982.5	3005.3	0.0	2.00	0.00	3005.3		Hold I: 90.37° @ A: 360°
10	8815.5	90.37	0.00	4975.7	4067.1	0.0	0.00	0.00	4067.1		Build 2°/100'
11	8823.4	90.53	360.00	4975.7	4075.0	0.0	2.00	0.00	4075.0	4075' VS (O 18-03HC)	Hold I: 90.53° @ A: 360°
12	9813.4	90.53	360.00	4986.6	5065.0	0.0	0.00	0.00	5065.0	5065' VS (O 18-03HC)	Drop 2°/100'
13	9815.5	90.49	0.00	4986.6	5067.0	0.0	2.00	180.00	5067.0		Hold I: 90.49° @ A: 360°
14	10803.0	90.49	0.00	4988.2	6054.5	0.0	0.00	0.00	6054.5		Build 2°/100'
15	10803.5	90.50	360.00	4988.1	6055.0	0.0	2.00	0.00	6055.0	6055' VS (O 18-03HC)	Build 2°/100'
16	11793.5	90.50	360.00	4949.6	7045.0	0.0	0.00	0.00	7045.0	7045' VS (O 18-03HC)	Build 2°/100'
17	11806.2	90.75	0.00	4949.4	7057.7	0.0	2.00	0.00	7057.7		Hold I: 90.75° @ A: 360°
18	12020.3	90.75	0.00	4946.6	7271.8	0.0	0.00	0.00	7271.8	PBHL - TD (O 18-03HC)	

TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL - TD (O 18-03HC)	4946.6	7271.8	0.0	1504679.77	1231950.58	37° 11' 40.491 N	98° 46' 33.434 W	Point		
7045' VS (O 18-03HC)	4949.6	7045.0	0.0	1504453.02	1231950.58	37° 11' 38.249 N	98° 46' 33.426 W	Point		
6055' VS (O 18-03HC)	4958.1	6055.0	0.0	1503463.02	1231950.58	37° 11' 28.461 N	98° 46' 33.389 W	Point		
5065' VS (O 18-03HC)	4966.6	5065.0	0.0	1502473.02	1231950.58	37° 11' 18.673 N	98° 46' 33.353 W	Point		
4075' VS (O 18-03HC)	4975.7	4075.0	0.0	1501483.02	1231950.58	37° 11' 8.885 N	98° 46' 33.317 W	Point		
2995' VS (O 18-03HC)	4982.6	2995.0	0.0	1500403.02	1231950.58	37° 10' 58.207 N	98° 46' 33.278 W	Point		
2005' VS (O 18-03HC)	4985.4	2005.0	0.0	1499413.02	1231950.58	37° 10' 48.419 N	98° 46' 33.241 W	Point		
1015' VS (O 18-03HC)	4988.8	1015.0	0.0	1498423.02	1231950.58	37° 10' 38.631 N	98° 46' 33.205 W	Point		

Operator: Osage Resources, LLC
 Location: Barber Co, Kansas (NAD-83)
 Well Name: Osage #3313 18-03HC
 Calmena Job# 14071



WELLBORE: Lateral #1
 PLAN: Design #2
 GEODETIC SYSTEM: US State Plane 1983
 DATUM: North American Datum 1983
 ELLIPSOID: GRS 1980
 ZONE: Kansas Southern Zone
 SYSTEM DATUM: Mean Sea Level
 SURFACE HOLE COORDINATES
 LATITUDE: 37° 10' 28.596 N
 LONGITUDE: 98° 46' 33.168 W
 NORTHING (Y): 1497408.02
 EASTING (X): 1231950.58
 GROUND LEVEL: 1874.0
 RIG FLOOR(KB):
 WELL @ 1891.0usft (Original Well Elev)
 MAGNETIC FIELD:
 STRENGTH: 51619
 DIP ANGLE: 65.14°
 MODEL: IGRF2010
 DATE: 13-Jun-14
 AZIMUTHS CORRECTED TO: Grid
 MWD - USE IF ABOVE IS GRID
 Magnetic North is 4.97° East of Grid North (Magnetic Convergence)
 MWD - USE IF ABOVE IS TRUE
 Magnetic North is 4.81° East of True North (Magnetic Declination)



Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3313 18-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3313 18-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3313 18-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Project	Barber Co, Kansas (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Kansas Southern Zone		

Site	Osage #3313 18-03HC				
Site Position:		Northing:	1,497,408.02 usft	Latitude:	37° 10' 28.596 N
From:	Lat/Long	Easting:	1,231,950.58 usft	Longitude:	98° 46' 33.168 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.17 °

Well	Osage #3313 18-03HC					
Well Position	+N/-S	0.0 usft	Northing:	1,497,408.02 usft	Latitude:	37° 10' 28.596 N
	+E/-W	0.0 usft	Easting:	1,231,950.58 usft	Longitude:	98° 46' 33.168 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	1,891.0 usft	Ground Level:	1,874.0 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/13/2014	4.81	65.14	51,619

Design	Lateral #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	360.00	

Survey Program	Date	7/16/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
602.0	12,003.0	Survey #1 (Lateral #1)	MWD	MWD - Calmena	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
602.0	0.60	37.10	602.0	2.5	1.9	2.5	0.10	0.10	0.00	
First Survey										
1,160.0	0.80	75.40	1,159.9	5.8	7.4	5.8	0.09	0.04	6.86	
1,789.0	1.90	102.10	1,788.8	4.7	21.9	4.7	0.20	0.17	4.24	
2,255.0	4.10	105.30	2,254.1	-1.3	45.5	-1.3	0.47	0.47	0.69	
2,722.0	4.60	110.80	2,719.8	-12.3	79.1	-12.3	0.14	0.11	1.18	
3,189.0	4.20	105.70	3,185.4	-23.6	113.1	-23.6	0.12	-0.09	-1.09	
3,654.0	6.40	100.10	3,648.4	-32.8	155.0	-32.8	0.49	0.47	-1.20	
3,768.0	6.90	94.00	3,761.6	-34.3	168.1	-34.3	0.76	0.44	-5.35	
3,829.0	6.70	68.60	3,822.2	-33.3	175.1	-33.3	4.90	-0.33	-41.64	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3313 18-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3313 18-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3313 18-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,861.0	7.40	57.50	3,853.9	-31.5	178.5	-31.5	4.78	2.19	-34.69	
3,922.0	6.60	47.10	3,914.5	-27.0	184.4	-27.0	2.45	-1.31	-17.05	
3,954.0	5.10	40.30	3,946.3	-24.7	186.7	-24.7	5.16	-4.69	-21.25	
4,016.0	2.30	26.30	4,008.2	-21.5	189.0	-21.5	4.71	-4.52	-22.58	
4,047.0	1.50	31.90	4,039.2	-20.6	189.5	-20.6	2.65	-2.58	18.06	
4,078.0	1.10	36.00	4,070.2	-20.0	189.9	-20.0	1.32	-1.29	13.23	
4,108.0	0.90	81.00	4,100.2	-19.7	190.3	-19.7	2.62	-0.67	150.00	
4,139.0	1.50	126.60	4,131.2	-19.9	190.9	-19.9	3.49	1.94	147.10	
4,170.0	1.60	125.60	4,162.1	-20.4	191.5	-20.4	0.33	0.32	-3.23	
4,201.0	1.10	123.20	4,193.1	-20.8	192.1	-20.8	1.62	-1.61	-7.74	
4,233.0	0.30	128.50	4,225.1	-21.0	192.5	-21.0	2.51	-2.50	16.56	
4,264.0	0.90	296.60	4,256.1	-21.0	192.3	-21.0	3.86	1.94	542.26	
4,295.0	1.40	305.00	4,287.1	-20.7	191.8	-20.7	1.70	1.61	27.10	
4,326.0	3.50	332.10	4,318.1	-19.6	191.0	-19.6	7.56	6.77	87.42	
4,357.0	6.60	339.00	4,349.0	-17.1	189.9	-17.1	10.17	10.00	22.26	
4,388.0	9.30	339.80	4,379.7	-13.1	188.4	-13.1	8.72	8.71	2.58	
