



Confidentiality Requested:

Yes  No

**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: \_\_\_\_\_

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

<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	OSAGE Resources, LLC
Well Name	Osage No. 3313 18-03HC
Doc ID	1219087

Tops

Name	Top	Datum
Kanwaka	3857	-1966
Heebner	4028	-2129
Toronto	4056	-2157
Douglas	4079	-2180
Lansing	4223	-2324
Stark	4610	-2699
Hushpuckney	4655	-2739
B/KC	4688	-2766
Mississippi	4787	-2876



## Summary of Changes

Lease Name and Number: Osage No. 3313 18-03HC

API/Permit #: 15-007-24182-01-00

Doc ID: 1219087

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Approved Date	08/11/2014	08/18/2014
Save Link	../../../../kcc/detail/operatorEditDetail.cfm?docID=1214127	../../../../kcc/detail/operatorEditDetail.cfm?docID=1219087
Spud Or Recompletion Date	6/19/2014	07/21/2014



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1214127  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

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

**CONFIDENTIAL** 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
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- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

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](mailto: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 Geologist Report / Mud Logs <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				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
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> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	OSAGE Resources, LLC
Well Name	Osage No. 3313 18-03HC
Doc ID	1214127

Tops

Name	Top	Datum
Kanwaka	3857	-1966
Heebner	4028	-2129
Toronto	4056	-2157
Douglas	4079	-2180
Lansing	4223	-2324
Stark	4610	-2699
Hushpuckney	4655	-2739
B/KC	4688	-2766
Mississippi	4787	-2876





Customer <i>OSAGE-RESOURCES</i>	Lease No.	Date <i>07-20-14</i>	
Lease <i>OSAGE</i>	Well # <i>3313 18-03HC</i>	<i>18-03HC</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 J...</i>
-------------------------	--------------------------------------	-------------------------------

Service Units	<i>37900</i>	<i>33708</i>	<i>20920</i>	<i>19960</i>	<i>21000</i>				
Driver Names	<i>Collins</i>	<i>E...</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 4.719%</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. Hole clean</i>
					<i>circ 405 BBL cont P/T</i>
					<i>JOB Complete</i>
					<i>Thank</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>	

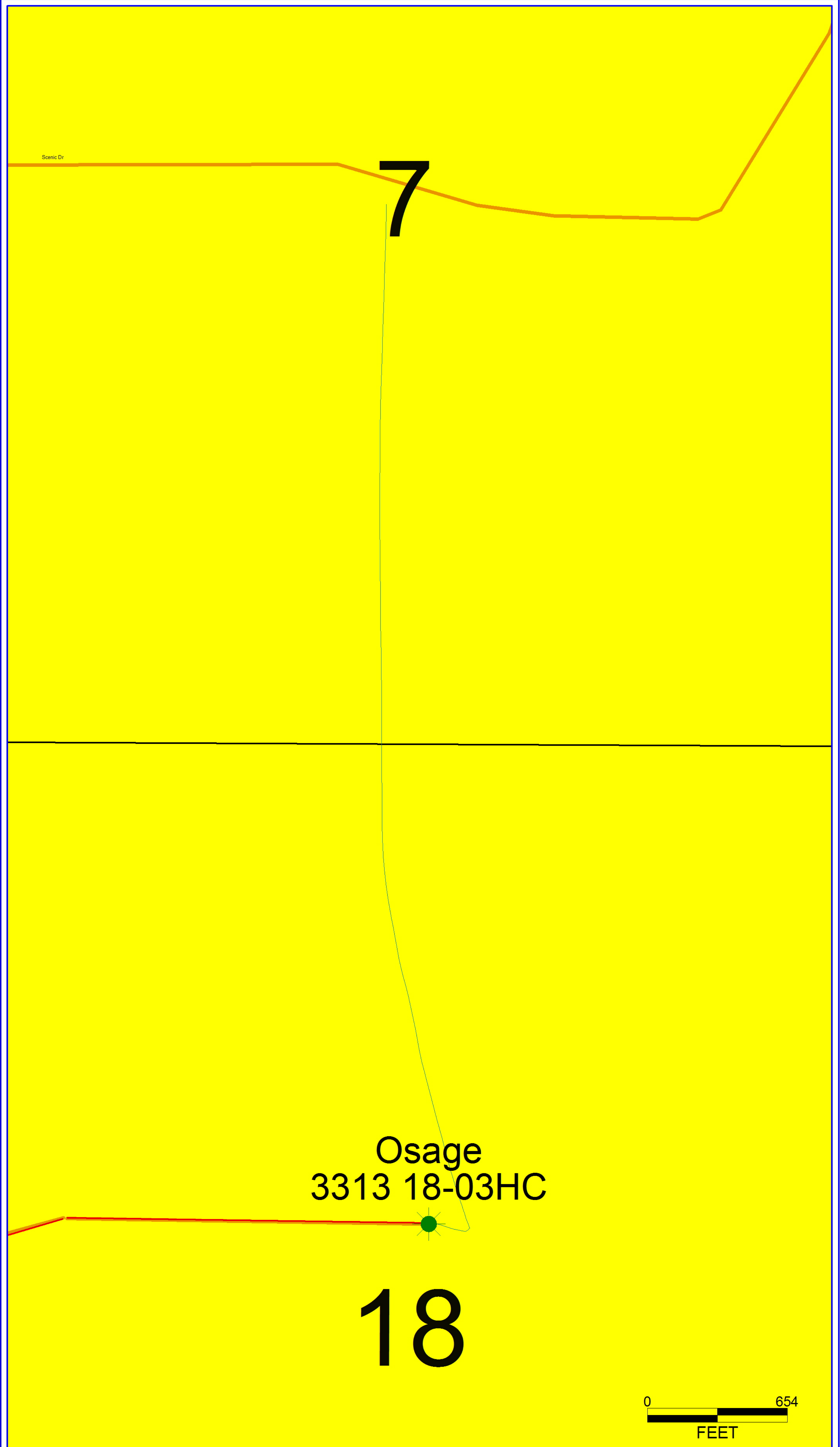
PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size <i>4 1/2</i>	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth <i>9515</i>	Depth	From	To	Pre Pad	Max		5 Min.
Volume <i>111</i>	Volume	From	To	Pad	Min		10 Min.
Max Press <i>5000</i>	Max Press	From	To	Frac	Avg		15 Min.
Well Connection <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 H<sub>2</sub>O 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 H<sub>2</sub>O 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**

