



APR 10 2019

Directional Survey Data

DISTRICT II-ARTESIA O.C.D.

Well Name HH CE 35 2 FED 006 5H	Lease HH CE 35 2 Fed 006	Field Name Purple Sage	Business Unit Mid-Continent	Latitude (°) 32° 5' 7.62" N	Longitude (°) 104° 9' 11.776" W	Surface UWI 3001544345	Surface ChevNo PN0915
Wellbore Name Original Hole	Wellbore UWI 300154434500	Wellbore ChevNo PN0915-00	Directional Type Horizontal	Min Kick Off Depth (ftOTH) 8,872.0	Min Kick Off Depth (TVD) (ftOTH) 8,862.9	Total Depth of Wellbore (ftOTH) 16,926.00	Date TD Reached (wellbore) 6/3/2018

Bottom Hole Location							
Northing (Y) (ft)	Easting (X) (ft)		UTM Grid Zone	Latitude (°)	Longitude (°)		Closure Direction (°) 179.60

Directional Surveys			
Description MWD	Planned? N	Definitive? N	Note Correction 7.2

Survey Data											
Survey Company	Date	MD (ftOTH)	TVD (ftOTH)	Incl (°)	Azm (°)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)
	1/16/2018										
Phoenix Directional	7/26/2017	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phoenix Directional	7/26/2017	355	354.99	0.78	120.95	1.26	-1.24	2.07	0.22	0.22	34.07
Phoenix Directional	7/26/2017	438	437.98	1.06	107.74	1.79	-1.77	3.29	0.42	0.34	-15.92
Phoenix Directional	7/26/2017	530	529.96	1.03	111.80	2.37	-2.33	4.87	0.09	-0.03	4.41
Phoenix Directional	7/26/2017	623	622.95	1.17	114.11	3.08	-3.03	6.51	0.16	0.15	2.48
Phoenix Directional	7/26/2017	715	714.92	1.28	109.19	3.81	-3.75	8.34	0.17	0.12	-5.35
Phoenix Directional	7/26/2017	807	806.90	1.38	107.55	4.50	-4.43	10.36	0.12	0.11	-1.78
Phoenix Directional	7/26/2017	900	899.87	1.40	109.30	5.23	-5.14	12.50	0.05	0.02	1.88
Phoenix Directional	7/26/2017	994	993.85	1.16	118.39	6.07	-5.97	14.42	0.33	-0.26	9.67
Phoenix Directional	7/26/2017	1,088	1,087.83	0.93	105.35	6.74	-6.62	16.00	0.35	-0.24	-13.87
Phoenix Directional	7/26/2017	1,183	1,182.82	0.90	96.26	7.03	-6.91	17.48	0.16	-0.03	-9.57
Phoenix Directional	7/26/2017	1,278	1,277.81	0.67	106.95	7.28	-7.15	18.76	0.29	-0.24	11.25
Phoenix Directional	7/26/2017	1,373	1,372.81	0.65	100.88	7.56	-7.42	19.82	0.08	-0.02	-6.39
Phoenix Directional	7/26/2017	1,467	1,466.80	0.67	89.30	7.66	-7.51	20.89	0.14	0.02	-12.32
Phoenix Directional	7/26/2017	1,562	1,561.79	0.72	74.09	7.49	-7.34	22.02	0.20	0.05	-16.01
Phoenix Directional	7/26/2017	1,658	1,657.78	1.39	82.42	7.19	-7.02	23.75	0.71	0.70	8.68
Phoenix Directional	7/26/2017	1,752	1,751.73	2.24	87.86	6.99	-6.80	26.72	0.92	0.90	5.79
Phoenix Directional	7/26/2017	1,846	1,845.66	2.25	86.34	6.83	-6.62	30.40	0.06	0.01	-1.62
Phoenix Directional	7/26/2017	1,941	1,940.56	2.78	92.32	6.83	-6.59	34.56	0.62	0.56	6.29
Phoenix Directional	7/26/2017	2,035	2,034.43	3.32	78.75	6.43	-6.15	39.51	0.96	0.57	-14.44
Phoenix Directional	7/26/2017	2,129	2,128.27	3.57	49.91	4.05	-3.74	44.41	1.84	0.27	-30.68
Phoenix Directional	7/26/2017	2,224	2,223.09	3.61	14.56	-0.73	1.06	47.43	2.29	0.04	-37.21
Phoenix Directional	7/26/2017	2,319	2,317.89	4.03	349.11	-6.91	7.24	47.55	1.82	0.44	-26.79
Phoenix Directional	7/26/2017	2,413	2,411.67	3.90	347.82	-13.28	13.61	46.25	0.17	-0.14	-1.37
Phoenix Directional	7/26/2017	2,507	2,505.45	3.93	346.07	-19.54	19.86	44.80	0.13	0.03	-1.86
Phoenix Directional	7/26/2017	2,602	2,600.23	3.76	346.66	-25.75	26.05	43.30	0.18	-0.18	0.62
Phoenix Directional	7/26/2017	2,696	2,694.03	3.78	344.98	-31.75	32.04	41.79	0.12	0.02	-1.79
Phoenix Directional	7/26/2017	2,791	2,788.81	4.04	359.99	-38.12	38.41	40.97	1.11	0.27	15.80
Phoenix Directional	7/26/2017	2,885	2,882.56	4.38	7.81	-44.99	45.28	41.46	0.71	0.36	8.32
Phoenix Directional	7/26/2017	2,979	2,976.30	4.16	4.51	-51.94	52.23	42.22	0.35	-0.23	-3.51
Phoenix Directional	7/26/2017	3,073	3,070.05	4.17	5.12	-58.74	59.04	42.79	0.05	0.01	0.65
Phoenix Directional	7/26/2017	3,168	3,164.80	4.06	2.44	-65.53	65.84	43.24	0.23	-0.12	-2.82
Phoenix Directional	7/26/2017	3,261	3,257.58	3.96	0.98	-72.03	72.34	43.44	0.15	-0.11	-1.57
Phoenix Directional	7/26/2017	3,356	3,352.34	4.12	359.95	-78.72	79.03	43.49	0.18	0.17	-1.08