4,419.0	11.70	338.30	4,410.2	-7.8	186.4	-7.8	7.79	7.74	-4.84	
4,450.0	14.20	337.90	4,440.4	-1.4	183.8	-1.4	8.07	8.06	-1.29	
4,482.0	16.90	340.30	4,471.2	6.6	180.8	6.6	8.67	8.44	7.50	
4,513.0	19.50	341.20	4,500.6	15.8	177.6	15.8	8.44	8.39	2.90	
4,545.0	22.90	341.50	4,530.5	26.8	173.9	26.8	10.63	10.63	0.94	
4,576.0	26.00	341.90	4,558.7	38.9	169.9	38.9	10.01	10.00	1.29	
4,608.0	27.80	342.40	4,587.2	52.7	165.4	52.7	5.67	5.63	1.56	
4,639.0	30.20	342.50	4,614.3	67.0	160.9	67.0	7.74	7.74	0.32	
4,671.0	33.10	341.80	4,641.6	83.0	155.7	83.0	9.13	9.06	-2.19	
4,703.0	35.90	340.90	4,667.9	100.2	149.9	100.2	8.89	8.75	-2.81	
4,734.0	37.30	340.70	4,692.8	117.6	143.9	117.6	4.53	4.52	-0.65	
4,766.0	38.90	341.80	4,718.0	136.3	137.5	136.3	5.43	5.00	3.44	
4,797.0	41.30	341.70	4,741.7	155.3	131.3	155.3	7.74	7.74	-0.32	
4,829.0	44.40	342.00	4,765.2	176.0	124.5	176.0	9.71	9.69	0.94	
4,860.0	47.00	343.20	4,786.8	197.2	117.9	197.2	8.83	8.39	3.87	
4,891.0	49.50	344.10	4,807.5	219.3	111.4	219.3	8.35	8.06	2.90	
4,923.0	52.20	344.80	4,827.7	243.3	104.7	243.3	8.61	8.44	2.19	
4,954.0	54.40	345.20	4,846.2	267.3	98.3	267.3	7.17	7.10	1.29	
4,985.0	56.50	345.10	4,863.8	291.9	91.7	291.9	6.78	6.77	-0.32	
5,016.0	58.80	345.30	4,880.4	317.3	85.0	317.3	7.44	7.42	0.65	
5,047.0	60.80	345.20	4,895.9	343.2	78.2	343.2	6.46	6.45	-0.32	
5,078.0	62.80	345.10	4,910.6	369.6	71.2	369.6	6.46	6.45	-0.32	
5,109.0	64.10	344.90	4,924.5	396.4	64.0	396.4	4.23	4.19	-0.65	
5,140.0	64.50	344.70	4,937.9	423.3	56.7	423.3	1.42	1.29	-0.65	
5,171.0	66.90	344.80	4,950.7	450.6	49.3	450.6	7.75	7.74	0.32	
5,202.0	69.90	345.40	4,962.1	478.4	41.9	478.4	9.84	9.68	1.94	
5,233.0	73.10	345.50	4,971.9	506.9	34.5	506.9	10.33	10.32	0.32	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3313 18-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3313 18-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3313 18-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,264.0	76.10	345.40	4,980.1	535.8	27.0	535.8	9.68	9.68	-0.32	
5,295.0	79.10	345.30	4,986.8	565.1	19.3	565.1	9.68	9.68	-0.32	
5,326.0	81.90	345.30	4,991.9	594.7	11.6	594.7	9.03	9.03	0.00	
5,373.0	87.50	345.30	4,996.2	639.9	-0.3	639.9	11.91	11.91	0.00	
5,403.0	89.60	345.30	4,997.0	668.9	-7.9	668.9	7.00	7.00	0.00	
5,434.0	90.10	345.30	4,997.1	698.9	-15.8	698.9	1.61	1.61	0.00	
5,465.0	90.60	345.30	4,996.9	728.9	-23.6	728.9	1.61	1.61	0.00	
5,496.0	90.70	346.80	4,996.5	759.0	-31.1	759.0	4.85	0.32	4.84	
5,570.0	90.30	350.20	4,995.9	831.5	-45.9	831.5	4.63	-0.54	4.59	
5,665.0	88.80	354.30	4,996.6	925.6	-58.7	925.6	4.60	-1.58	4.32	
5,725.0	90.40	355.30	4,997.1	985.3	-64.1	985.3	3.14	2.67	1.67	
5,865.0	90.70	358.50	4,995.7	1,125.1	-71.7	1,125.1	2.30	0.21	2.29	
5,895.0	91.00	359.60	4,995.3	1,155.1	-72.2	1,155.1	3.80	1.00	3.67	
5,926.0	91.30	359.90	4,994.6	1,186.1	-72.3	1,186.1	1.37	0.97	0.97	
5,957.0	90.20	359.60	4,994.2	1,217.1	-72.4	1,217.1	3.68	-3.55	-0.97	
5,987.0	90.60	359.20	4,994.0	1,247.1	-72.8	1,247.1	1.89	1.33	-1.33	