**AUG 01 2014**

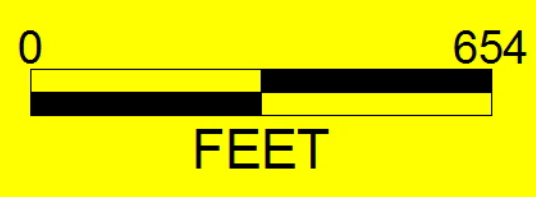


Scenic Dr

7

Osage  
3313 18-03HC

18



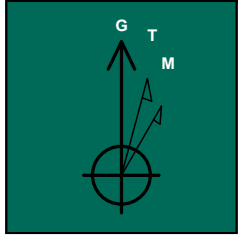


PLAN SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	6054.0	91.70	349.40	4984.2	1304.2	-147.5	0.00	0.00	1304.2		Drop & Turn 2°/100'
2	6589.0	90.22	360.00	4975.2	1836.1	-196.9	2.00	97.82	1836.1		Hold I: 90.22° @ A: 360°
3	12024.7	90.22	360.00	4954.0	7271.8	-196.9	0.00	0.00	7271.8	PBHL - TD (O 18-03HC)c	

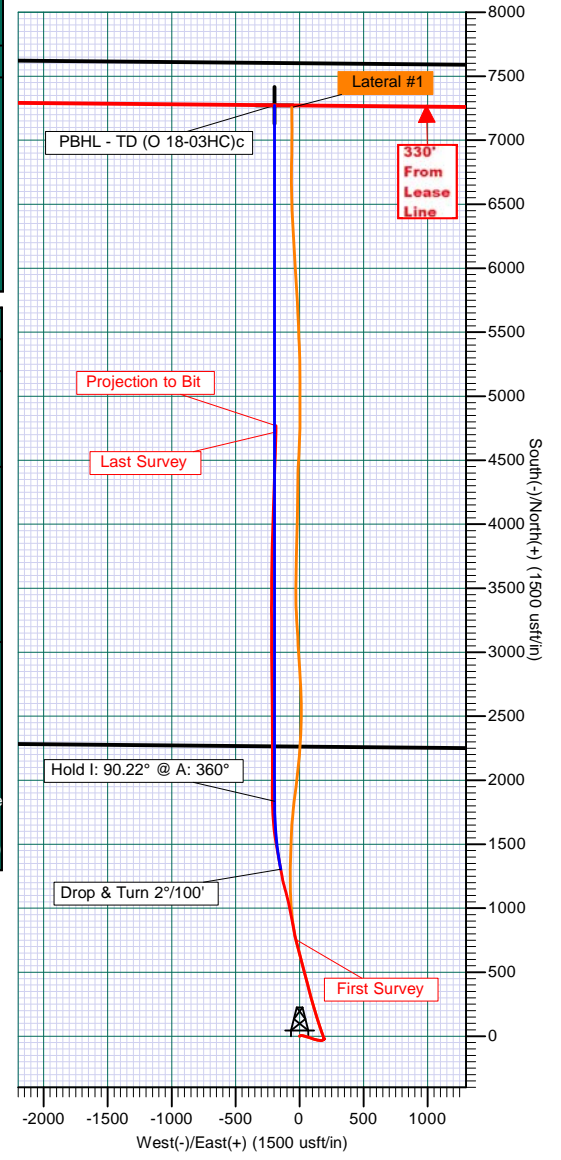
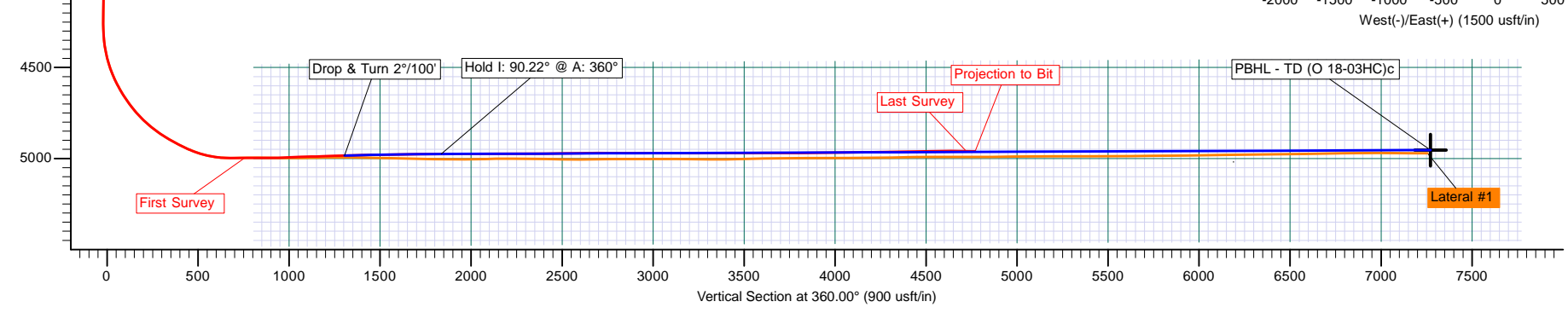
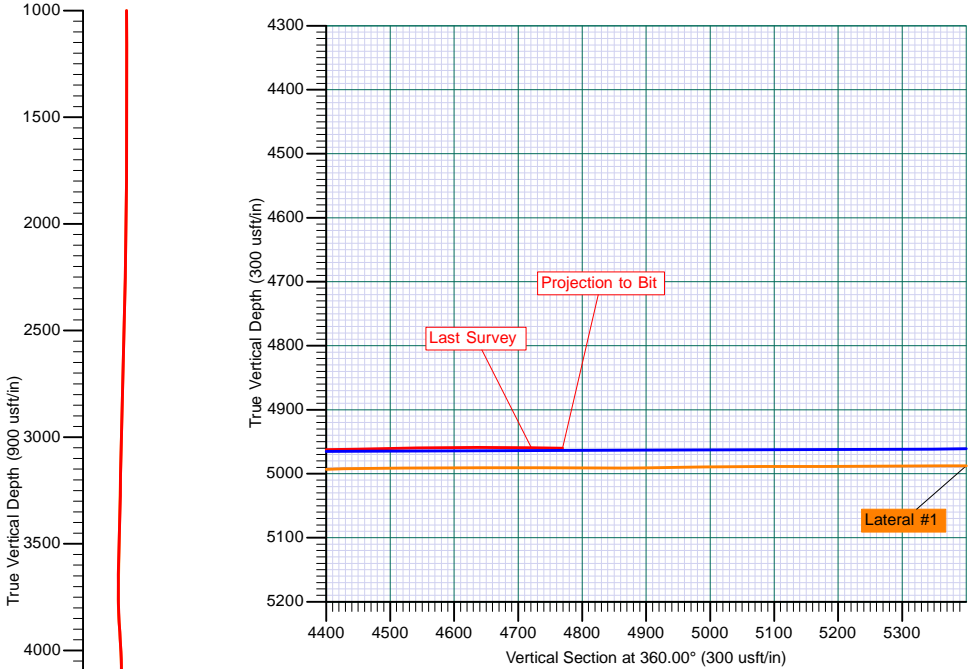
  

TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape			
PBHL - TD (O 18-03HC)a	4931.3	7271.8	-116.2	1504679.77	1231834.38	37° 11' 40.488 N	98° 46' 34.870 W	Point			
7045' VS (O 18-03HC)a	4934.3	7045.0	-116.2	1504453.02	1231834.38	37° 11' 38.246 N	98° 46' 34.862 W	Point			
PBHL - TD (O 18-03HC)b	4939.0	7271.8	-165.7	1504679.77	1231784.88	37° 11' 40.486 N	98° 46' 35.482 W	Point			
6055' VS (O 18-03HC)a	4942.9	6055.0	-116.2	1503463.02	1231834.38	37° 11' 28.458 N	98° 46' 34.825 W	Point			
5065' VS (O 18-03HC)a	4951.5	5065.0	-116.2	1502473.02	1231834.38	37° 11' 18.670 N	98° 46' 34.789 W	Point			
PBHL - TD (O 18-03HC)c	4954.0	7271.8	-196.9	1504679.77	1231753.68	37° 11' 40.485 N	98° 46' 35.867 W	Point			
4075' VS (O 18-03HC)a	4961.4	4075.0	-116.2	1501483.02	1231834.38	37° 11' 8.882 N	98° 46' 34.753 W	Point			
2995' VS (O 18-03HC)a	4967.0	2995.0	-116.2	1500403.02	1231834.38	37° 10' 58.204 N	98° 46' 34.713 W	Point			
2005' VS (O 18-03HC)a	4970.8	2005.0	-116.2	1499413.02	1231834.38	37° 10' 48.416 N	98° 46' 34.677 W	Point			
2000' VS (O 18-03HC)b	4983.0	2000.0	-165.7	1499408.02	1231784.88	37° 10' 48.365 N	98° 46' 35.289 W	Point			

Operator: Osage Resources, LLC  
 Location: Barber Co, Kansas (NAD-83)  
 Well Name: Osage #3313 18-03HC  
 Calmena Job# 14086



WELLBORE: Sidetrack #1  
 PLAN: Design #3  
 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: 51608  
 DIP ANGLE: 65.13°  
 MODEL: IGRF2010  
 DATE: 20-Jul-14  
 AZIMUTHS CORRECTED TO: Grid  
 MWD - USE IF ABOVE IS GRID  
 Magnetic North is 4.96° East of Grid North (Magnetic Convergence)  
 MWD - USE IF ABOVE IS TRUE  
 Magnetic North is 4.79° East of True North (Magnetic Declination)



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

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

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

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

<b>Wellbore</b>	Sidetrack #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/20/2014	4.79	65.13	51,608

<b>Design</b>	Sidetrack #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	5,434.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	360.00	

<b>Survey Program</b>	<b>Date</b>	7/29/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
602.0	5,434.0	Survey #1 (Lateral #1)	MWD	MWD - Calmena	
5,493.0	9,525.0	Survey #1 (Sidetrack #1)	MWD	MWD - Calmena	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
5,434.0	90.10	345.30	4,997.1	698.9	-15.8	698.9	0.00	0.00	0.00	
5,493.0	90.70	346.10	4,996.7	756.1	-30.3	756.1	1.69	1.02	1.36	
<b>First Survey</b>										
5,524.0	90.10	348.40	4,996.5	786.3	-37.2	786.3	7.67	-1.94	7.42	
5,555.0	89.50	350.30	4,996.6	816.8	-42.9	816.8	6.43	-1.94	6.13	
5,586.0	89.90	349.70	4,996.7	847.3	-48.3	847.3	2.33	1.29	-1.94	
5,618.0	90.30	349.20	4,996.7	878.8	-54.2	878.8	2.00	1.25	-1.56	
5,649.0	90.00	349.10	4,996.6	909.2	-60.0	909.2	1.02	-0.97	-0.32	
5,680.0	91.40	348.50	4,996.2	939.6	-66.0	939.6	4.91	4.52	-1.94	
5,711.0	92.90	348.70	4,995.0	970.0	-72.1	970.0	4.88	4.84	0.65	

