

SEP 26 2018



RECEIVED

Well Name HH SO 8 P2 5H	Lease HH SO 8 P2	Field Name Purple Sage	Business Unit Mid-Continent
Ground Elevation (ft) 3,245.00	Original RKB Elevation (ft) 3,273.00	Current RKB Elevation 3,273.00, 5/15/2017	Mud Line Elevation (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Water Depth (ft)
Current KB to Tubing Head (ft)			

Logs

Type	Logging Company	Date	Planned?	Cased?
Wellbore	Job	Depth Top (MD) (ftKB)	Bottom Depth (ftKB)	

Comment

Wellbores

Wellbore Name Original Hole	Parent Wellbore Original Hole	Directional Type Horizontal	Start Depth (MD) (ftKB)
Alt. Wellbore Identifier	TAML Classification N/A	TAML Functionality	Casing Configuration Class 1
Bottom Hole Legal Location	Wellbore UWI 300154393500	Wellbore ChevNo PJ8435-00	Vertical Section Direction (*) 358.66

Wellbore Sections

Hole Size (in)	Start Date	Act Top (ftKB)	Act Btm (ftKB)	Prop Top (ftKB)	Prop Btm (ftKB)

Kick Offs & Key Depths

Date	Type	Point or Interval	Top Depth (ftKB)	Depth Top (TVD) (ftKB)	Method Open-hole
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Last 5 PBTD's

Type	Date	PBTD (ftKB)	Depth (TVD) (ftKB)	Method	Com

Geologic Horizons

Formation Name	Prog Top (TVD SS) Override (ft(lev))	Prog Top (TVD) (ftKB)	Prog Btm (TVD SS) Override (ft(lev))	Prog Btm (TVD) (ftKB)	Drill Top MD (ftKB)	Drill Btm MD (ftKB)

Directional Surveys

Description MWD	Date 6/20/2017	Definitive? N	Planned? N	Job Drill and Suspend, 5/15/2017 12:00
Azimuth Tie In (*) 358.66	MD Tie In (ftKB)	Inclination Tie In (*)	NSTie In (ft)	EWtie In (ft)
TVD Tie In (ftKB)				

Comment

Survey Data

Date	MD (ftKB)	Incl (*)	Azm (*)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (*/100ft)	Method	Survey Company
5/15/2017	263	0.30	292.00	263.00	0.27	0.26	-0.64	0.11	Magn MWD	
5/15/2017	430.5	1.00	147.20	430.49	-0.80	-0.81	-0.25	0.75	Magn MWD	
5/15/2017	506	1.21	107.42	505.98	-1.62	-1.60	0.86	1.03	Magn MWD	Phoenix Directional
5/15/2017	686	1.97	114.32	685.91	-3.57	-3.44	5.50	0.43	Magn MWD	Phoenix Directional
5/15/2017	780	1.13	161.11	779.88	-5.15	-4.98	7.27	1.55	Magn MWD	Phoenix Directional
5/15/2017	873	1.23	168.01	872.86	-7.01	-6.83	7.77	0.19	Magn MWD	Phoenix Directional
5/15/2017	1,062	1.63	286.52	1,061.83	-8.18	-8.05	5.62	1.31	Magn MWD	Phoenix Directional
5/15/2017	1,251	1.46	282.83	1,250.76	-6.76	-6.75	0.69	0.10	Magn MWD	Phoenix Directional
5/15/2017	1,346	2.64	283.81	1,345.69	-5.90	-5.96	-2.61	1.24	Magn MWD	Phoenix Directional
5/15/2017	1,440	2.65	288.10	1,439.59	-4.61	-4.77	-6.78	0.21	Magn MWD	Phoenix Directional
5/15/2017	1,535	3.72	290.05	1,534.45	-2.75	-3.03	-11.76	1.13	Magn MWD	Phoenix Directional
5/15/2017	1,630	4.12	284.46	1,629.22	-0.70	-1.12	-17.96	0.58	Magn MWD	Phoenix Directional
5/15/2017	1,725	5.37	280.08	1,723.90	1.11	0.51	-25.64	1.37	Magn MWD	Phoenix Directional
5/15/2017	1,819	4.65	284.05	1,817.54	2.99	2.21	-33.67	0.85	Magn MWD	Phoenix Directional
5/15/2017	1,914	5.92	272.96	1,912.13	4.38	3.39	-42.30	1.71	Magn MWD	Phoenix Directional
5/15/2017	2,009	8.11	264.68	2,006.42	4.28	3.03	-53.87	2.53	Magn MWD	Phoenix Directional
5/15/2017	2,103	7.65	264.21	2,099.53	3.34	1.78	-66.69	0.49	Magn MWD	Phoenix Directional
5/15/2017	2,198	7.82	262.65	2,193.67	2.17	0.31	-79.39	0.28	Magn MWD	Phoenix Directional
5/15/2017	2,292	7.99	261.69	2,286.77	0.71	-1.45	-92.20	0.23	Magn MWD	Phoenix Directional
5/15/2017	2,387	7.70	266.89	2,380.89	-0.29	-2.75	-105.09	0.81	Magn MWD	Phoenix Directional
5/15/2017	2,482	7.31	272.45	2,475.07	-0.09	-2.83	-117.48	0.87	Magn MWD	Phoenix Directional
5/15/2017	2,576	6.66	274.37	2,568.38	0.85	-2.16	-128.89	0.73	Magn MWD	Phoenix Directional
5/15/2017	2,671	4.44	274.35	2,662.92	1.76	-1.46	-138.05	2.34	Magn MWD	Phoenix Directional
5/15/2017	2,766	4.32	273.40	2,757.65	2.42	-0.97	-145.29	0.15	Magn MWD	Phoenix Directional
5/15/2017	2,860	4.44	273.42	2,851.37	3.02	-0.55	-152.46	0.13	Magn MWD	Phoenix Directional
5/15/2017	2,955	4.32	270.31	2,946.10	3.43	-0.31	-159.71	0.28	Magn MWD	Phoenix Directional