6,018.0	90.30	0.30	4,993.8	1,278.1	-72.9	1,278.1	3.68	-0.97	3.55	
6,049.0	90.50	0.40	4,993.6	1,309.1	-72.7	1,309.1	0.72	0.65	0.32	
6,080.0	89.80	0.90	4,993.5	1,340.1	-72.4	1,340.1	2.77	-2.26	1.61	
6,111.0	88.50	1.20	4,994.0	1,371.1	-71.8	1,371.1	4.30	-4.19	0.97	
6,141.0	88.40	1.20	4,994.8	1,401.0	-71.2	1,401.0	0.33	-0.33	0.00	
6,172.0	88.70	0.80	4,995.5	1,432.0	-70.6	1,432.0	1.61	0.97	-1.29	
6,203.0	88.50	2.00	4,996.3	1,463.0	-69.9	1,463.0	3.92	-0.65	3.87	
6,234.0	88.80	2.00	4,997.0	1,494.0	-68.8	1,494.0	0.97	0.97	0.00	
6,264.0	89.10	1.60	4,997.6	1,524.0	-67.8	1,524.0	1.67	1.00	-1.33	
6,295.0	88.40	2.30	4,998.3	1,554.9	-66.8	1,554.9	3.19	-2.26	2.26	
6,326.0	88.70	2.80	4,999.0	1,585.9	-65.4	1,585.9	1.88	0.97	1.61	
6,357.0	88.30	4.20	4,999.9	1,616.8	-63.5	1,616.8	4.70	-1.29	4.52	
6,387.0	88.50	4.40	5,000.7	1,646.7	-61.3	1,646.7	0.94	0.67	0.67	
6,418.0	88.70	4.40	5,001.5	1,677.6	-58.9	1,677.6	0.65	0.65	0.00	
6,449.0	88.40	5.70	5,002.2	1,708.5	-56.2	1,708.5	4.30	-0.97	4.19	
6,479.0	88.50	5.80	5,003.0	1,738.3	-53.2	1,738.3	0.47	0.33	0.33	
6,510.0	89.40	6.40	5,003.6	1,769.1	-49.9	1,769.1	3.49	2.90	1.94	
6,572.0	90.10	5.90	5,003.9	1,830.8	-43.2	1,830.8	1.39	1.13	-0.81	
6,633.0	89.70	7.00	5,004.0	1,891.4	-36.4	1,891.4	1.92	-0.66	1.80	
6,695.0	89.90	7.30	5,004.2	1,952.9	-28.6	1,952.9	0.58	0.32	0.48	
6,787.0	91.60	7.40	5,003.0	2,044.2	-16.9	2,044.2	1.85	1.85	0.11	
6,879.0	90.80	5.20	5,001.1	2,135.6	-6.8	2,135.6	2.54	-0.87	-2.39	
6,971.0	89.40	3.70	5,000.9	2,227.3	0.4	2,227.3	2.23	-1.52	-1.63	
7,064.0	89.70	3.60	5,001.7	2,320.1	6.3	2,320.1	0.34	0.32	-0.11	
7,156.0	88.90	2.10	5,002.8	2,412.0	10.8	2,412.0	1.85	-0.87	-1.63	
7,248.0	89.00	360.00	5,004.5	2,503.9	12.5	2,503.9	2.28	0.11	-2.28	
7,340.0	89.80	358.60	5,005.4	2,595.9	11.4	2,595.9	1.75	0.87	-1.52	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3313 18-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3313 18-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3313 18-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,433.0	90.90	357.50	5,004.9	2,688.9	8.2	2,688.9	1.67	1.18	-1.18	
7,525.0	90.40	357.60	5,003.8	2,780.8	4.3	2,780.8	0.55	-0.54	0.11	
7,618.0	90.90	356.50	5,002.8	2,873.6	-0.5	2,873.6	1.30	0.54	-1.18	
7,711.0	90.20	356.20	5,001.9	2,966.5	-6.4	2,966.5	0.82	-0.75	-0.32	
7,805.0	89.10	357.10	5,002.4	3,060.3	-11.9	3,060.3	1.51	-1.17	0.96	
7,898.0	89.70	356.10	5,003.4	3,153.1	-17.4	3,153.1	1.25	0.65	-1.08	
7,991.0	89.40	357.20	5,004.1	3,246.0	-22.8	3,246.0	1.23	-0.32	1.18	
8,054.0	89.70	357.10	5,004.6	3,308.9	-26.0	3,308.9	0.50	0.48	-0.16	
8,147.0	90.90	359.70	5,004.2	3,401.8	-28.6	3,401.8	3.08	1.29	2.80	
8,241.0	91.30	359.60	5,002.3	3,495.8	-29.1	3,495.8	0.44	0.43	-0.11	
8,334.0	90.60	0.90	5,000.8	3,588.8	-28.7	3,588.8	1.59	-0.75	1.40	
8,427.0	90.90	0.80	4,999.6	3,681.8	-27.4	3,681.8	0.34	0.32	-0.11	
8,521.0	90.50	2.10	4,998.4	3,775.7	-25.0	3,775.7	1.45	-0.43	1.38	
8,615.0	90.80	1.30	4,997.4	3,869.7	-22.2	3,869.7	0.91	0.32	-0.85	
