Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1243950

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 # 34192
Name: SandRidge Exploration and Production LLC
Address 1: 123 ROBERT S. KERR AVE
Address 2:
City: OKLAHOMA CITY State: OK Zip: 73102 + 6406
Contact Person: Tiffany Golay
Phone: (405) 429-6543
CONTRACTOR: License # 34464
Name: Lariat Services, Inc. dba Chaparral, Drilling, Fluids
Wellsite Geologist: Hanna Thornberg
Purchaser: Atlas (gas); CVR (oil)

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 #:

11/21/2014 Spud Date or Recompletion Date
12/25/2014 Date Reached TD
1/13/2015 Completion Date or Recompletion Date

API No. 15 - 15-191-22764-01-00
Spot Description:
NE - NW - NE - NE Sec. 7 Twp. 35 S. R. 3 ☐ East ☑ West
200 Feet from ☑ North / ☐ South Line of Section
800 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Sumner
Lease Name: Helen 3503 Well #: 1-18H
Field Name: Caldwell West
Producing Formation: Mississippian
Elevation: Ground: 1162 Kelly Bushing: 1180
Total Vertical Depth: 4681 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 463 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: 100000 ppm Fluid volume: 4190 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: NEMAHA
Lease Name: unnamed License #: 99999
Quarter W2 Sec. 15 Twp. 24 S. R. 7 ☐ East ☑ West
County: Garfield, OK Permit #: 623842

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: 03/20/2015
☑ **Confidential Release Date:** 03/19/2017
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 03/23/2015

[redacted]

1243950

Operator Name: SandRidge Exploration and Production LLC Lease Name: Helen 3503 Well #: 1-18H

Sec. 7 Twp. 35 S. R. 3 ☐ East ☑ West County: Sumner

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 ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Induction
Porosity

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Base Heebner	2929	
Lansing	3270	
Cottage Grove	3760	
Oswego	4060	
Cherokee	4208	
Verdigris	4242	
Miss Unconformity	4540	

CASING RECORD ☑ New ☐ 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
Attached	Attached	Attached	Attached	Attached	Attached	Attached	Attached

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ 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 *(Amount and Kind of Material Used)*	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:
	2.88	5165		☑ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR.	Producing Method:
2/5/2015	☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

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

DISPOSITION OF GAS:	METHOD OF COMPLETION:	PRODUCTION INTERVAL:
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* ☐ Other *(Specify)*	

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Helen 3503 1-18H
Doc ID	1243950

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Conductor	24	20	75	60	Edge Services 10 Sack Grout	8	none
Surface	12.25	9.63	36	463	Premium Plus (Class C)	315	2% Calcium Chloride, 1/4 pps Cello-Flake
Intermediate	8.75	7	26	5378	50/50 Poz Premium & Premium	380	4% Gel, .2% FL-17, .1% C-51, .3% C-20, .1% C-37, .2% X-Air
Liner	6.13	4.5	11.6	10162	N/A	0	N/A

EDGE SERVICES
Woodward, OK

INVOICE

DATE	INVOICE #
11/24/2014	5294

BILL TO
SANDRIDGE ENERGY, INC. ATTN: PURCHASING MANAGER 123 ROBERT S. KERR AVENUE OKLAHOMA CITY, OK 73102

REMIT TO
EDGE SERVICES, INC. PO BOX 609 WOODWARD, OK 73802

COUNTY	Start Date	End Date	Work Order	Rig Number	LEASE NAME	Terms
HARPER, KS	11/20/2014		3857	LARIAT 40	HELEN 3503 1-18H	Due on rec...

Description
DRILLED 80' OF 30" CONDUCTOR HOLE DRILLED 6' OF 76" HOLE FURNISHED AND SET 6' X 6' TINHORN CELLAR FURNISHED 80' OF 20" CONDUCTOR PIPE FURNISHED MUD, WATER, AND TRUCKING FURNISHED WELDER AND MATERIALS FURNISHED 8 YARDS OF 10 SACK GROUT FOR CONDUCTOR HOLE FURNISHED 4 YARDS OF 10 SACK GROUT FOR MOUSE HOLE FURNISHED GROUT PUMP DRILL MOUSE HOLE FURNISHED 80' OF 16" CONDUCTOR PIPE TOTAL BID $19,000.00

AFE Number: DC 14315
Well Name: Helen 3503 1-18H
Code: 850.010
Amount: $19,237.51
Co. Man:
Co. Man Sig.: Billy Smith for John Fortune
Notes:

Sales Tax (6.15%)	$237.51
TOTAL	$19,237.51

JOB SUMMARY

PROJECT NUMBER	TICKET DATE
SOK 4560	12/02/14

COUNTY	State	COMPANY	CUSTOMER REP
Sumner	Kansas	dridge Exploration & Produc	Luis Garza

LEASE NAME	Well No.	JOB TYPE	EMPLOYEE NAME
Helen 3503	~~1-7H~~ 1-18H	Surface	0

EMP NAME							
Mike Hall		0					
Cheryl Newton							
David Settlemier							
Tony Phillips							

Form. Name _____ Type: _____

Packer Type _____ Set At 0

Bottom Hole Temp. 80 Pressure _____

Retainer Depth _____ Total Depth 463'

	Called Out	On Location	Job Started	Job Completed
Date	12/1/2014	12/1/2014	12/1/2014	12/1/2014
Time		1400	1300	1500

Tools and Accessories

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float Va	0	IR
Centralizers	0	IR
Top Plug	0	IR
HEAD	0	IR
Limit clamp	0	IR
Weld-A	0	IR
Texas Pattern Guide Shoe	0	IR
Cement Basket	0	IR

Well Data

	New/Used	Weight	Size Grade	From	To	Max. Allow
Casing		36#	9 5/8"	Surface	468'	1,500
Liner						
Liner						
Tubing			0			
Drill Pipe						
Open Hole			12¼"	Surface	463'	Shots/Ft.
Perforations						
Perforations						
Perforations						

Materials

Mud Type	WBM	Density 9	Lb/Gal	
Disp. Fluid	Fresh Water	Density 8.33	Lb/Gal	
Spacer type	Fresh Wate	BBL. 10		8.33
Spacer type		BBL.		
Acid Type		Gal.	%	
Acid Type		Gal.	%	
Surfactant		Gal.	In	
NE Agent		Gal.	In	
Fluid Loss		Gal/Lb	In	
Gelling Agent		Gal/Lb	In	
Fric. Red.		Gal/Lb	In	
MISC.		Gal/Lb	In	