Wellbore Details

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Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Current KB to Tubing Head (ft)	

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
5/15/2017	3,050	4.41	268.20	3,040.82	3.50	-0.40	-166.93	0.19	Magn MWD	Phoenix Directional
5/15/2017	3,145	4.46	267.27	3,135.54	3.38	-0.69	-174.27	0.09	Magn MWD	Phoenix Directional
5/15/2017	3,240	3.79	271.21	3,230.29	3.43	-0.80	-181.10	0.77	Magn MWD	Phoenix Directional
5/15/2017	3,334	1.85	300.03	3,324.17	4.36	0.02	-185.52	2.49	Magn MWD	Phoenix Directional
5/15/2017	3,429	1.94	292.54	3,419.12	5.81	1.41	-188.34	0.28	Magn MWD	Phoenix Directional
5/15/2017	3,524	2.07	285.28	3,514.06	6.95	2.47	-191.48	0.30	Magn MWD	Phoenix Directional
5/15/2017	3,619	2.11	285.96	3,609.00	7.96	3.41	-194.81	0.05	Magn MWD	Phoenix Directional
5/15/2017	3,713	2.20	283.18	3,702.93	8.93	4.29	-198.23	0.15	Magn MWD	Phoenix Directional
5/15/2017	3,808	2.28	282.58	3,797.86	9.84	5.12	-201.85	0.09	Magn MWD	Phoenix Directional
5/15/2017	3,903	2.32	280.90	3,892.79	10.70	5.90	-205.59	0.08	Magn MWD	Phoenix Directional
5/15/2017	3,998	1.42	275.03	3,987.73	11.24	6.36	-208.65	0.97	Magn MWD	Phoenix Directional
5/15/2017	4,093	0.91	258.13	4,082.71	11.23	6.31	-210.56	0.64	Magn MWD	Phoenix Directional
5/15/2017	4,188	1.06	264.10	4,177.70	11.03	6.07	-212.17	0.19	Magn MWD	Phoenix Directional
5/15/2017	4,283	1.09	260.34	4,272.68	10.83	5.82	-213.93	0.08	Magn MWD	Phoenix Directional
5/15/2017	4,377	1.21	262.94	4,366.66	10.60	5.55	-215.80	0.14	Magn MWD	Phoenix Directional
5/15/2017	4,472	1.24	263.32	4,461.64	10.40	5.31	-217.82	0.03	Magn MWD	Phoenix Directional
6/23/2017	4,566	1.24	263.32	4,535.63	10.25	5.12	-219.41	0.00	Magn MWD	Phoenix Directional
6/23/2017	4,567	0.74	307.75	4,556.62	10.32	5.18	-219.74	4.19	Magn MWD	Phoenix Directional
6/23/2017	4,661	0.74	318.14	4,650.62	11.16	6.00	-220.63	0.14	Magn MWD	Phoenix Directional
6/23/2017	4,756	0.82	305.90	4,745.61	12.04	6.86	-221.59	0.19	Magn MWD	Phoenix Directional
6/23/2017	4,851	0.85	329.28	4,840.60	13.06	7.86	-222.50	0.36	Magn MWD	Phoenix Directional
6/23/2017	4,946	1.04	351.78	4,935.58	14.53	9.32	-222.98	0.43	Magn MWD	Phoenix Directional
6/23/2017	5,041	1.13	355.11	5,030.57	16.33	11.11	-223.18	0.12	Magn MWD	Phoenix Directional
6/23/2017	5,135	1.15	352.09	5,124.55	18.19	12.97	-223.39	0.07	Magn MWD	Phoenix Directional
6/23/2017	5,230	0.64	47.66	5,219.54	19.48	14.27	-223.13	1.00	Magn MWD	Phoenix Directional
6/23/2017	5,325	1.12	116.71	5,314.53	19.39	14.21	-221.91	1.13	Magn MWD	Phoenix Directional
6/23/2017	5,419	1.11	123.92	5,408.51	18.44	13.29	-220.33	0.15	Magn MWD	Phoenix Directional