8,707.0	89.50	1.40	4,997.1	3,961.7	-20.0	3,961.7	1.42	-1.41	0.11	
8,800.0	90.00	0.70	4,997.5	4,054.6	-18.3	4,054.6	0.92	0.54	-0.75	
8,894.0	91.10	0.80	4,996.6	4,148.6	-17.1	4,148.6	1.18	1.17	0.11	
8,987.0	90.30	1.50	4,995.5	4,241.6	-15.2	4,241.6	1.14	-0.86	0.75	
9,080.0	91.20	0.30	4,994.3	4,334.6	-13.8	4,334.6	1.61	0.97	-1.29	
9,173.0	91.20	1.60	4,992.3	4,427.5	-12.2	4,427.5	1.40	0.00	1.40	
9,266.0	90.00	4.40	4,991.4	4,520.4	-7.4	4,520.4	3.28	-1.29	3.01	
9,389.0	90.70	2.00	4,990.6	4,643.2	-0.5	4,643.2	2.03	0.57	-1.95	
9,483.0	89.30	0.80	4,990.6	4,737.2	1.8	4,737.2	1.96	-1.49	-1.28	
9,610.0	90.00	360.00	4,991.4	4,864.2	2.7	4,864.2	0.84	0.55	-0.63	
9,641.0	90.70	360.00	4,991.2	4,895.2	2.7	4,895.2	2.26	2.26	0.00	
9,734.0	91.30	359.90	4,989.6	4,988.1	2.6	4,988.1	0.65	0.65	-0.11	
9,828.0	90.00	360.00	4,988.5	5,082.1	2.5	5,082.1	1.39	-1.38	0.11	
9,922.0	89.90	359.40	4,988.6	5,176.1	2.0	5,176.1	0.65	-0.11	-0.64	
10,015.0	90.50	358.90	4,988.3	5,269.1	0.7	5,269.1	0.84	0.65	-0.54	
10,108.0	90.10	357.90	4,987.8	5,362.1	-1.9	5,362.1	1.16	-0.43	-1.08	
10,201.0	90.10	357.60	4,987.6	5,455.0	-5.6	5,455.0	0.32	0.00	-0.32	
10,296.0	90.40	357.10	4,987.2	5,549.9	-10.0	5,549.9	0.61	0.32	-0.53	
10,390.0	90.80	357.60	4,986.2	5,643.8	-14.3	5,643.8	0.68	0.43	0.53	
10,484.0	90.40	357.00	4,985.2	5,737.7	-18.8	5,737.7	0.77	-0.43	-0.64	
10,578.0	90.20	356.70	4,984.7	5,831.5	-23.9	5,831.5	0.38	-0.21	-0.32	
10,673.0	91.00	357.00	4,983.7	5,926.4	-29.1	5,926.4	0.90	0.84	0.32	
10,767.0	90.90	356.70	4,982.2	6,020.2	-34.3	6,020.2	0.34	-0.11	-0.32	
10,861.0	91.00	356.20	4,980.6	6,114.0	-40.1	6,114.0	0.54	0.11	-0.53	
10,927.0	90.60	355.70	4,979.7	6,179.9	-44.8	6,179.9	0.97	-0.61	-0.76	
10,984.0	90.50	356.30	4,979.2	6,236.7	-48.8	6,236.7	1.07	-0.18	1.05	
11,077.0	90.30	356.30	4,978.5	6,329.5	-54.8	6,329.5	0.22	-0.22	0.00	
11,170.0	90.90	357.60	4,977.5	6,422.4	-59.7	6,422.4	1.54	0.65	1.40	
11,263.0	91.50	359.40	4,975.6	6,515.3	-62.1	6,515.3	2.04	0.65	1.94	
11,356.0	90.90	360.00	4,973.6	6,608.3	-62.6	6,608.3	0.91	-0.65	0.65	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3313 18-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3313 18-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3313 18-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,450.0	90.80	359.70	4,972.2	6,702.3	-62.9	6,702.3	0.34	-0.11	-0.32
11,544.0	90.40	0.50	4,971.3	6,796.3	-62.7	6,796.3	0.95	-0.43	0.85
11,637.0	90.90	0.30	4,970.2	6,889.3	-62.1	6,889.3	0.58	0.54	-0.22
11,731.0	89.60	0.60	4,969.8	6,983.3	-61.3	6,983.3	1.42	-1.38	0.32
11,824.0	89.40	359.90	4,970.6	7,076.3	-60.9	7,076.3	0.78	-0.22	-0.75
11,918.0	90.00	359.60	4,971.1	7,170.3	-61.3	7,170.3	0.71	0.64	-0.32
Last Survey									
12,003.0	90.00	359.60	4,971.1	7,255.3	-61.9	7,255.3	0.00	0.00	0.00
Projection to Bit									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
602.0	602.0	2.5	1.9	First Survey
11,918.0	4,971.1	7,170.3	-61.3	Last Survey
12,003.0	4,971.1	7,255.3	-61.9	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