<b>Company:</b>	Osage Resources, LLC	<b>Local Co-ordinate Reference:</b>	Site Osage #3313 18-03HC
<b>Project:</b>	Barber Co, Kansas (NAD-83)	<b>TVD Reference:</b>	WELL @ 1891.0usft (Original Well Elev)
<b>Site:</b>	Osage #3313 18-03HC	<b>MD Reference:</b>	WELL @ 1891.0usft (Original Well Elev)
<b>Well:</b>	Osage #3313 18-03HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack #1	<b>Database:</b>	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)	
5,742.0	92.80	348.30	4,993.5	1,000.3	-78.3	1,000.3	1.33	-0.32	-1.29	
5,773.0	92.20	347.00	4,992.2	1,030.6	-84.9	1,030.6	4.62	-1.94	-4.19	
5,804.0	91.70	346.30	4,991.1	1,060.7	-92.1	1,060.7	2.77	-1.61	-2.26	
5,835.0	91.40	346.20	4,990.3	1,090.8	-99.5	1,090.8	1.02	-0.97	-0.32	
5,867.0	91.20	345.80	4,989.5	1,121.8	-107.2	1,121.8	1.40	-0.63	-1.25	
5,898.0	91.50	344.80	4,988.8	1,151.8	-115.1	1,151.8	3.37	0.97	-3.23	
5,929.0	92.30	345.20	4,987.8	1,181.8	-123.1	1,181.8	2.88	2.58	1.29	
5,991.0	91.30	349.80	4,985.8	1,242.2	-136.5	1,242.2	7.59	-1.61	7.42	
6,023.0	91.40	350.20	4,985.1	1,273.7	-142.0	1,273.7	1.29	0.31	1.25	
6,054.0	91.70	349.40	4,984.2	1,304.2	-147.5	1,304.2	2.76	0.97	-2.58	
6,084.0	92.10	349.40	4,983.2	1,333.7	-153.0	1,333.7	1.33	1.33	0.00	
6,116.0	91.30	349.90	4,982.3	1,365.2	-158.8	1,365.2	2.95	-2.50	1.56	
6,147.0	91.00	349.90	4,981.7	1,395.7	-164.2	1,395.7	0.97	-0.97	0.00	
6,178.0	91.10	349.20	4,981.1	1,426.2	-169.8	1,426.2	2.28	0.32	-2.26	
6,210.0	91.20	349.10	4,980.5	1,457.6	-175.9	1,457.6	0.44	0.31	-0.31	
6,272.0	90.60	350.90	4,979.5	1,518.6	-186.6	1,518.6	3.06	-0.97	2.90	
6,333.0	91.20	353.50	4,978.5	1,579.1	-194.9	1,579.1	4.37	0.98	4.26	
6,401.0	90.90	354.20	4,977.3	1,646.7	-202.2	1,646.7	1.12	-0.44	1.03	
6,462.0	90.70	355.70	4,976.4	1,707.4	-207.6	1,707.4	2.48	-0.33	2.46	
6,524.0	90.70	357.60	4,975.7	1,769.3	-211.2	1,769.3	3.06	0.00	3.06	
6,585.0	90.50	358.70	4,975.0	1,830.3	-213.2	1,830.3	1.83	-0.33	1.80	
6,647.0	90.50	359.70	4,974.5	1,892.3	-214.0	1,892.3	1.61	0.00	1.61	
6,708.0	90.60	0.60	4,973.9	1,953.3	-213.9	1,953.3	1.48	0.16	1.48	
6,770.0	89.40	360.00	4,973.9	2,015.2	-213.5	2,015.2	2.16	-1.94	-0.97	
6,831.0	89.50	359.80	4,974.5	2,076.2	-213.6	2,076.2	0.37	0.16	-0.33	
6,893.0	90.50	359.60	4,974.5	2,138.2	-214.0	2,138.2	1.64	1.61	-0.32	
6,985.0	89.90	0.40	4,974.2	2,230.2	-214.0	2,230.2	1.09	-0.65	0.87	
7,077.0	90.40	360.00	4,973.9	2,322.2	-213.6	2,322.2	0.70	0.54	-0.43	
7,169.0	90.80	360.00	4,973.0	2,414.2	-213.6	2,414.2	0.43	0.43	0.00	
7,261.0	90.50	359.70	4,971.9	2,506.2	-213.9	2,506.2	0.46	-0.33	-0.33	
7,354.0	90.60	359.30	4,971.0	2,599.2	-214.7	2,599.2	0.44	0.11	-0.43	
7,446.0	91.10	359.00	4,969.7	2,691.2	-216.1	2,691.2	0.63	0.54	-0.33	
7,538.0	89.20	359.40	4,969.4	2,783.2	-217.3	2,783.2	2.11	-2.07	0.43	
7,630.0	89.20	359.60	4,970.7	2,875.2	-218.1	2,875.2	0.22	0.00	0.22	
7,723.0	89.60	359.90	4,971.7	2,968.2	-218.6	2,968.2	0.54	0.43	0.32	
7,815.0	90.30	359.90	4,971.8	3,060.2	-218.7	3,060.2	0.76	0.76	0.00	
7,907.0	90.70	359.60	4,971.0	3,152.2	-219.1	3,152.2	0.54	0.43	-0.33	
7,999.0	90.40	359.30	4,970.1	3,244.2	-220.0	3,244.2	0.46	-0.33	-0.33	
8,092.0	90.30	0.50	4,969.5	3,337.2	-220.2	3,337.2	1.29	-0.11	1.29	
8,184.0	89.60	0.10	4,969.6	3,429.1	-219.7	3,429.1	0.88	-0.76	-0.43	
8,276.0	89.80	0.80	4,970.1	3,521.1	-219.0	3,521.1	0.79	0.22	0.76	
8,368.0	90.50	0.90	4,969.8	3,613.1	-217.6	3,613.1	0.77	0.76	0.11	
8,460.0	90.10	0.40	4,969.3	3,705.1	-216.5	3,705.1	0.70	-0.43	-0.54	