6/23/2017	5,514	1.13	126.42	5,503.49	17.33	12.22	-218.82	0.06	Magn MWD	Phoenix Directional
6/23/2017	5,609	1.14	133.50	5,598.47	16.09	11.01	-217.38	0.15	Magn MWD	Phoenix Directional
6/23/2017	5,704	1.17	134.41	5,693.45	14.73	9.68	-216.00	0.04	Magn MWD	Phoenix Directional
6/23/2017	5,798	1.36	145.76	5,787.43	13.11	8.09	-214.68	0.33	Magn MWD	Phoenix Directional
6/23/2017	5,893	1.42	147.31	5,882.40	11.16	6.17	-213.41	0.07	Magn MWD	Phoenix Directional
6/23/2017	5,988	1.33	142.84	5,977.38	9.26	4.30	-212.11	0.15	Magn MWD	Phoenix Directional
6/23/2017	6,082	1.40	141.59	6,071.35	7.45	2.53	-210.74	0.08	Magn MWD	Phoenix Directional
6/23/2017	6,177	1.68	134.45	6,166.32	5.53	0.64	-209.03	0.36	Magn MWD	Phoenix Directional
6/23/2017	6,272	1.66	135.14	6,261.28	3.53	-1.31	-207.06	0.03	Magn MWD	Phoenix Directional
6/23/2017	6,367	1.53	128.92	6,356.24	1.72	-3.08	-205.10	0.23	Magn MWD	Phoenix Directional
6/23/2017	6,556	0.86	100.76	6,545.20	-0.21	-4.93	-201.75	0.46	Magn MWD	Phoenix Directional
6/23/2017	6,651	0.48	203.62	6,640.19	-0.72	-5.43	-201.21	1.13	Magn MWD	Phoenix Directional
6/23/2017	6,746	0.71	221.37	6,735.19	-1.51	-6.23	-201.75	0.31	Magn MWD	Phoenix Directional
6/23/2017	6,841	0.54	292.59	6,830.18	-1.76	-6.50	-202.56	0.78	Magn MWD	Phoenix Directional
6/23/2017	6,935	1.35	326.71	6,924.17	-0.65	-5.41	-203.57	1.01	Magn MWD	Phoenix Directional
6/23/2017	7,030	1.77	314.57	7,019.14	1.36	-3.44	-205.23	0.56	Magn MWD	Phoenix Directional
6/23/2017	7,125	1.82	316.92	7,114.09	3.54	-1.31	-207.31	0.09	Magn MWD	Phoenix Directional
6/23/2017	7,220	1.90	318.59	7,209.04	5.87	0.97	-209.38	0.10	Magn MWD	Phoenix Directional
6/23/2017	7,315	1.92	316.20	7,303.99	8.25	3.30	-211.52	0.09	Magn MWD	Phoenix Directional
6/23/2017	7,505	0.91	334.49	7,493.93	11.97	6.96	-214.38	0.58	Magn MWD	Phoenix Directional
6/23/2017	7,601	0.93	332.10	7,589.91	13.36	8.34	-215.07	0.05	Magn MWD	Phoenix Directional
6/23/2017	7,695	0.90	341.63	7,683.90	14.75	9.71	-215.66	0.16	Magn MWD	Phoenix Directional
6/23/2017	7,790	1.09	341.18	7,778.89	16.33	11.28	-216.19	0.20	Magn MWD	Phoenix Directional
6/23/2017	7,886	1.09	349.14	7,874.87	18.10	13.04	-216.65	0.16	Magn MWD	Phoenix Directional
6/23/2017	8,075	1.27	342.01	8,063.83	21.88	16.79	-217.64	0.12	Magn MWD	Phoenix Directional
6/23/2017	8,265	1.31	335.07	8,253.78	25.89	20.77	-219.20	0.08	Magn MWD	Phoenix Directional
6/23/2017	8,362	1.26	330.06	8,350.76	27.84	22.70	-220.20	0.13	Magn MWD	Phoenix Directional
6/23/2017	8,456	1.32	327.43	8,444.73	29.67	24.50	-221.30	0.09	Magn MWD	Phoenix Directional
6/23/2017	8,551	1.31	321.34	8,539.71	31.47	26.27	-222.57	0.15	Magn MWD	Phoenix Directional
6/23/2017	8,646	1.35	320.20	8,634.68	33.21	27.98	-223.96	0.05	Magn MWD	Phoenix Directional