Perfpac Balls _____ Qty. _____

Other _____

Other _____

Other _____

Other _____

Other _____

Hours On Location

Date	Hours
12/1	13.0
Total	13.0

Operating Hours

Date	Hours
12/1	1.0
Total	1.0

Description of Job

Surface

Pressures

MAX 1,500 PSI AVG. 200

Average Rates in BPM

MAX 6 BPM AVG 4.5

Cement Left in Pipe

Feet 46' Reason SHOE JOINT

Cement Data

Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	315	Premium Plus (Class C)	2% Calcium Chloride - ¼pps Cello-Flake	6.32	1.32	14.80
2	0	0	0	0.00	0.00	0.00
3	0	0	0	0.00	0.00	0.00

Summary

Preflush	10	Type:	Fresh Water	Preflush: BBl	10.00	Type:	Fresh Water
Breakdown		MAXIMUM	1,500 PSI	Load & Bkdn: Gal - BBl	N/A	Pad:Bbl -Gal	N/A
		Lost Returns-N	NO/FULL	Excess /Return BBl	30	Calc.Disp Bbl	32
		Actual TOC	463'	Calc. TOC:	463'	Actual Disp.	32.00
Average		Bump Plug PSI:	800	Final Circ. PSI:	250	Disp:Bbl	32.00
ISIP _____	5 Min. _____	10 Min _____	15 Min _____	Cement Slurry BBl	74.0		
				Total Volume BBl	116.00		

CUSTOMER REPRESENTATIVE _____ SIGNATURE

JOB SUMMARY

PROJECT NUMBER	TICKET DATE
SOK 4603	12/12/14

COUNTY	State	COMPANY	CUSTOMER REP
Sumner	Kansas	Sandridge Exploration & Production	Corey Aleman

LEASE NAME	Well No.	JOB TYPE	EMPLOYEE NAME
Helen 3503	~~4-7H~~ 1-18H	Intermediate	Marcos Quintana

EMP NAME						
Marcos Quintana		0				
Kyle Laskowitz						
Chris Looney						
Ron Derry						

Form. Name _____ Type: _____

Packer Type _____ Set At 0

Bottom Hole Temp. 155 Pressure _____

Retainer Depth _____ Total Depth 5378

	Called Out	On Location	Job Started	Job Completed
Date	12/11/2014	12/11/2014	12/12/2014	12/12/2014
Time	1400	1900	0030	210

Tools and Accessories

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float Val	0	IR
Centralizers	0	IR
Top Plug	0	IR
HEAD	0	IR
Limit clamp	0	IR
Weld-A	0	IR
Texas Pattern Guide Shoe	0	IR
Cement Basket	0	IR

Well Data

	New/Used	Weight	Size	Grade	From	To	Max. Allow
Casing		26#	7"		Surface		5,000
Liner							
Liner							
Tubing			0				
Drill Pipe							
Open Hole			8¾"		Surface	5,424	Shots/Ft.
Perforations							
Perforations							
Perforations							

Materials

Mud Type	WBM	Density	9	Lb/Gal
Disp. Fluid	Fresh Water	Density	8.33	Lb/Gal
Spacer type	gel spacer	BBL.	20	8.33
Spacer type		BBL.		
Acid Type		Gal.	%	
Acid Type		Gal.	%	
Surfactant		Gal.	In	
NE Agent		Gal.	In	
Fluid Loss		Gal/Lb	In	
Gelling Agent		Gal/Lb	In	
Fric. Red.		Gal/Lb	In	
MISC.		Gal/Lb	In	
Perfpac Balls		Qty.		
Other				
Other				
Other				
Other				
Other				

Hours On Location

Date	Hours
12/11	8.0
Total	8.0

Operating Hours

Date	Hours
12/12	2.0
Total	2.0

Description of Job

Intermediate

Pressures

MAX 5,000 PSI AVG. 500psi

Average Rates in BPM

MAX 8 BPM AVG 5bpm

Cement Left in Pipe

Feet 46 Reason SHOE JOINT

Cement Data

Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	280	50/50 POZ PREMIUM	4% Gel - 0.2% FL-17 - 0.1% C-51 - 0.3% C-20 - 0.1% C-37 - 0.2% X-Air	6.93	1.43	13.60
2	100	Premium	0.2% FL-17 - 0.1% C-51 - 0.15% C-20 - 0.2% X-Air	5.19	1.19	15.60
3	0	0	0	0.00	0.00	0.00

Summary

Preflush _____ Type: _____

Breakdown _____ MAXIMUM 5,000 PSI

_____ Lost Returns-N NO/FULL

_____ Actual TOC _____

Average _____ Bump Plug PSI: 1,300

ISIP _____ 5 Min. _____ 10 Min _____ 15 Min _____

Preflush:	BBl	30.00
Load & Bkdn:	Gal - BBl	N/A
Excess /Return	BBl	N/A
Calc. TOC:		1,965
Final Circ.	PSI:	700
Cement Slurry:	BBl	92.0
Total Volume	BBl	324.00

Type: Gel Spacer

Pad:Bbl -Gal N/A

Calc.Disp Bbl 204

Actual Disp. 202.00

Disp:Bbl _____

CUSTOMER REPRESENTATIVE _____ SIGNATURE

STAGE 1							
		Port @	10,106 '				
Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	Time, min
20	1000	24					1
96	16542	394					4
96	18400	438	40/70	0.25	Genoa	4600	5
96	12200	290	40/70	0.50	Genoa	6100	3
96	4200	100					1
96	12267	292	40/70	0.75	Genoa	9200	3
96	4200	100					1
96	10700	255	40/70	1.00	Genoa	10700	3
96	15829	377					3.9
	95,337	**2,270**				**30,600**	**24.6**

2) as follows:

te to 5-10bpm as +/- 224 bbls (50 bbls before ball seats).

STAGE 2							
		Port @	9,922 '				
ate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
20	750	18					1
96	15167	361					4
96	16400	390	40/70	0.25	Genoa	4100	4
96	11000	262	40/70	0.50	Genoa	5500	3
96	4200	100					1
96	11067	263	40/70	0.75	Genoa	8300	3
96	4200	100					1
96	9600	229	40/70	1.00	Genoa	9600	2
96	15710	374					3.9
	88,093	**2,097**				**27,500**	**22.6**

3) as follows:

e to 5-10bpm as +/- 221 bbls (50 bbls before ball seats).

STAGE 3							
		Port @	9,791 '				
ate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
20	500	12					1
96	14525	346					4
96	15600	371	40/70	0.25	Genoa	3900	4
96	10400	248	40/70	0.50	Genoa	5200	3
96	4200	100					1
96	10400	248	40/70	0.75	Genoa	7800	3
96	4200	100					1
96	9100	217	40/70	1.00	Genoa	9100	2
96	15624	372					3.9
	84,549	**2,013**				**26,000**	**21.4**

Frac the MISSISSIPPI (Stage 4) as follows:
Drop 2.125" ball. Reduce rate to 5-10bpm as +/- 219 bbls (50 bbls before ball seats).