<b>Company:</b>	Osage Resources, LLC	<b>Local Co-ordinate Reference:</b>	Site Osage #3313 18-03HC
<b>Project:</b>	Barber Co, Kansas (NAD-83)	<b>TVD Reference:</b>	WELL @ 1891.0usft (Original Well Elev)
<b>Site:</b>	Osage #3313 18-03HC	<b>MD Reference:</b>	WELL @ 1891.0usft (Original Well Elev)
<b>Well:</b>	Osage #3313 18-03HC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Sidetrack #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Sidetrack #1	<b>Database:</b>	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)	
8,553.0	89.70	0.60	4,969.5	3,798.1	-215.7	3,798.1	0.48	-0.43	0.22	
8,645.0	90.60	2.00	4,969.3	3,890.1	-213.6	3,890.1	1.81	0.98	1.52	
8,737.0	90.80	2.30	4,968.1	3,982.0	-210.2	3,982.0	0.39	0.22	0.33	
8,831.0	90.90	2.20	4,966.7	4,075.9	-206.5	4,075.9	0.15	0.11	-0.11	
8,923.0	90.70	1.90	4,965.5	4,167.9	-203.2	4,167.9	0.39	-0.22	-0.33	
9,017.0	90.60	1.90	4,964.4	4,261.8	-200.1	4,261.8	0.11	-0.11	0.00	
9,109.0	90.80	1.80	4,963.3	4,353.8	-197.1	4,353.8	0.24	0.22	-0.11	
9,204.0	91.20	2.20	4,961.6	4,448.7	-193.8	4,448.7	0.60	0.42	0.42	
9,298.0	90.90	2.30	4,959.9	4,542.6	-190.1	4,542.6	0.34	-0.32	0.11	
9,392.0	90.10	1.50	4,959.1	4,636.5	-187.0	4,636.5	1.20	-0.85	-0.85	
9,476.0	89.30	0.90	4,959.5	4,720.5	-185.3	4,720.5	1.19	-0.95	-0.71	
<b>Last Survey</b>										
9,525.0	89.30	0.90	4,960.1	4,769.5	-184.5	4,769.5	0.00	0.00	0.00	
<b>Projection to Bit</b>										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,493.0	4,996.7	756.1	-30.3	First Survey	
9,476.0	4,959.5	4,720.5	-185.3	Last Survey	
9,525.0	4,960.1	4,769.5	-184.5	Projection to Bit	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



Day 9 - 2014/07/28

FILE #: OK1400086  
JOB TYPE:  
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3313 18-03HC ST1  
COMPANY: Osage Resources LLC  
SURFACE LOCATION: Barber County

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

Company Man: John Witschi  
DIR Supervisor: Chris Garvin, Shane Lewis  
MWD Supervisor: Joe Newberry, Daniel Doyal

GROUND ELEV: 0 ft      START DEPTH: 9034.0 ft      PROGRESS: 491.0 ft      DAILY COST: USD\$11600.00  
KB ELEV: 0 ft      END DEPTH: 9525.0 ft      AVG. ROP.: 53.1 ft/hr      PREVIOUS COST: USD\$99300.00  
TOTAL COST: USD\$110900.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:00	Rotating With Motor	1.00	9066	2	07:15-08:45	Rotating With Motor	1.50	9441	2
01:00-01:15	Circ & Accumulate Surveys - @ 9017	0.25	9066	2	08:45-09:00	Circ & Accumulate Surveys - @ 9392	0.25	9441	2
01:15-03:00	Rotating With Motor	1.75	9158	2	09:00-10:30	Rotating With Motor	1.50	9525	2
03:00-03:15	Circ & Accumulate Surveys - @ 9109	0.25	9158	2	10:30-13:30	Circ & Accumulate Surveys	3.00	9525	2
03:15-05:00	Rotating With Motor	1.75	9252	2	13:30-18:00	POOH - See Comments - TD Well	4.50	9525	2
05:00-05:15	Circ & Accumulate Surveys - @ 9204	0.25	9252	2	18:00-19:00	Lay Down Directional Tools	1.00	9525	2
05:15-07:00	Rotating With Motor	1.75	9347	2	19:00-24:00	Released	5.00	9525	2
07:00-07:15	Circ & Accumulate Surveys - @ 9298	0.25	9347	2			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	9.25	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:		STRING WEIGHT	1120000 lbs
TIME DRILL:	0.00	ROTATING HRS:	9.25	MOTOR HRS:	13.50	WOB SLIDING (HI):	19000 lbf	WOB ROTATE (HI):	20000 lbf
MOTOR REAM:	0.00	ROTARY DRILL:	0.00	TRIP:	4.50	WOB SLIDING (LO):	17000 lbf	WOB ROTATE (LO):	18000 lbf
CIRC:	4.25	OTHER:	6.00	RPM (ROTARY):	50 rpm	DRAG UP:	130000 lbf		
MOTOR HRS:	13.50	DRILL HRS:	9.25	TOTAL HRS:	24.00	RPM (MOTOR):	52 rpm	DRAG DN:	90000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 2      HOLE SIZE: 6.125 in      SECTION TYPE: Sidetrack 1      SURVEY TYPE: Positive Pulse MWD  
 MANFCT.: Calmena      STABILIZER: No      SERIAL#: 475-051      MODEL: 7838      LOBE CFG.: 7/8  
 SETTING: 1.72 °      KICKPAD: No      SIZE: 4 3/4" (121mm)      MTR HRS THIS DAY: 13.5      MTR HRS TO DATE: 94.25  
 MANFCT: Halliburton      BIT TYPE: PDC Bit      TYPE: MMD64C      NOZZLES: 1.04 in<sup>2</sup> TFA  
 IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ? / ?