Day 20 - 2014/07/15

FILE #: OK0014071
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314 18-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

Company Man: Scott Higgins
DIR Supervisor: Chris Garvin, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood

GROUND ELEV: 1874 ft **START DEPTH:** 11667.0 ft **PROGRESS:** 336.0 ft **DAILY COST:** USD\$9200.00
KB ELEV: 1891 ft **END DEPTH:** 12003.0 ft **AVG. ROP.:** 23.6 ft/hr **PREVIOUS COST:** USD\$198400.00
TOTAL COST: USD\$207600.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:30	Rotating With Motor	0.50	11691	7	10:15-12:45	Rotating With Motor	2.50	11909	7
00:30-01:15	Circ & Accumulate Surveys - @ 11637	0.75	11691	7	12:45-14:45	Circ & Condition Hole	2.00	11909	7
01:15-02:15	Orienting With Motor - 12' @ 170 R	1.00	11703	7	14:45-17:15	Rotating With Motor	2.50	11972	7
02:15-05:30	Rotating With Motor	3.25	11785	7	17:15-17:30	Circ & Accumulate Surveys - @ 11918	0.25	11972	7
05:30-06:00	Circ & Accumulate Surveys - @ 11731	0.50	11785	7	17:30-18:00	Rotating With Motor	0.50	12003	7
06:00-10:00	Rotating With Motor	4.00	11878	7	18:00-21:00	Circ Bottoms Up - CIRC 2 BOTTS UP	3.00	12003	7
10:00-10:15	Circ & Accumulate Surveys - @ 11824	0.25	11878	7	21:00-24:00	POOH - See Comments - TD WELL	3.00	12003	7