STAGE 4								
			Port @	9,654 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15133	360					4
Slickwater	96	16400	390	40/70	0.25	Genoa	4100	4
Slickwater	96	11000	262	40/70	0.50	Genoa	5500	3
Slickwater	96	4200	100					1
Slickwater	96	10933	260	40/70	0.75	Genoa	8200	3
Slickwater	96	4200	100					1
Slickwater	96	9600	229	40/70	1.00	Genoa	9600	2
Slickwater	96	15535	370					3.9
TOTAL		87,251	2,077				27,400	21.9

Frac the MISSISSIPPI (Stage 5) as follows:
Drop 2.188" ball. Reduce rate to 5-10bpm as +/- 217 bbls (50 bbls before ball seats).

STAGE 5								
			Port @	9,508 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15900	379					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11600	276	40/70	0.50	Genoa	5800	3
Slickwater	96	4200	100					1
Slickwater	96	11600	276	40/70	0.75	Genoa	8700	3
Slickwater	96	4200	100					1
Slickwater	96	10200	243	40/70	1.00	Genoa	10200	3
Slickwater	96	15440	368					3.8
TOTAL		90,990	2,166				29,100	22.8

Frac the MISSISSIPPI (Stage 6) as follows:
Drop 2.250" ball. Reduce rate to 5-10bpm as +/- 215 bbls (50 bbls before ball seats).

STAGE 6								
			Port @	9,362 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15983	381					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11733	279	40/70	0.75	Genoa	8800	3
Slickwater	96	4200	100					1
Slickwater	96	10200	243	40/70	1.00	Genoa	10200	3
Slickwater	96	15345	365					3.8
TOTAL		91,312	2,174				29,300	22.9

Frac the MISSISSIPPI (Stage 7) as follows:
Drop 2.313" ball. Reduce rate to 5-10bpm as +/- 213 bbls (50 bbls before ball seats).

STAGE 7								
			Port @	9,216 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15983	381					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11733	279	40/70	0.75	Genoa	8800	3
Slickwater	96	4200	100					1
Slickwater	96	10200	243	40/70	1.00	Genoa	10200	3
Slickwater	96	15250	363					3.8
TOTAL		91,216	2,172				29,300	22.9

Frac the MISSISSIPPI (Stage 8) as follows:
Drop 2.375" ball. Reduce rate to 5-10bpm as +/- 210 bbls (50 bbls before ball seats).

STAGE 8								
			Port @	9,071 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15742	375					4
Slickwater	96	17200	410	40/70	0.25	Genoa	4300	4
Slickwater	96	11600	276	40/70	0.50	Genoa	5800	3
Slickwater	96	4200	100					1
Slickwater	96	11467	273	40/70	0.75	Genoa	8600	3
Slickwater	96	4200	100					1
Slickwater	96	10100	240	40/70	1.00	Genoa	10100	3
Slickwater	96	15156	361					3.8
TOTAL		89,914	2,141				28,800	22.5

Frac the MISSISSIPPI (Stage 9) as follows:
Drop 2.438" ball. Reduce rate to 5-10bpm as +/- 208 bbls (50 bbls before ball seats).

STAGE 9								
			Port @	8,926 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16008	381					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11733	279	40/70	0.75	Genoa	8800	3
Slickwater	96	4200	100					1
Slickwater	96	10300	245	40/70	1.00	Genoa	10300	3
Slickwater	96	15061	359					3.7
TOTAL		91,152	2,170				29,400	22.8

Frac the MISSISSIPPI (Stage 10) as follows:
Drop 2.500" ball. Reduce rate to 5-10bpm as +/- 206 bbls (50 bbls before ball seats).

STAGE 10								
			Port @	8,778 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	19775	471					5
Slickwater	96	22800	543	40/70	0.25	Genoa	5700	6
Slickwater	96	15200	362	40/70	0.50	Genoa	7600	4
Slickwater	96	5358	128					1
Slickwater	96	15200	362	40/70	0.75	Genoa	11400	4
Slickwater	96	5358	128					1
Slickwater	96	13300	317	40/70	1.00	Genoa	13300	3
Slickwater	96	14965	356					3.7
TOTAL		112,205	2,672				38,000	28.1

Frac the MISSISSIPPI (Stage 11) as follows:
Drop 2.563" ball. Reduce rate to 5-10bpm as +/- 204 bbls (50 bbls before ball seats).

STAGE 11								
			Port @	8,637 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	11667	278					3
Slickwater	96	11600	276	40/70	0.25	Genoa	2900	3
Slickwater	96	7800	186	40/70	0.50	Genoa	3900	2
Slickwater	96	4200	100					1
Slickwater	96	7867	187	40/70	0.75	Genoa	5900	2
Slickwater	96	4200	100					1
Slickwater	96	6800	162	40/70	1.00	Genoa	6800	2
Slickwater	96	14873	354					3.7
TOTAL		69,256	1,649				19,500	17.4

Frac the MISSISSIPPI (Stage 12) as follows:
Drop 2.625" ball. Reduce rate to 5-10bpm as +/- 201 bbls (50 bbls before ball seats).

STAGE 12								
			Port @	8,500 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	19167	456					5
Slickwater	96	22000	524	40/70	0.25	Genoa	5500	5
Slickwater	96	14600	348	40/70	0.50	Genoa	7300	4
Slickwater	96	4646	111					1
Slickwater	96	14667	349	40/70	0.75	Genoa	11000	4
Slickwater	96	4646	111					1
Slickwater	96	12800	305	40/70	1.00	Genoa	12800	3
Slickwater	96	14784	352					3.7
TOTAL		107,560	2,561				36,600	26.9

Frac the MISSISSIPPI (Stage 13) as follows:
Drop 2.688" ball. Reduce rate to 5-10bpm as +/- 199 bbls (50 bbls before ball seats).

STAGE 13								
			Port @	8,354 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	11900	283					3
Slickwater	96	12000	286	40/70	0.25	Genoa	3000	3
Slickwater	96	8000	190	40/70	0.50	Genoa	4000	2
Slickwater	96	4200	100					1
Slickwater	96	8000	190	40/70	0.75	Genoa	6000	2
Slickwater	96	4200	100					1
Slickwater	96	7000	167	40/70	1.00	Genoa	7000	2
Slickwater	96	14689	350					3.6
TOTAL		70,239	1,672				20,000	17.7

Frac the MISSISSIPPI (Stage 14) as follows:
Drop 2.750" ball. Reduce rate to 5-10bpm as +/- 198 bbls (50 bbls before ball seats).

STAGE 14								
			Port @	8,254 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	11292	269					3
Slickwater	96	11200	267	40/70	0.25	Genoa	2800	3
Slickwater	96	7400	176	40/70	0.50	Genoa	3700	2
Slickwater	96	4200	100					1
Slickwater	96	7467	178	40/70	0.75	Genoa	5600	2
Slickwater	96	4200	100					1
Slickwater	96	6500	155	40/70	1.00	Genoa	6500	2
Slickwater	96	14623	348					3.6
TOTAL		67,132	1,598				18,600	16.9

Frac the MISSISSIPPI (Stage 15) as follows:
Drop 2.813" ball. Reduce rate to 5-10bpm as +/- 195 bbls (50 bbls before ball seats).