PUMP PARAMETERS

PRESSURE ON BTM: 2050      PRESSURE OFF BTM: 1800      TOTAL FLOW RATE: 232.38 gal/min  
 PUMP 1: TYPE: MP-10      EFF.: 95.0%      SPM: 70.00      LINER: 6.00 in      STROKE VOL.: 3.4944 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: Brine or Salt      VISC: 32 sec/qt      WTR LOSS: 0 cc/30min      PV: 1 cP      YP: 4 lb/100 ft<sup>2</sup>      pH: 3  
 DENSITY: 9.8 lb/gal      GEL 0/10: 5.00 lb/100 ft<sup>2</sup>      SAND: 0      SOLIDS: 4.2      OIL: 0      TEMP: 146 °F  
 LIQUID BASE: Water      LIQUID RATE: 0 gal/min      GAS TYPE:      GAS RATE: 0 cu ft/min

COMMENTS:

Drill ahead in lateral, and TD well at 10:30am. POOH the lay down directional tools.

CUSTOMER SIGNATURE: \_\_\_\_\_



# Slide Sheet Report

## BHA 2 - 2014/07/24 TO 2014/07/28

**FILE #:** OK1400086  
**JOB TYPE:**  
**RIG & NO:** Duke Drilling 21

**WELL NAME:** Osage 3313 18-03HC ST1  
**COMPANY:** Osage Resources LLC  
**SURFACE LOCATION:** Barber County

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

**Company Man:** John Witschi  
**DIR Supervisor:** Chris Garvin, Shane Lewis  
**MWD Supervisor:** Joe Newberry, Daniel Doyal