Directional Survey Data

Survey Data											
Survey Company	Date	MD (ftOTH)	TVD (ftOTH)	Incl (°)	Azm (°)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)
Phoenix Directional	7/26/2017	3,451	3,447.09	4.13	357.92	-85.56	85.86	43.36	0.15	0.01	-2.14
Phoenix Directional	7/26/2017	3,545	3,540.85	4.16	358.61	-92.35	92.65	43.16	0.06	0.03	0.73
Phoenix Directional	7/26/2017	3,640	3,635.59	4.22	359.29	-99.29	99.59	43.03	0.08	0.06	0.72
Phoenix Directional	7/26/2017	3,735	3,730.34	4.12	358.45	-106.20	106.50	42.89	0.12	-0.11	-0.88
Phoenix Directional	7/26/2017	3,830	3,825.10	4.06	355.85	-112.96	113.26	42.56	0.21	-0.06	-2.74
Phoenix Directional	7/26/2017	3,925	3,919.87	3.86	354.43	-119.50	119.80	42.01	0.23	-0.21	-1.49
Phoenix Directional	7/26/2017	4,020	4,014.66	3.83	358.62	-125.86	126.16	41.62	0.30	-0.03	4.41
Phoenix Directional	7/26/2017	4,115	4,109.44	3.91	356.37	-132.27	132.56	41.34	0.18	0.08	-2.37
Phoenix Directional	7/26/2017	4,210	4,204.22	3.87	356.98	-138.70	138.99	40.96	0.06	-0.04	0.64
Phoenix Directional	7/26/2017	4,305	4,299.01	3.87	3.96	-145.10	145.39	41.02	0.50	0.00	7.35
Phoenix Directional	7/26/2017	4,400	4,393.78	4.03	8.89	-151.59	151.89	41.75	0.40	0.17	5.19
Phoenix Directional	7/26/2017	4,495	4,488.56	3.82	4.42	-158.04	158.34	42.51	0.39	-0.22	-4.71
Phoenix Directional	7/26/2017	4,589	4,582.36	3.67	3.65	-164.16	164.47	42.95	0.17	-0.16	-0.82
Phoenix Directional	7/26/2017	4,684	4,677.18	3.46	1.26	-170.06	170.37	43.20	0.27	-0.22	-2.52
Phoenix Directional	7/26/2017	4,779	4,772.01	3.33	356.65	-175.68	175.99	43.10	0.32	-0.14	-4.85
Phoenix Directional	7/26/2017	4,874	4,866.85	3.30	355.15	-181.16	181.47	42.71	0.10	-0.03	-1.58
Phoenix Directional	7/26/2017	4,969	4,961.71	2.87	13.20	-186.20	186.51	43.02	1.11	-0.45	19.00
Phoenix Directional	7/26/2017	5,064	5,056.60	2.80	14.09	-190.76	191.07	44.13	0.09	-0.07	0.94
Phoenix Directional	7/26/2017	5,159	5,151.48	2.90	8.34	-195.38	195.70	45.04	0.32	0.11	-6.05
Phoenix Directional	7/26/2017	5,253	5,245.37	2.75	2.25	-199.98	200.31	45.48	0.36	-0.16	-6.48
Phoenix Directional	7/26/2017	5,348	5,340.26	2.80	1.38	-204.58	204.90	45.62	0.07	0.05	-0.92
Phoenix Directional	7/26/2017	5,443	5,435.15	2.64	4.41	-209.08	209.41	45.85	0.23	-0.17	3.19
Phoenix Directional	7/26/2017	5,537	5,529.05	2.66	2.80	-213.42	213.74	46.12	0.08	0.02	-1.71
Phoenix Directional	7/26/2017	5,632	5,623.95	2.40	1.03	-217.60	217.93	46.26	0.29	-0.27	-1.86
Phoenix Directional	7/26/2017	5,726	5,717.88	2.11	1.38	-221.30	221.63	46.34	0.31	-0.31	0.37
Phoenix Directional	7/26/2017	5,821	5,812.83	1.73	342.32	-224.42	224.75	45.95	0.78	-0.40	-20.06
Phoenix Directional	7/26/2017	5,916	5,907.79	1.62	337.84	-227.04	227.36	45.01	0.18	-0.12	-4.72
Phoenix Directional	7/26/2017	6,011	6,002.76	1.47	1.85	-229.50	229.82	44.54	0.69	-0.16	25.27
Phoenix Directional	7/26/2017	6,106	6,097.72	1.55	15.02	-231.96	232.28	44.91	0.37	0.08	13.86
Phoenix Directional	7/26/2017	6,202	6,193.69	1.33	12.16	-234.30	234.62	45.48	0.24	-0.23	-2.98
Phoenix Directional	7/26/2017	6,296	6,287.67	1.03	13.01	-236.18	236.51	45.90	0.32	-0.32	0.90
Phoenix Directional	7/26/2017	6,391	6,382.66	0.75	343.76	-237.61	237.94	45.92	0.55	-0.29	-30.79
Phoenix Directional	7/26/2017	6,487	6,478.66	0.26	11.01	-238.43	238.75	45.79	0.55	-0.51	28.39
Phoenix Directional	7/26/2017	6,581	6,572.65	0.90	194.82	-237.93	238.25	45.64	1.23	0.68	-187.44
Phoenix Directional	7/26/2017	6,676	6,667.63	1.59	181.09	-235.89	236.21	45.42	0.79	0.73	-14.45
Phoenix Directional	7/26/2017	6,771	6,762.58	2.01	173.40	-232.91	233.24	45.59	0.51	0.44	-8.09
Phoenix Directional	7/26/2017	6,865	6,856.53	1.79	174.64	-229.81	230.14	45.92	0.24	-0.23	1.32
Phoenix Directional	7/26/2017	6,960	6,951.50	1.21	164.13	-227.37	227.70	46.33	0.67	-0.61	-11.06
Phoenix Directional	7/26/2017	7,054	7,045.48	1.27	163.59	-225.41	225.74	46.89	0.07	0.06	-0.57
Phoenix Directional	7/26/2017	7,148	7,139.44	1.79	143.10	-223.23	223.57	48.07	0.79	0.55	-21.80
Phoenix Directional	7/26/2017	7,243	7,234.40	1.73	133.35	-221.04	221.40	50.00	0.32	-0.06	-10.26
Phoenix Directional	7/26/2017	7,339	7,330.38	0.84	124.39	-219.64	220.01	51.64	0.95	-0.93	-9.33
Phoenix Directional	7/26/2017	7,434	7,425.37	0.33	35.52	-219.46	219.84	52.37	0.94	-0.54	-93.55