STAGE 15								
			Port @	8,067 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	20150	480					5
Slickwater	96	23200	552	40/70	0.25	Genoa	5800	6
Slickwater	96	15600	371	40/70	0.50	Genoa	7800	4
Slickwater	96	5886	140					1
Slickwater	96	15600	371	40/70	0.75	Genoa	11700	4
Slickwater	96	5886	140					1
Slickwater	96	13600	324	40/70	1.00	Genoa	13600	3
Slickwater	96	14502	345					3.6
TOTAL		114,675	2,730				38,900	28.7

Frac the MISSISSIPPI (Stage 16) as follows:
Drop 2.875" ball. Reduce rate to 5-10bpm as +/- 192 bbls (50 bbls before ball seats).

STAGE 16								
			Port @	7,919 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16067	383					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11867	283	40/70	0.75	Genoa	8900	3
Slickwater	96	4200	100					1
Slickwater	96	10400	248	40/70	1.00	Genoa	10400	3
Slickwater	96	14406	343					3.6
TOTAL		90,789	2,162				29,600	22.8

Frac the MISSISSIPPI (Stage 17) as follows:
Drop 2.938" ball. Reduce rate to 5-10bpm as +/- 190 bbls (50 bbls before ball seats).

STAGE 17								
			Port @	7,772 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16067	383					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11867	283	40/70	0.75	Genoa	8900	3
Slickwater	96	4200	100					1
Slickwater	96	10400	248	40/70	1.00	Genoa	10400	3
Slickwater	96	14309	341					3.5
TOTAL		90,693	2,159				29,600	22.7

Frac the MISSISSIPPI (Stage 18) as follows:
Drop 3.000" ball. Reduce rate to 5-10bpm as +/- 188 bbls (50 bbls before ball seats).

STAGE 18								
			Port @	7,624 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16008	381					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11733	279	40/70	0.75	Genoa	8800	3
Slickwater	96	4200	100					1
Slickwater	96	10300	245	40/70	1.00	Genoa	10300	3
Slickwater	96	14213	338					3.5
TOTAL		90,305	2,150				29,400	22.6

Frac the MISSISSIPPI (Stage 19) as follows:
Drop 3.063" ball. Reduce rate to 5-10bpm as +/- 186 bbls (50 bbls before ball seats).

STAGE 19								
			Port @	7,477 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16042	382					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11867	283	40/70	0.75	Genoa	8900	3
Slickwater	96	4200	100					1
Slickwater	96	10300	245	40/70	1.00	Genoa	10300	3
Slickwater	96	14118	336					3.5
TOTAL		90,376	2,152				29,500	22.7

Frac the MISSISSIPPI (Stage 20) as follows:
Drop 3.125" ball. Reduce rate to 5-10bpm as +/- 215 bbls (50 bbls before ball seats).

STAGE 20								
			Port @	7,329 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15667	373					4
Slickwater	96	17200	410	40/70	0.25	Genoa	4300	4
Slickwater	96	11400	271	40/70	0.50	Genoa	5700	3
Slickwater	96	4200	100					1
Slickwater	96	11467	273	40/70	0.75	Genoa	8600	3
Slickwater	96	4200	100					1
Slickwater	96	10000	238	40/70	1.00	Genoa	10000	2
Slickwater	96	14021	334					3.5
TOTAL		88,405	2,105				28,600	22.2

Frac the MISSISSIPPI (Stage 21) as follows:
Drop 3.188" ball. Reduce rate to 5-10bpm as +/- 213 bbls (50 bbls before ball seats).

STAGE 21								
			Port @	7,186 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	15692	374					4
Slickwater	96	17200	410	40/70	0.25	Genoa	4300	4
Slickwater	96	11400	271	40/70	0.50	Genoa	5700	3
Slickwater	96	4200	100					1
Slickwater	96	11467	273	40/70	0.75	Genoa	8600	3
Slickwater	96	4200	100					1
Slickwater	96	10100	240	40/70	1.00	Genoa	10100	3
Slickwater	96	13928	332					3.5
TOTAL		88,437	2,106				28,700	22.2

Frac the MISSISSIPPI (Stage 22) as follows:
Drop 3.250" ball. Reduce rate to 5-10bpm as +/- 210 bbls (50 bbls before ball seats).

STAGE 22								
			Port @	7,042 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	19400	462					5
Slickwater	96	22400	533	40/70	0.25	Genoa	5600	6
Slickwater	96	14800	352	40/70	0.50	Genoa	7400	4
Slickwater	96	5390	128					1
Slickwater	96	14800	352	40/70	0.75	Genoa	11100	4
Slickwater	96	5390	128					1
Slickwater	96	13000	310	40/70	1.00	Genoa	13000	3
Slickwater	96	13835	329					3.4
TOTAL		109,265	2,602				37,100	27.3

Frac the MISSISSIPPI (Stage 23) as follows:
Drop 3.313" ball. Reduce rate to 5-10bpm as +/- 208 bbls (50 bbls before ball seats).

STAGE 23								
			Port @	6,857 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	20275	483					5
Slickwater	96	23600	562	40/70	0.25	Genoa	5900	6
Slickwater	96	15600	371	40/70	0.50	Genoa	7800	4
Slickwater	96	6203	148					2
Slickwater	96	15600	371	40/70	0.75	Genoa	11700	4
Slickwater	96	6203	148					2
Slickwater	96	13700	326	40/70	1.00	Genoa	13700	3
Slickwater	96	13714	327					3.4
TOTAL		115,145	2,742				39,100	28.8

Frac the MISSISSIPPI (Stage 24) as follows:
Drop 3.375" ball. Reduce rate to 5-10bpm as +/- 206 bbls (50 bbls before ball seats).

STAGE 24								
			Port @	6,661 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	24358	580					6
Slickwater	96	29200	695	40/70	0.25	Genoa	7300	7
Slickwater	96	19400	462	40/70	0.50	Genoa	9700	5
Slickwater	96	9759	232					2
Slickwater	96	19333	460	40/70	0.75	Genoa	14500	5
Slickwater	96	9759	232					2
Slickwater	96	16900	402	40/70	1.00	Genoa	16900	4
Slickwater	96	13587	323					3.4
TOTAL		142,546	3,394				48,400	35.6

Frac the MISSISSIPPI (Stage 25) as follows:
Drop 3.438" ball. Reduce rate to 5-10bpm as +/- 215 bbls (50 bbls before ball seats).