TIME SUMMARY (hrs):				DRILLING PARAMETERS:			
MOTOR DRILL:	14.25	ORIENTING HRS:	1.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	
TIME DRILL:	0.00	ROTATING HRS:	13.25	MOTOR HRS:	21.00	WOB SLIDING (HI):	44000 lbf
MOTOR REAM:	0.00	TRIP:	3.00	WOB SLIDING (LO):	20000 lbf	WOB ROTATE (HI):	23000 lbf
CIRC:	6.75	OTHER:	0.00	RPM (ROTARY):	60 rpm	WOB ROTATE (LO):	20000 lbf
MOTOR HRS:	21.00	DRILL HRS:	14.25	RPM (MOTOR):	48 rpm	DRAG UP:	220000 lbf
TOTAL HRS:	24.00			DRAG DN:	100000 lbf		

BHA / MOTOR / BIT INFORMATION:

BHA: 7 **HOLE SIZE:** 6.125 in **SECTION TYPE:** Lateral **SURVEY TYPE:** Positive Pulse MWD
MANFCT.: Calmena **STABILIZER:** No **SERIAL#:** 475-093 **MODEL:** **LOBE CFG.:** 7/8
SETTING: 1.75 ° **KICKPAD:** No **SIZE:** 4 3/4" (121mm) **MTR HRS THIS DAY:** 21 **MTR HRS TO DATE:** 91.5
MANFCT: Halliburton **BIT TYPE:** PDC Bit **TYPE:** MMD64C **NOZZLES:** 1.04 in² TFA
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ?

PUMP PARAMETERS

PRESSURE ON BTM: 3000 **PRESSURE OFF BTM:** 2900 **TOTAL FLOW RATE:** 237.10 gal/min
PUMP 1: TYPE: MP-10 EFF.: 95.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: MP-10 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 2.9363 gal/stk
PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Brine or Salt **VISC:** 39 sec/qt **WTR LOSS:** 0 cc/30min **PV:** 13 cP **YP:** 14 lb/100 ft² **pH:** 7
DENSITY: 9.5 lb/gal **GEL 0/10:** 9.00 lb/100 ft² **SAND:** 0.005 **SOLIDS:** 3 **OIL:** 4 **TEMP:** 146 °F
LIQUID BASE: Water **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

Drilling ahead, sliding as needed. 12:45 pm, Pump a big sweep and circulate bottoms up to clean the hole, ROP was down to 15ft hr. TD the well @ 18:00, the depth was 12003.

CUSTOMER SIGNATURE: _____

Day 21 - 2014/07/16

FILE #: OK0014071
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314 18-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

Company Man: Scott Higgins
DIR Supervisor: Chris Garvin, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood

GROUND ELEV: 1874 ft **START DEPTH:** 12003.0 ft **PROGRESS:** 0.0 ft **DAILY COST:** USD\$10600.00
KB ELEV: 1891 ft **END DEPTH:** 12003.0 ft **AVG. ROP.:** 0.0 ft/hr **PREVIOUS COST:** USD\$207600.00
TOTAL COST: USD\$218200.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-05:30	POOH - See Comments - END OF WELL	5.50	12003	7	07:00-24:00	Released	17.00	12003	7
05:30-07:00	Lay Down Directional Tools	1.50	12003	7			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:		STRING WEIGHT:	0 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	0 lbf	WOB ROTATE (HI):	0 lbf
MOTOR REAM:	0.00			TRIP:	5.50	WOB SLIDING (LO):	0 lbf	WOB ROTATE (LO):	0 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	OTHER:	18.50	RPM (ROTARY):		DRAG UP:	0 lbf
MOTOR HRS:	0.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (MOTOR):		DRAG DN:	0 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 7 **HOLE SIZE:** 6.125 in **SECTION TYPE:** Lateral **SURVEY TYPE:** Positive Pulse MWD
MANFCT.: Calmena **STABILIZER:** No **SERIAL#:** 475-093 **MODEL:** **LOBE CFG.:** 7/8
SETTING: 1.75 ° **KICKPAD:** No **SIZE:** 4 3/4" (121mm) **MTR HRS THIS DAY:** 0 **MTR HRS TO DATE:** 91.5
MANFCT: Halliburton **BIT TYPE:** PDC Bit **TYPE:** MMD64C **NOZZLES:** 1.04 in² TFA
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ? / ?