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Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Current KB to Tubing Head (ft)	

Survey Data

Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
6/23/2017	8,740	1.28	315.78	8,728.66	34.85	29.58	-225.40	0.13	Magn MWD	Phoenix Directional
6/23/2017	8,835	1.25	308.42	8,823.64	36.29	30.99	-226.96	0.17	Magn MWD	Phoenix Directional
6/23/2017	8,912	1.24	294.24	8,900.62	37.18	31.85	-228.37	0.40	Magn MWD	Phoenix Directional
6/23/2017	9,011	1.18	284.53	8,999.60	37.93	32.55	-230.34	0.22	Magn MWD	Phoenix Directional
6/23/2017	9,106	3.75	23.32	9,094.53	41.02	35.65	-230.05	4.32	Magn MWD	Phoenix Directional
6/23/2017	9,153	7.19	33.98	9,141.31	44.82	39.50	-227.80	7.60	Magn MWD	Phoenix Directional
6/23/2017	9,200	8.33	30.52	9,187.87	50.11	44.87	-224.43	2.62	Magn MWD	Phoenix Directional
6/23/2017	9,247	10.34	23.87	9,234.25	56.82	51.66	-220.99	4.85	Magn MWD	Phoenix Directional
6/23/2017	9,295	16.65	16.10	9,280.91	67.29	62.22	-217.34	13.65	Magn MWD	Phoenix Directional
6/23/2017	9,342	25.88	14.90	9,324.66	83.59	78.64	-212.82	19.66	Magn MWD	Phoenix Directional
6/23/2017	9,389	34.88	12.21	9,365.17	106.55	101.73	-207.33	19.36	Magn MWD	Phoenix Directional
6/23/2017	9,436	41.85	10.17	9,402.00	135.02	130.34	-201.71	15.07	Magn MWD	Phoenix Directional
6/23/2017	9,483	48.10	7.86	9,435.23	167.68	163.13	-196.55	13.74	Magn MWD	Phoenix Directional
6/23/2017	9,530	52.58	2.60	9,465.23	203.60	199.14	-193.31	12.84	Magn MWD	Phoenix Directional
6/23/2017	9,578	57.54	0.84	9,492.71	242.88	238.45	-192.15	10.76	Magn MWD	Phoenix Directional
6/23/2017	9,625	62.53	359.39	9,516.18	283.57	279.16	-192.08	10.95	Magn MWD	Phoenix Directional
6/23/2017	9,672	68.54	358.90	9,535.64	326.33	321.91	-192.72	12.82	Magn MWD	Phoenix Directional
6/23/2017	9,719	75.45	357.69	9,550.16	371.00	366.56	-194.06	14.90	Magn MWD	Phoenix Directional
6/23/2017	9,766	78.74	357.10	9,560.65	416.79	412.32	-196.14	7.11	Magn MWD	Phoenix Directional
6/23/2017	9,809	81.17	356.77	9,568.15	459.11	454.60	-198.40	5.70	Magn MWD	Phoenix Directional
6/23/2017	9,903	88.85	358.88	9,576.32	552.67	548.10	-201.95	8.47	Magn MWD	Phoenix Directional
6/23/2017	9,998	92.24	358.75	9,575.42	647.65	643.06	-203.91	3.57	Magn MWD	Phoenix Directional
6/23/2017	10,092	93.98	358.85	9,570.32	741.51	736.90	-205.88	1.85	Magn MWD	Phoenix Directional
6/23/2017	10,186	93.11	359.29	9,564.51	835.33	830.70	-207.40	1.04	Magn MWD	Phoenix Directional
6/23/2017	10,280	92.07	357.13	9,560.26	929.22	924.56	-210.33	2.55	Magn MWD	Phoenix Directional
6/23/2017	10,375	90.39	356.30	9,558.22	1,024.14	1,019.37	-215.77	1.97	Magn MWD	Phoenix Directional
6/23/2017	10,469	91.26	358.26	9,556.87	1,118.10	1,113.25	-220.23	2.28	Magn MWD	Phoenix Directional
6/23/2017	10,564	89.86	358.02	9,555.94	1,213.09	1,208.19	-223.32	1.50	Magn MWD	Phoenix Directional