STAGE 25								
			Port @	6,467 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16167	385					4
Slickwater	96	18000	429	40/70	0.25	Genoa	4500	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11867	283	40/70	0.75	Genoa	8900	3
Slickwater	96	4200	100					1
Slickwater	96	10400	248	40/70	1.00	Genoa	10400	3
Slickwater	96	13460	320					3.3
TOTAL		90,343	2,151				29,700	22.6

Frac the MISSISSIPPI (Stage 26) as follows:
Drop 3.500" ball. Reduce rate to 5-10bpm as +/- 213 bbls (50 bbls before ball seats).

STAGE 26								
			Port @	6,271 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	24417	581					6
Slickwater	96	29200	695	40/70	0.25	Genoa	7300	7
Slickwater	96	19400	462	40/70	0.50	Genoa	9700	5
Slickwater	96	10034	239					2
Slickwater	96	19467	463	40/70	0.75	Genoa	14600	5
Slickwater	96	10034	239					2
Slickwater	96	17000	405	40/70	1.00	Genoa	17000	4
Slickwater	96	13332	317					3.3
TOTAL		143,134	3,408				48,600	35.7

Frac the MISSISSIPPI (Stage 27) as follows:
Drop 3.563" ball. Reduce rate to 5-10bpm as +/- 210 bbls (50 bbls before ball seats).

STAGE 27								
			Port @	6,075 '				
Fluid	Rate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
15% HCl acid	20	250	6					0
Slickwater	96	16067	383					4
Slickwater	96	17600	419	40/70	0.25	Genoa	4400	4
Slickwater	96	11800	281	40/70	0.50	Genoa	5900	3
Slickwater	96	4200	100					1
Slickwater	96	11867	283	40/70	0.75	Genoa	8900	3
Slickwater	96	4200	100					1
Slickwater	96	10400	248	40/70	1.00	Genoa	10400	3
Slickwater	96	13205	314					3.3
TOTAL		89,588	2,133				29,600	22.5

28) as follows:
te to 5-10bpm as +/- 208 bbls (50 bbls before ball seats).

STAGE 28							
		Port @	5,879 '				
ate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
20	250	6					0
96	24417	581					6
96	29200	695	40/70	0.25	Genoa	7300	7
96	19400	462	40/70	0.50	Genoa	9700	5
96	10250	244					3
96	19467	463	40/70	0.75	Genoa	14600	5
96	10250	244					3
96	17000	405	40/70	1.00	Genoa	17000	4
96	13078	311					3.2
	143,310	3,412				48,600	35.8

29) as follows:
te to 5-10bpm as +/- 206 bbls (50 bbls before ball seats).

STAGE 29							
		Port @	5,690 '				
ate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
20	250	6					0
96	15292	364					4
96	16800	400	40/70	0.25	Genoa	4200	4
96	11000	262	40/70	0.50	Genoa	5500	3
96	4200	100					1
96	11067	263	40/70	0.75	Genoa	8300	3
96	4200	100					1
96	9700	231	40/70	1.00	Genoa	9700	2
96	12954	308					3.2
	85,463	2,035				27,700	21.4

30) as follows:
te to 5-10bpm as +/- 215 bbls (50 bbls before ball seats).

STAGE 30							
		Port @	5,501 '				
ate	Vol, gal	Vol, bbl	Prop	Prop Con	Prop type	Prop, lbs	ime, min
20	250	6					0
96	22133	527					5
96	26000	619	40/70	0.25	Genoa	6500	6
96	17400	414	40/70	0.50	Genoa	8700	4
96	8261	197					2
96	17333	413	40/70	0.75	Genoa	13000	4
96	8261	197					2
96	15200	362	40/70	1.00	Genoa	15200	4
96	12831	306					3.2
	127,670	3,040				43,400	31.9

Sandridge Energy, INC.(mid-con.)

Sumner County (KS27S)
Sec 07-T35S-R03W
Helen 3503 1-18H/Job# 05049-431-22/Lariat 40

Wellbore #1

Design: Wellbore #1

Standard Survey Report

26 December, 2014

ARCHER
Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	**Local Co-ordinate Reference:**	Well Helen 3503 1-18H/Job# 05049-431-22/Lariat 40
Project:	Sumner County (KS27S)	**TVD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Site:	Sec 07-T35S-R03W	**MD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Well:	Helen 3503 1-18H/Job# 05049-431-22/Lariat 40	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	EDM 5000.1 Single User Db

Project Sumner County (KS27S)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas South 1502		

Site Sec 07-T35S-R03W

Site Position:		**Northing:**	131,086.00 usft	**Latitude:**	37° 1' 25.499 N
From:	Map	**Easting:**	2,240,724.00 usft	**Longitude:**	97° 40' 31.778 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.51 °

Well Helen 3503 1-18H/Job# 05049-431-22/Lariat 40

Well Position	**+N/-S**	0.0 usft	**Northing:**	131,086.00 usft	**Latitude:**	37° 1' 25.499 N
	+E/-W	0.0 usft	**Easting:**	2,240,724.00 usft	**Longitude:**	97° 40' 31.778 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,162.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2014/11/03	4.05	65.11	51,563

Design Wellbore #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	183.78

Survey Program **Date** 2014/12/26

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
249.0	10,162.0	Archer MWD Survey (Wellbore #1)	MWD	MWD - Standard

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
249.0	0.90	18.60	249.0	1.9	0.6	-1.9	0.36	0.36	0.00
First Single Shot Survey									
463.0	0.60	18.60	463.0	4.5	1.5	-4.6	0.14	-0.14	0.00
Last Single Shot Survey									
523.0	0.20	18.60	523.0	4.9	1.7	-5.0	0.67	-0.67	0.00
First Archer MWD Survey									
707.0	0.10	341.40	707.0	5.4	1.7	-5.5	0.07	-0.05	-20.22
980.0	0.30	114.30	980.0	5.3	2.3	-5.4	0.14	0.07	48.68
1,435.0	0.40	117.50	1,435.0	4.1	4.8	-4.4	0.02	0.02	0.70