<b>BHA NO:</b> 2	<b>DATES RUN:</b> 2014/07/24 TO 2014/07/28	<b>SECTION:</b> Sidetrack	<b>TOOLFACE OFFSET:</b>	<b>SURVEY OFFSET:</b> 49 ft
<b>MOTOR SETTING:</b> 1.72 °	<b>KICKPAD:</b> No	<b>STABILIZER:</b> No	<b>MODEL:</b> 7838	<b>SERIAL NO:</b> 475-051
				<b>BHA SURVEY TYPE:</b> 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					
6414.00	36.00	6365.00	91.20	353.50	6414.00	6414.00	0.00	6414.00	6450.00	36.00	0.00	0.00	0.00		
6450.00	61.00	6401.00	90.90	354.20	90 R	6450.00	6465.00	15.00	6465.00	6511.00	46.00	0.00	0.00	-0.83	
6511.00	62.00	6462.00	90.70	355.70	80 R	6511.00	6526.00	15.00	6526.00	6573.00	47.00	12.00	-0.02	-0.33	
6573.00	61.00	6524.00	90.70	357.60	100 R	6573.00	6583.00	10.00	6583.00	6634.00	51.00	16.00	0.00	0.00	
6634.00	62.00	6585.00	90.50	358.70	90 R	6634.00	6644.00	10.00	6644.00	6696.00	52.00	12.00	-0.02	-0.33	
6696.00	61.00	6647.00	90.50	359.70		6696.00	6696.00	0.00	6696.00	6757.00	61.00	10.00	0.00	0.00	
6757.00	62.00	6708.00	90.60	0.60	170 L	6757.00	6765.00	8.00	6765.00	6819.00	54.00	0.00	0.00	0.16	
6819.00	61.00	6770.00	89.40	0.00		6819.00	6819.00	0.00	6819.00	6880.00	61.00	8.00	-0.15	-1.94	
6880.00	62.00	6831.00	89.50	359.80	10 R	6880.00	6885.00	5.00	6885.00	6942.00	57.00	0.00	0.00	0.16	
6942.00	92.00	6893.00	90.50	359.60	135 R	6942.00	6947.00	5.00	6947.00	7034.00	87.00	5.00	0.20	1.61	
7034.00	92.00	6985.00	89.90	0.40		7034.00	7034.00	0.00	7034.00	7126.00	92.00	5.00	-0.12	-0.65	
7126.00	92.00	7077.00	90.40	360.00		7126.00	7126.00	0.00	7126.00	7218.00	92.00	0.00	0.00	0.54	
7218.00	92.00	7169.00	90.80	360.00		7218.00	7218.00	0.00	7218.00	7310.00	92.00	0.00	0.00	0.43	
7310.00	93.00	7261.00	90.50	359.70		7310.00	7310.00	0.00	7310.00	7403.00	93.00	0.00	0.00	-0.33	
7403.00	92.00	7354.00	90.60	359.30		7403.00	7403.00	0.00	7403.00	7495.00	92.00	0.00	0.00	0.11	
7495.00	92.00	7446.00	91.10	359.00	150 R	7495.00	7503.00	8.00	7503.00	7587.00	84.00	0.00	0.00	0.54	
7587.00	92.00	7538.00	89.20	359.40		7587.00	7587.00	0.00	7587.00	7679.00	92.00	8.00	-0.24	-2.07	
7679.00	93.00	7630.00	89.20	359.60	45 R	7679.00	7684.00	5.00	7684.00	7772.00	88.00	0.00	0.00	0.00	
7772.00	92.00	7723.00	89.60	359.90	20R	7772.00	7781.00	9.00	7781.00	7864.00	83.00	5.00	0.08	0.43	
7864.00	92.00	7815.00	90.30	359.90		7864.00	7864.00	0.00	7864.00	7956.00	92.00	9.00	0.08	0.76	
7956.00	92.00	7907.00	90.70	359.60		7956.00	7956.00	0.00	7956.00	8048.00	92.00	0.00	0.00	0.43	
8048.00	93.00	7999.00	90.40	359.30	90R	8048.00	8058.00	10.00	8058.00	8141.00	83.00	0.00	0.00	-0.33	
8141.00	92.00	8092.00	90.50	0.50		8141.00	8141.00	0.00	8141.00	8233.00	92.00	10.00	0.01	0.11	
8233.00	92.00	8184.00	89.60	0.10	70 R	8233.00	8240.00	7.00	8240.00	8325.00	85.00	0.00	0.00	-0.98	

# Slide Sheet Report

## BHA 2 - 2014/07/24 TO 2014/07/28

(Distances are shown in feet.)

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
8325.00	92.00	8276.00	89.80	0.80	45 R	8325.00	8335.00	10.00	8335.00	8417.00	82.00	7.00	0.03	0.22	
8417.00	92.00	8368.00	90.50	0.90		8417.00	8417.00	0.00	8417.00	8509.00	92.00	10.00	0.07	0.76	
8509.00	93.00	8460.00	90.10	0.40		8509.00	8509.00	0.00	8509.00	8602.00	93.00	0.00	0.00	-0.43	
8602.00	92.00	8553.00	89.70	0.60	30R	8602.00	8612.00	10.00	8612.00	8694.00	82.00	0.00	0.00	-0.43	
8694.00	92.00	8645.00	90.60	2.00	HS	8694.00	8702.00	8.00	8702.00	8786.00	84.00	10.00	0.09	0.98	
8786.00	94.00	8737.00	90.80	2.30	HS	8786.00	8794.00	8.00	8794.00	8880.00	86.00	8.00	0.03	0.22	
8880.00	92.00	8831.00	90.90	2.20		8880.00	8880.00	0.00	8880.00	8972.00	92.00	8.00	0.01	0.11	
8972.00	94.00	8923.00	90.70	1.90		8972.00	8972.00	0.00	8972.00	9066.00	94.00	0.00	0.00	-0.22	
9066.00	92.00	9017.00	90.60	1.90		9066.00	9066.00	0.00	9066.00	9158.00	92.00	0.00	0.00	-0.11	
9158.00	95.00	9109.00	90.80	1.80		9158.00	9158.00	0.00	9158.00	9253.00	95.00	0.00	0.00	0.22	
9253.00	94.00	9204.00	91.20	2.20		9253.00	9253.00	0.00	9253.00	9347.00	94.00	0.00	0.00	0.42	
9347.00	94.00	9298.00	90.90	2.30		9347.00	9347.00	0.00	9347.00	9441.00	94.00	0.00	0.00	-0.32	
9441.00	94.00	9392.00	90.10	1.50		9441.00	9441.00	0.00	9441.00	9535.00	94.00	0.00	0.00	-0.85	

<b>Totals:</b>	143.00 ft	2978.00 ft
<b>Percentages:</b>	4.6%	95.4%
<b>Time:</b>	14.25 hrs	65.75 hrs
<b>Percentages:</b>	17.8%	82.2%