6/23/2017	10,658	86.75	356.13	9,558.72	1,306.99	1,302.02	-228.11	3.87	Magn MWD	Phoenix Directional
6/23/2017	10,753	86.01	356.73	9,564.72	1,401.73	1,396.64	-234.01	1.00	Magn MWD	Phoenix Directional
6/23/2017	10,846	92.33	358.79	9,566.06	1,494.66	1,489.51	-237.65	7.15	Magn MWD	Phoenix Directional
6/23/2017	10,938	87.92	356.90	9,565.86	1,586.62	1,581.42	-241.10	5.21	Magn MWD	Phoenix Directional
6/23/2017	11,031	87.11	356.64	9,569.90	1,679.48	1,674.18	-246.34	0.91	Magn MWD	Phoenix Directional
6/23/2017	11,123	89.52	357.91	9,572.60	1,771.41	1,766.03	-250.71	2.96	Magn MWD	Phoenix Directional
6/23/2017	11,216	90.00	0.48	9,572.99	1,864.39	1,859.01	-252.02	2.81	Magn MWD	Phoenix Directional
6/23/2017	11,311	89.92	0.21	9,573.06	1,959.35	1,954.01	-251.44	0.30	Magn MWD	Phoenix Directional
6/23/2017	11,404	94.29	1.70	9,569.64	2,052.19	2,046.91	-249.90	4.96	Magn MWD	Phoenix Directional
6/23/2017	11,496	94.94	1.73	9,562.24	2,143.76	2,138.57	-247.15	0.71	Magn MWD	Phoenix Directional
6/23/2017	11,589	95.02	1.85	9,554.17	2,236.27	2,231.17	-244.26	0.15	Magn MWD	Phoenix Directional
6/23/2017	11,681	91.85	3.06	9,548.65	2,327.89	2,322.91	-240.32	3.69	Magn MWD	Phoenix Directional
6/23/2017	11,776	90.84	0.44	9,546.42	2,422.72	2,417.83	-237.42	2.95	Magn MWD	Phoenix Directional
6/23/2017	11,870	92.86	0.11	9,543.39	2,516.63	2,511.77	-236.97	2.18	Magn MWD	Phoenix Directional
6/23/2017	11,965	92.77	0.12	9,538.72	2,611.48	2,606.66	-236.78	0.10	Magn MWD	Phoenix Directional
6/23/2017	12,059	93.05	359.74	9,533.95	2,705.34	2,700.54	-236.90	0.50	Magn MWD	Phoenix Directional
6/23/2017	12,154	93.33	359.53	9,528.67	2,800.18	2,795.39	-237.50	0.37	Magn MWD	Phoenix Directional
6/23/2017	12,248	89.41	0.14	9,526.42	2,894.11	2,889.34	-237.77	4.22	Magn MWD	Phoenix Directional
6/23/2017	12,342	90.25	0.47	9,526.70	2,988.07	2,983.34	-237.27	0.96	Magn MWD	Phoenix Directional
6/23/2017	12,437	91.18	1.06	9,525.51	3,083.00	3,078.32	-236.00	1.16	Magn MWD	Phoenix Directional
6/23/2017	12,531	90.92	0.25	9,523.79	3,176.92	3,172.30	-234.93	0.90	Magn MWD	Phoenix Directional
6/23/2017	12,625	91.48	0.20	9,521.82	3,270.87	3,266.28	-234.56	0.60	Magn MWD	Phoenix Directional
6/23/2017	12,719	91.54	359.90	9,519.34	3,364.81	3,360.24	-234.48	0.33	Magn MWD	Phoenix Directional
6/23/2017	12,813	91.63	359.71	9,516.74	3,458.75	3,454.21	-234.80	0.22	Magn MWD	Phoenix Directional
6/23/2017	12,907	91.34	359.03	9,514.31	3,552.71	3,548.17	-235.83	0.79	Magn MWD	Phoenix Directional
6/23/2017	13,002	92.10	358.99	9,511.46	3,647.67	3,643.11	-237.47	0.80	Magn MWD	Phoenix Directional
6/23/2017	13,096	88.52	357.99	9,510.95	3,741.65	3,737.06	-239.95	3.95	Magn MWD	Phoenix Directional
6/23/2017	13,191	88.43	357.59	9,513.48	3,836.61	3,831.96	-243.61	0.43	Magn MWD	Phoenix Directional
6/23/2017	13,285	88.54	357.41	9,515.96	3,930.55	3,925.83	-247.71	0.22	Magn MWD	Phoenix Directional