ARCHER
Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	**Local Co-ordinate Reference:**	Well Helen 3503 1-18H/Job# 05049-431-22/Lariat 40
Project:	Sumner County (KS27S)	**TVD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Site:	Sec 07-T35S-R03W	**MD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Well:	Helen 3503 1-18H/Job# 05049-431-22/Lariat 40	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #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)
1,906.0	0.40	162.70	1,905.9	1.7	6.7	-2.2	0.07	0.00	9.60
2,380.0	0.00	276.40	2,379.9	0.2	7.2	-0.6	0.08	-0.08	0.00
2,853.0	9.80	342.00	2,850.6	38.5	-5.3	-38.1	2.07	2.07	0.00
3,137.0	9.10	341.00	3,130.8	82.8	-20.0	-81.3	0.25	-0.25	-0.35
3,327.0	8.20	341.00	3,318.6	109.8	-29.3	-107.6	0.47	-0.47	0.00
3,769.0	2.80	180.20	3,759.4	128.8	-39.7	-125.9	2.46	-1.22	-36.38
3,801.0	2.90	184.00	3,791.4	127.3	-39.7	-124.4	0.67	0.31	11.88
3,832.0	4.70	183.00	3,822.3	125.2	-39.9	-122.3	5.81	5.81	-3.23
3,864.0	7.40	180.50	3,854.1	121.8	-39.9	-118.9	8.48	8.44	-7.81
3,895.0	9.40	180.10	3,884.8	117.3	-40.0	-114.4	6.45	6.45	-1.29
3,926.0	11.50	182.20	3,915.3	111.7	-40.1	-108.8	6.88	6.77	6.77
3,958.0	13.40	183.80	3,946.5	104.8	-40.5	-101.9	6.03	5.94	5.00
3,990.0	15.40	185.00	3,977.5	96.9	-41.1	-93.9	6.32	6.25	3.75
4,022.0	17.30	184.40	4,008.2	87.9	-41.8	-84.9	5.96	5.94	-1.88
4,054.0	18.90	185.40	4,038.6	78.0	-42.7	-75.0	5.09	5.00	3.13
4,085.0	20.40	186.70	4,067.8	67.6	-43.8	-64.6	5.04	4.84	4.19
4,117.0	23.20	186.40	4,097.5	55.8	-45.1	-52.7	8.76	8.75	-0.94
4,148.0	25.50	186.50	4,125.8	43.1	-46.6	-40.0	7.42	7.42	0.32
4,180.0	27.80	186.50	4,154.4	28.9	-48.2	-25.6	7.19	7.19	0.00
4,212.0	29.80	186.00	4,182.4	13.5	-49.9	-10.2	6.30	6.25	-1.56
4,243.0	31.50	185.10	4,209.1	-2.2	-51.4	5.6	5.68	5.48	-2.90
4,274.0	33.10	182.20	4,235.3	-18.7	-52.4	22.1	7.18	5.16	-9.35
4,307.0	35.70	179.90	4,262.5	-37.4	-52.8	40.8	8.81	7.88	-6.97
4,338.0	39.10	179.90	4,287.2	-56.2	-52.7	59.5	10.97	10.97	0.00
4,370.0	41.90	181.10	4,311.5	-77.0	-52.9	80.3	9.08	8.75	3.75
4,401.0	44.40	180.80	4,334.1	-98.2	-53.3	101.5	8.09	8.06	-0.97
4,433.0	48.10	181.00	4,356.2	-121.3	-53.6	124.5	11.57	11.56	0.63
4,464.0	51.70	182.80	4,376.2	-145.0	-54.4	148.2	12.43	11.61	5.81
4,495.0	53.30	184.30	4,395.1	-169.5	-55.9	172.8	6.43	5.16	4.84
4,527.0	54.90	184.30	4,413.8	-195.4	-57.9	198.7	5.00	5.00	0.00
4,559.0	58.10	184.30	4,431.5	-222.0	-59.9	225.4	10.00	10.00	0.00
4,604.0	59.90	185.00	4,454.7	-260.4	-63.0	264.0	4.22	4.00	1.56
4,653.0	61.00	185.10	4,478.8	-302.9	-66.8	306.6	2.25	2.24	0.20
4,698.0	62.10	185.00	4,500.3	-342.3	-70.3	346.2	2.45	2.44	-0.22
4,748.0	63.00	185.10	4,523.3	-386.5	-74.2	390.5	1.81	1.80	0.20
4,779.0	64.20	184.80	4,537.1	-414.1	-76.6	418.3	3.97	3.87	-0.97
4,810.0	65.90	184.60	4,550.2	-442.2	-78.9	446.4	5.51	5.48	-0.65
4,842.0	67.40	184.30	4,562.9	-471.4	-81.1	475.8	4.77	4.69	-0.94
4,873.0	68.70	184.40	4,574.4	-500.1	-83.3	504.5	4.20	4.19	0.32
4,905.0	69.80	184.30	4,585.8	-529.9	-85.6	534.4	3.45	3.44	-0.31
4,917.0	70.20	184.30	4,589.9	-541.2	-86.4	545.7	3.33	3.33	0.00
4,948.0	72.40	184.30	4,599.8	-570.5	-88.6	575.1	7.10	7.10	0.00
4,979.0	73.80	184.50	4,608.8	-600.0	-90.9	604.7	4.56	4.52	0.65