PUMP PARAMETERS

PRESSURE ON BTM: 0 **PRESSURE OFF BTM: 0** **TOTAL FLOW RATE:** 0.00 gal/min

PUMP 1: TYPE: MP-10	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: MP-10	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: **VISC:** 0 sec/qt **WTR LOSS:** 0 cc/30min **PV:** 0 cP **YP:** 0 lb/100 ft² **pH:** 0
DENSITY: 0 lb/gal **GEL 0/10:** 0.00 lb/100 ft² **SAND:** 0 **SOLIDS:** 0 **OIL:** 0 **TEMP:** 0 °F
LIQUID BASE: **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

POH to lay down Directional tools for end of well.

CUSTOMER SIGNATURE: _____



Slide Sheet Report

BHA 7 - 2014/07/11 TO 2014/07/16

FILE #: OK0014071
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314 18-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

Company Man: Scott Higgins
DIR Supervisor: Chris Garvin, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood

BHA NO: 7	DATES RUN: 2014/07/11 TO 2014/07/16	SECTION: Lateral	TOOLFACE OFFSET:	SURVEY OFFSET: 54 ft
MOTOR SETTING: 1.75 °	KICKPAD: No	STABILIZER: No	MODEL:	SERIAL NO: 475-093
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT DEPTH DRILLED	SURVEY		ORIENTING			ROTATING			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS			
	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM					TO	FEET	
10976.00	62.00	10922.00	90.60	355.70	90R	10976.00	10988.00	12.00	10988.00	11038.00	50.00	0.00	0.00		
11038.00	93.00	10984.00	90.50	356.30	90 R	11038.00	11049.00	11.00	11049.00	11131.00	82.00	8.00	-0.01	-0.16	
11131.00	93.00	11077.00	90.30	356.30	90 R	11131.00	11142.00	11.00	11142.00	11224.00	82.00	15.00	-0.01	-0.22	
11224.00	93.00	11170.00	90.90	357.60	90 R	11224.00	11244.00	20.00	11244.00	11317.00	73.00	11.00	0.05	0.65	
11317.00	93.00	11263.00	91.50	359.40	90R	11317.00	11329.00	12.00	11329.00	11410.00	81.00	20.00	0.03	0.65	
11410.00	94.00	11356.00	90.90	360.00		11410.00	11410.00	0.00	11410.00	11504.00	94.00	12.00	-0.05	-0.65	
11504.00	94.00	11450.00	90.80	359.70	130R	11504.00	11512.00	8.00	11512.00	11598.00	86.00	0.00	0.00	-0.11	
11598.00	93.00	11544.00	90.40	0.50		11598.00	11598.00	0.00	11598.00	11691.00	93.00	8.00	-0.05	-0.43	
11691.00	94.00	11637.00	90.90	0.30	170 R	11691.00	11703.00	12.00	11703.00	11785.00	82.00	0.00	0.00	0.54	
11785.00	93.00	11731.00	89.60	0.60		11785.00	11785.00	0.00	11785.00	11878.00	93.00	12.00	-0.11	-1.38	
11878.00	94.00	11824.00	89.40	359.90		11878.00	11878.00	0.00	11878.00	11972.00	94.00	0.00	0.00	-0.22	
11972.00	31.00	11918.00	90.00	359.60		11972.00	11972.00	0.00	11972.00	12003.00	31.00	0.00	0.00	0.64	
12003.00	0.00	11949.00	90.00	359.60		12003.00	12003.00	0.00	12003.00	12003.00	0.00	0.00	0.00	0.00	

Totals:	86.00 ft	941.00 ft
Percentages:	8.4%	91.6%
Time:	8.25 hrs	36.00 hrs
Percentages:	18.6%	81.4%