Wellbore Details

Well Name HH SO 8 P2 5H	Lease HH SO 8 P2	Field Name Purple Sage	Business Unit Mid-Continent	
Ground Elevation (ft) 3,245.00	Original RKB Elevation (ft) 3,273.00	Current RKB Elevation 3,273.00, 5/15/2017	Mud Line Elevation (ft)	Water Depth (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Current KB to Tubing Head (ft)	

Survey Data

Date	MD (RKB)	Incl (°)	Azm (°)	TVD (RKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
6/23/2017	13,380	90.48	358.21	9,516.77	4,025.53	4,020.76	-251.34	2.21	Magn MWD	Phoenix Directional
6/23/2017	13,475	91.09	358.69	9,515.47	4,120.52	4,115.71	-253.91	0.82	Magn MWD	Phoenix Directional
6/23/2017	13,569	91.23	358.45	9,513.57	4,214.50	4,209.66	-256.25	0.30	Magn MWD	Phoenix Directional
6/23/2017	13,664	89.55	356.72	9,512.92	4,309.48	4,304.57	-260.26	2.54	Magn MWD	Phoenix Directional
6/23/2017	13,758	91.96	358.35	9,511.68	4,403.44	4,398.46	-264.30	3.10	Magn MWD	Phoenix Directional
6/23/2017	13,852	92.44	358.14	9,508.08	4,497.37	4,492.35	-267.18	0.56	Magn MWD	Phoenix Directional
6/23/2017	13,947	92.18	357.80	9,504.25	4,592.29	4,587.21	-270.54	0.45	Magn MWD	Phoenix Directional
6/23/2017	14,041	90.08	358.58	9,502.39	4,686.26	4,681.14	-273.51	2.38	Magn MWD	Phoenix Directional
6/23/2017	14,135	91.04	359.55	9,501.47	4,780.25	4,775.12	-275.04	1.45	Magn MWD	Phoenix Directional
6/23/2017	14,228	89.80	2.55	9,500.79	4,873.15	4,868.09	-273.34	3.49	Magn MWD	Phoenix Directional
6/23/2017	14,322	88.15	3.11	9,502.47	4,966.89	4,961.96	-268.70	1.85	Magn MWD	Phoenix Directional
6/23/2017	14,416	87.62	2.61	9,505.94	5,060.57	5,055.78	-264.01	0.77	Magn MWD	Phoenix Directional
6/23/2017	14,511	86.86	1.25	9,510.52	5,155.30	5,150.61	-260.81	1.64	Magn MWD	Phoenix Directional
6/23/2017	14,605	86.67	0.51	9,515.82	5,249.08	5,244.45	-259.37	0.81	Magn MWD	Phoenix Directional
6/23/2017	14,700	86.67	0.29	9,521.34	5,343.88	5,339.29	-258.71	0.23	Magn MWD	Phoenix Directional
12/19/2017	14,795	86.84	359.83	9,526.72	5,438.70	5,434.13	-258.61	0.52	Magn MWD	Phoenix Directional
12/19/2017	14,889	89.30	0.10	9,529.88	5,532.61	5,528.07	-258.67	2.63	Magn MWD	Phoenix Directional
12/19/2017	14,983	91.18	1.26	9,529.49	5,626.55	5,622.06	-257.55	2.35	Magn MWD	Phoenix Directional
12/19/2017	15,078	90.73	1.14	9,527.91	5,721.44	5,717.03	-255.56	0.49	Magn MWD	Phoenix Directional
12/19/2017	15,172	90.14	0.73	9,527.19	5,815.36	5,811.01	-254.03	0.76	Magn MWD	Phoenix Directional
12/19/2017	15,266	88.07	359.93	9,528.66	5,909.30	5,904.99	-253.49	2.36	Magn MWD	Phoenix Directional
12/19/2017	15,360	87.76	0.07	9,532.08	6,003.22	5,998.93	-253.49	0.36	Magn MWD	Phoenix Directional
12/19/2017	15,455	88.35	359.88	9,535.31	6,098.14	6,093.87	-253.53	0.65	Magn MWD	Phoenix Directional
12/19/2017	15,549	88.21	359.82	9,538.13	6,192.07	6,187.83	-253.77	0.16	Magn MWD	Phoenix Directional
12/19/2017	15,644	88.99	0.13	9,540.45	6,287.02	6,282.80	-253.82	0.88	Magn MWD	Phoenix Directional
12/19/2017	15,738	88.85	0.03	9,542.22	6,380.97	6,376.78	-253.69	0.18	Magn MWD	Phoenix Directional