ARCHER
Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	**Local Co-ordinate Reference:**	Well Helen 3503 1-18H/Job# 05049-431-22/Lariat 40
Project:	Sumner County (KS27S)	**TVD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Site:	Sec 07-T35S-R03W	**MD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Well:	Helen 3503 1-18H/Job# 05049-431-22/Lariat 40	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #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)
5,011.0	75.00	184.10	4,617.4	-630.8	-93.2	635.6	3.94	3.75	-1.25
5,042.0	76.40	184.00	4,625.1	-660.7	-95.3	665.6	4.53	4.52	-0.32
5,074.0	78.60	183.80	4,632.0	-691.9	-97.5	696.8	6.90	6.88	-0.63
5,106.0	82.40	182.90	4,637.3	-723.4	-99.3	728.4	12.19	11.88	-2.81
5,151.0	84.80	182.40	4,642.3	-768.1	-101.4	773.1	5.45	5.33	-1.11
5,200.0	85.20	182.70	4,646.6	-816.8	-103.5	821.9	1.02	0.82	0.61
5,245.0	85.40	182.50	4,650.3	-861.6	-105.6	866.7	0.63	0.44	-0.44
5,295.0	85.70	182.20	4,654.2	-911.5	-107.6	916.6	0.85	0.60	-0.60
5,340.0	85.70	182.40	4,657.5	-956.3	-109.4	961.4	0.44	0.00	0.44
5,374.0	86.50	182.60	4,659.8	-990.2	-110.9	995.3	2.43	2.35	0.59
5,396.0	86.90	182.70	4,661.1	-1,012.1	-111.9	1,017.3	1.87	1.82	0.45
5,491.0	90.90	181.30	4,662.9	-1,107.0	-115.2	1,112.2	4.46	4.21	-1.47
5,585.0	90.90	179.90	4,661.5	-1,201.0	-116.2	1,206.1	1.49	0.00	-1.49
5,656.0	87.70	180.80	4,662.3	-1,272.0	-116.6	1,276.9	4.68	-4.51	1.27
5,750.0	89.80	182.50	4,664.4	-1,365.9	-119.4	1,370.8	2.87	2.23	1.81
5,845.0	90.10	183.00	4,664.5	-1,460.8	-123.9	1,465.8	0.61	0.32	0.53
5,940.0	91.40	183.50	4,663.2	-1,555.6	-129.3	1,560.8	1.47	1.37	0.53
6,034.0	92.70	185.80	4,659.8	-1,649.3	-136.9	1,654.7	2.81	1.38	2.45
6,128.0	91.60	186.20	4,656.3	-1,742.7	-146.7	1,748.6	1.25	-1.17	0.43
6,223.0	92.10	187.50	4,653.3	-1,837.0	-158.1	1,843.4	1.47	0.53	1.37
6,315.0	90.20	186.30	4,651.4	-1,928.3	-169.1	1,935.2	2.44	-2.07	-1.30
6,406.0	87.20	183.90	4,653.5	-2,018.9	-177.2	2,026.2	4.22	-3.30	-2.64
6,498.0	88.30	182.60	4,657.1	-2,110.6	-182.4	2,118.1	1.85	1.20	-1.41
6,590.0	86.60	182.20	4,661.2	-2,202.5	-186.3	2,210.0	1.90	-1.85	-0.43
6,681.0	90.30	183.30	4,663.6	-2,293.3	-190.6	2,300.9	4.24	4.07	1.21
6,772.0	85.30	183.60	4,667.1	-2,384.0	-196.1	2,391.8	5.50	-5.49	0.33
6,865.0	85.60	182.80	4,674.5	-2,476.6	-201.3	2,484.5	0.92	0.32	-0.86
6,956.0	89.90	183.00	4,678.1	-2,567.4	-205.9	2,575.4	4.73	4.73	0.22
7,048.0	90.10	183.30	4,678.1	-2,659.3	-210.9	2,667.4	0.39	0.22	0.33
7,137.0	89.70	183.60	4,678.2	-2,748.1	-216.3	2,756.4	0.56	-0.45	0.34
7,229.0	89.20	183.70	4,679.1	-2,839.9	-222.1	2,848.4	0.55	-0.54	0.11
7,319.0	89.40	183.90	4,680.2	-2,929.7	-228.1	2,938.4	0.31	0.22	0.22
7,410.0	92.70	184.40	4,678.5	-3,020.4	-234.7	3,029.3	3.67	3.63	0.55
7,501.0	90.90	184.70	4,675.7	-3,111.1	-241.9	3,120.3	2.01	-1.98	0.33
7,592.0	88.10	185.70	4,676.5	-3,201.7	-250.1	3,211.2	3.27	-3.08	1.10
7,687.0	91.30	184.20	4,677.0	-3,296.3	-258.3	3,306.2	3.72	3.37	-1.58
7,781.0	88.60	183.70	4,677.1	-3,390.1	-264.8	3,400.2	2.92	-2.87	-0.53
7,875.0	91.60	183.90	4,676.9	-3,483.9	-271.0	3,494.2	3.20	3.19	0.21
7,970.0	92.90	183.90	4,673.2	-3,578.6	-277.5	3,589.1	1.37	1.37	0.00
8,065.0	91.60	185.00	4,669.4	-3,673.2	-284.9	3,684.0	1.79	-1.37	1.16
8,159.0	89.60	185.00	4,668.5	-3,766.9	-293.1	3,778.0	2.13	-2.13	0.00
8,254.0	88.00	184.70	4,670.4	-3,861.5	-301.1	3,873.0	1.71	-1.68	-0.32

ARCHER
Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	**Local Co-ordinate Reference:**	Well Helen 3503 1-18H/Job# 05049-431-22/Lariat 40
Project:	Sumner County (KS27S)	**TVD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Site:	Sec 07-T35S-R03W	**MD Reference:**	WELL @ 1180.0usft (Original Well Elev)
Well:	Helen 3503 1-18H/Job# 05049-431-22/Lariat 40	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #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)
8,347.0	86.90	182.80	4,674.6	-3,954.2	-307.2	3,965.9	2.36	-1.18	-2.04
8,441.0	91.60	182.10	4,675.8	-4,048.1	-311.2	4,059.8	5.06	5.00	-0.74
8,537.0	89.80	182.10	4,674.6	-4,144.0	-314.7	4,155.7	1.88	-1.88	0.00
8,632.0	90.30	181.60	4,674.6	-4,239.0	-317.8	4,250.7	0.74	0.53	-0.53
8,726.0	90.60	182.80	4,673.8	-4,332.9	-321.4	4,344.6	1.32	0.32	1.28
8,820.0	90.90	182.60	4,672.6	-4,426.8	-325.8	4,438.6	0.38	0.32	-0.21
8,915.0	91.30	182.60	4,670.8	-4,521.7	-330.1	4,533.6	0.42	0.42	0.00
9,009.0	90.50	183.60	4,669.3	-4,615.5	-335.2	4,627.6	1.36	-0.85	1.06
9,103.0	88.00	183.80	4,670.5	-4,709.3	-341.3	4,721.6	2.67	-2.66	0.21
9,198.0	90.20	184.40	4,672.0	-4,804.0	-348.0	4,816.5	2.40	2.32	0.63
9,292.0	88.00	184.80	4,673.5	-4,897.7	-355.6	4,910.5	2.38	-2.34	0.43
9,386.0	89.20	184.10	4,675.8	-4,991.4	-362.9	5,004.5	1.48	1.28	-0.74
9,481.0	87.90	184.20	4,678.2	-5,086.1	-369.7	5,099.4	1.37	-1.37	0.11
9,576.0	90.30	183.60	4,679.7	-5,180.9	-376.2	5,194.4	2.60	2.53	-0.63
9,670.0	89.80	183.10	4,679.6	-5,274.7	-381.7	5,288.4	0.75	-0.53	-0.53
9,765.0	91.50	183.60	4,678.5	-5,369.5	-387.2	5,383.4	1.87	1.79	0.53
9,859.0	89.40	184.30	4,677.8	-5,463.3	-393.7	5,477.4	2.35	-2.23	0.74
9,953.0	89.80	183.90	4,678.4	-5,557.1	-400.4	5,571.4	0.60	0.43	-0.43
10,047.0	89.00	184.30	4,679.4	-5,650.8	-407.2	5,665.4	0.95	-0.85	0.43
Last Archer MWD Survey									
10,162.0	89.00	184.30	4,681.4	-5,765.5	-415.8	5,780.4	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
249.0	249.0	1.9	0.6	First Single Shot Survey
463.0	463.0	4.5	1.5	Last Single Shot Survey
523.0	523.0	4.9	1.7	First Archer MWD Survey
10,047.0	4,679.4	-5,650.8	-407.2	Last Archer MWD Survey
10,162.0	4,681.4	-5,765.5	-415.8	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/5/2015
Job End Date:	1/7/2015
State:	Kansas
County:	Sumner
API Number:	15-191-22764-01-00
Operator Name:	SandRidge Energy
Well Name and Number:	Helen 3503 1-18H
Longitude:	-97.67549178
Latitude:	37.02374963
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	4,681
Total Base Water Volume (gal):	2,953,818
Total Base Non Water Volume:	0