12/19/2017	15,833	90.39	0.55	9,542.85	6,475.93	6,471.78	-253.20	1.71	Magn MWD	Phoenix Directional
12/20/2017	15,927	90.25	359.53	9,542.32	6,569.90	6,565.78	-253.14	1.10	Magn MWD	Phoenix Directional
12/20/2017	16,021	90.20	0.44	9,541.96	6,663.87	6,659.77	-253.16	0.97	Magn MWD	Phoenix Directional
12/20/2017	16,116	89.13	359.91	9,542.51	6,758.84	6,754.77	-252.87	1.26	Magn MWD	Phoenix Directional
12/20/2017	16,210	88.99	359.63	9,544.05	6,852.81	6,848.76	-253.25	0.33	Magn MWD	Phoenix Directional
12/20/2017	16,305	89.22	359.12	9,545.54	6,947.79	6,943.74	-254.29	0.59	Magn MWD	Phoenix Directional
12/20/2017	16,399	90.62	359.56	9,545.67	7,041.78	7,037.73	-255.37	1.56	Magn MWD	Phoenix Directional
12/20/2017	16,494	90.95	359.87	9,544.37	7,136.75	7,132.72	-255.84	0.48	Magn MWD	Phoenix Directional
12/20/2017	16,588	88.49	359.51	9,544.83	7,230.73	7,226.71	-256.35	2.64	Magn MWD	Phoenix Directional
12/20/2017	16,683	91.76	0.94	9,544.62	7,325.68	7,321.69	-255.98	3.76	Magn MWD	Phoenix Directional
12/21/2017	16,777	89.72	0.40	9,543.40	7,419.61	7,415.67	-254.88	2.24	Magn MWD	Phoenix Directional
12/21/2017	16,872	88.24	359.61	9,545.10	7,514.56	7,510.66	-254.87	1.77	Magn MWD	Phoenix Directional
12/21/2017	16,967	89.05	0.01	9,547.34	7,609.51	7,605.63	-255.18	0.95	Magn MWD	Phoenix Directional
12/21/2017	17,062	87.14	359.69	9,550.50	7,704.44	7,700.57	-255.43	2.04	Magn MWD	Phoenix Directional
12/21/2017	17,156	90.00	0.89	9,552.85	7,798.36	7,794.53	-254.96	3.30	Magn MWD	Phoenix Directional
12/21/2017	17,251	88.10	0.25	9,554.42	7,893.29	7,889.51	-254.01	2.11	Magn MWD	Phoenix Directional
12/22/2017	17,346	86.08	359.81	9,559.24	7,988.13	7,984.38	-253.96	2.18	Magn MWD	Phoenix Directional
12/22/2017	17,441	85.71	359.50	9,566.04	8,082.87	8,079.13	-254.53	0.51	Magn MWD	Phoenix Directional
12/22/2017	17,535	87.84	359.62	9,571.33	8,176.71	8,172.97	-255.25	2.27	Magn MWD	Phoenix Directional
12/22/2017	17,630	89.02	359.22	9,573.93	8,271.66	8,267.93	-256.21	1.31	Magn MWD	Phoenix Directional
12/22/2017	17,725	86.58	357.97	9,577.58	8,366.58	8,362.82	-258.54	2.89	Magn MWD	Phoenix Directional
12/22/2017	17,820	88.68	358.05	9,581.51	8,461.49	8,457.68	-261.84	2.21	Magn MWD	Phoenix Directional
12/23/2017	17,914	89.36	357.70	9,583.12	8,555.47	8,551.60	-265.32	0.81	Magn MWD	Phoenix Directional
12/23/2017	18,009	88.74	357.70	9,584.69	8,650.44	8,646.51	-269.13	0.65	Magn MWD	Phoenix Directional
12/23/2017	18,104	90.84	359.48	9,585.04	8,745.43	8,741.47	-271.47	2.90	Magn MWD	Phoenix Directional
12/23/2017	18,198	91.93	359.96	9,582.77	8,839.39	8,835.44	-271.93	1.27	Magn MWD	Phoenix Directional
12/23/2017	18,293	91.74	359.78	9,579.73	8,934.32	8,930.39	-272.15	0.28	Magn MWD	Phoenix Directional
12/23/2017	18,388	90.90	359.58	9,577.54	9,029.27	9,025.37	-272.68	0.91	Magn MWD	Phoenix Directional
12/24/2017	18,482	89.58	0.93	9,577.14	9,123.23	9,119.36	-272.26	2.01	Magn MWD	Phoenix Directional
12/24/2017	18,577	89.89	1.51	9,577.58	9,218.14	9,214.34	-270.24	0.69	Magn MWD	Phoenix Directional
12/24/2017	18,671	89.30	1.52	9,578.25	9,312.02	9,308.30	-267.75	0.63	Magn MWD	Phoenix Directional



Wellbore Details

Well Name HH SO 8 P2 5H	Lease HH SO 8 P2	Field Name Purple Sage	Business Unit Mid-Continent	
Ground Elevation (ft) 3,245.00	Original RKB Elevation (ft) 3,273.00	Current RKB Elevation 3,273.00, 5/15/2017	Mud Line Elevation (ft)	Water Depth (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Current KB to Tubing Head (ft)	

Survey Data										
Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
12/24/2017	18,766	87.23	0.31	9,581.12	9,406.89	9,403.24	-266.23	2.52	Magn MWD	Phoenix Directional
12/24/2017	18,861	89.72	0.93	9,583.65	9,501.80	9,498.19	-265.21	2.70	Magn MWD	Phoenix Directional
12/24/2017	18,955	90.36	0.76	9,583.59	9,595.73	9,592.18	-263.82	0.70	Magn MWD	Phoenix Directional
12/25/2017	19,050	86.61	359.29	9,586.10	9,690.65	9,687.13	-263.78	4.24	Magn MWD	Phoenix Directional
12/26/2017	19,161	87.28	359.37	9,592.01	9,801.48	9,797.96	-265.07	0.61	Magn MWD	Phoenix Directional
12/26/2017	19,255	86.86	359.13	9,596.82	9,895.35	9,891.83	-266.30	0.51	Magn MWD	Phoenix Directional
12/26/2017	19,350	86.72	358.79	9,602.14	9,990.20	9,986.67	-268.02	0.39	Magn MWD	Phoenix Directional
12/27/2017	19,445	89.05	359.94	9,605.64	10,085.12	10,081.59	-269.07	2.73	Magn MWD	Phoenix Directional
12/27/2017	19,540	89.05	359.94	9,607.22	10,180.09	10,176.57	-269.17	0.00	Magn MWD	Phoenix Directional
12/27/2017	19,635	90.78	359.03	9,607.36	10,275.07	10,271.57	-270.03	2.06	Magn MWD	Phoenix Directional
12/27/2017	19,729	88.82	357.58	9,607.69	10,369.06	10,365.52	-272.81	2.59	Magn MWD	Phoenix Directional
12/27/2017	19,824	89.72	357.93	9,608.90	10,464.04	10,460.44	-276.53	1.02	Magn MWD	Phoenix Directional
12/27/2017	19,919	89.97	358.69	9,609.16	10,559.04	10,555.39	-279.33	0.84	Magn MWD	Phoenix Directional
12/27/2017	19,966	90.73	359.31	9,608.87	10,606.04	10,602.38	-280.15	2.09	Magn MWD	Phoenix Directional
12/27/2017	20,020	90.73	359.31	9,608.18	10,660.03	10,656.38	-280.80	0.00	Magn MWD	Phoenix Directional

Zones						
Zone Name	Top (ft)	Btm (ft)	Zone Comp Method	Completion ChevNo	Completion UWI	Completion License No.
Wolfcamp C	10,023.0	19,858.0	Proppant Frac	PJ8435-00-01	30015439350001	