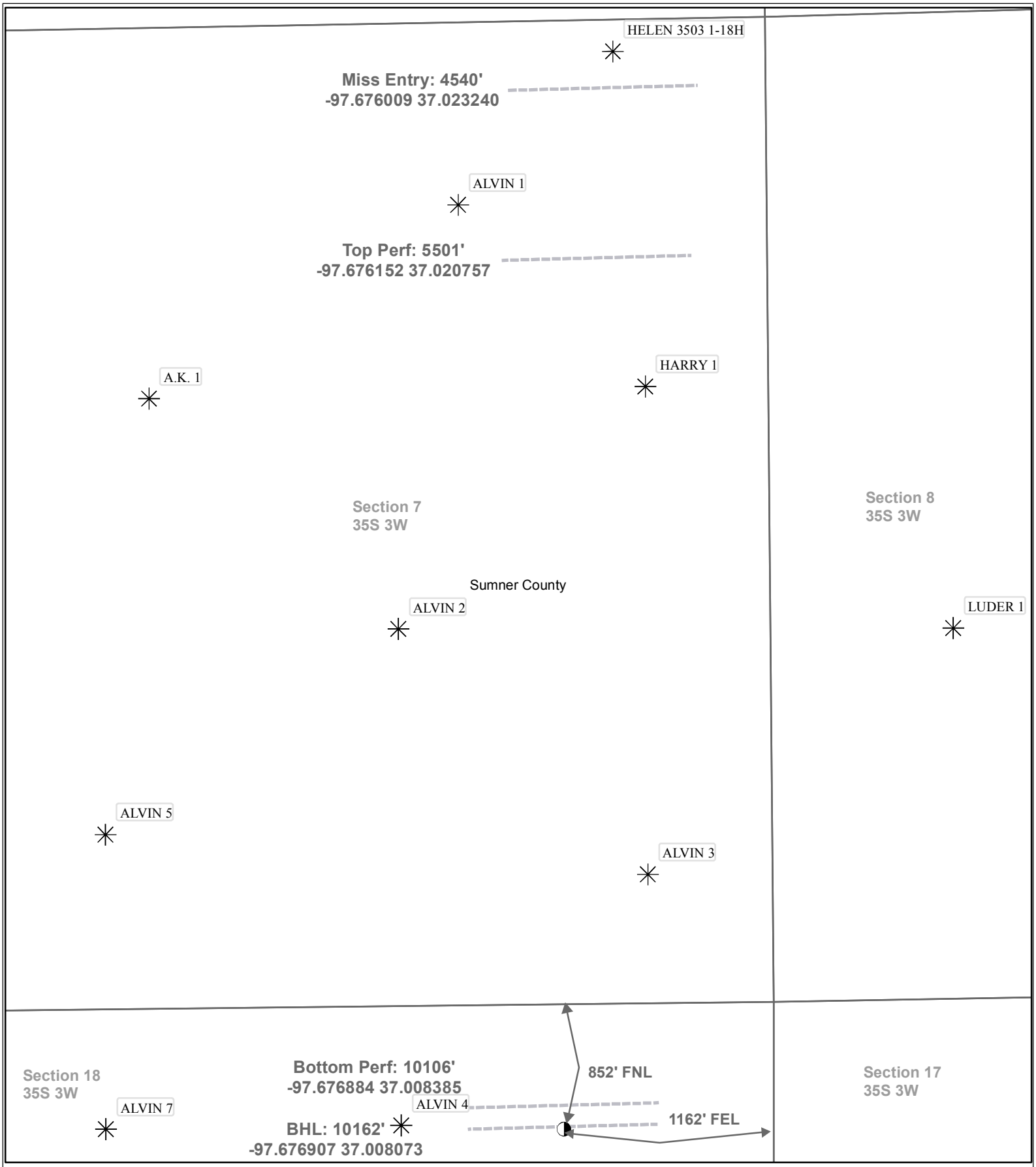
Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Archer	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	95.87985	None
Sand (Proppant)	Archer	Proppant					
			Silica Substrate	NA	100.00000	3.72245	None
Hydrochloric Acid (15%)	Archer	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.04901	None
			Methyl Alcohol	67-56-1	80.00000	0.00041	None
			thiourea-formaldehyde copolymer	68527-49-1	15.00000	0.00008	None
			NONYL PHENOL, 4 MOL	104-40-5	10.00000	0.00003	None
AIC	Archer	Liquid Acid Iron Control					
			Acetic Acid	64-19-7	50.00000	0.00090	None
			Citric Acid	77-92-9	30.00000	0.00054	None
Chemflush	Archer	Enviro-Friendly Chemical Flush					
			Hydrotreated Petroleum Distillate	64742-47-8	99.00000	0.00107	None
			Alcohol Ethoxylate Surfactants	NA	10.00000	0.00011	None
DiKlor	Sabre Energy Services	Oxidizer					
			Chlorine Dioxide	10069-04-4	0.40000	0.00035	

			Water	7732-18-5	99.90000	0.00022	
DiKlor	Sabre Energy Services	Oxidizer					
			Chlorine Dioxide	10069-04-4	0.40000	0.00044	
			Water	7732-18-5	99.90000	0.00011	
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Chemicals					
			Water	7732-18-5		0.03390	
			Anionic Polymer	N/A		0.01695	
			Aliphatic Hydrocarbon	64742-47-8		0.01695	
			Water	7732-18-5		0.00968	
			Polyol Ester	N/A		0.00283	
			Oxyalkylated Alcohol	68002-97-1		0.00283	
			Sodium Salt of Phosphate Ester	68131-72-6		0.00161	
			Acrylic Polymer	28205-96-1		0.00161	
			Water	7732-18-5		0.00063	
			Polyglycol Ester	N/A		0.00057	
			WATER	7732-18-5		0.00017	
			TRADE SECRET	N/A		0.00011	
			Alcohol Ethoxylate Surfactants	N/A		0.00008	
			Tetrasodium Ethylenediaminetetraacetate	64-02-8		0.00006	
			n-olefins	N/A		0.00004	
			Propargyl Alcohol	107-19-7		0.00003	
			METHANOL	67-56-1		0.00003	
			ISOPROPANOL	67-63-0		0.00003	
			Water	7732-18-5			
			Acetic Acid	64-19-7			
			Surfactant	N/A			
			Buffer	N/A			
			Cinnamic Aldehyde	104-55-2			

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



SANDRIDGE
THE POWER OF US

Actual BH Location

SandRidge Wells

Perf

Sections

Actual Bottom-Hole Location of Helen 3503 1-18H
T&R: 35S 3W
Section: 18, 1162' FEL & 852' FNL
-97.676907 37.008073

1 in = 667 ft

0 500 1,000 2,000 Feet

N

Draftsman: Dory Deines	Draft Date: 3/18/2015
Drawing Name/Number: Addendum_Helen 3503 1-18H.mxd	
Coordinate System: NAD 1927 State Plane Kansas South FIPS: 1502	