Directional Survey Data

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Phoenix Directional	7/26/2017	7,528	7,519.37	0.33	324.55	-219.91	220.28	52.37	0.41	0.00	-75.50	
Phoenix Directional	7/26/2017	7,623	7,614.37	0.45	292.81	-220.28	220.64	51.87	0.26	0.13	-33.41	
Phoenix Directional	7/26/2017	7,717	7,708.36	0.50	289.56	-220.56	220.92	51.14	0.06	0.05	-3.46	
Phoenix Directional	7/26/2017	7,812	7,803.36	0.35	262.95	-220.67	221.03	50.46	0.26	-0.16	-28.01	
Phoenix Directional	7/26/2017	7,907	7,898.36	0.34	237.51	-220.49	220.84	49.94	0.16	-0.01	-26.78	
Phoenix Directional	7/26/2017	8,001	7,992.36	0.39	230.53	-220.14	220.49	49.46	0.07	0.05	-7.43	
Phoenix Directional	7/26/2017	8,096	8,087.36	0.42	218.01	-219.66	220.01	48.99	0.10	0.03	-13.18	
Phoenix Directional	7/26/2017	8,192	8,183.35	0.36	165.86	-219.09	219.44	48.85	0.36	-0.06	-54.32	
Phoenix Directional	7/26/2017	8,287	8,278.35	0.58	149.00	-218.39	218.74	49.17	0.27	0.23	-17.75	
Phoenix Directional	7/26/2017	8,381	8,372.34	0.77	139.73	-217.49	217.85	49.82	0.23	0.20	-9.86	
Phoenix Directional	7/26/2017	8,476	8,467.33	0.97	155.36	-216.27	216.63	50.57	0.32	0.21	16.45	
Phoenix Directional	7/26/2017	8,531	8,522.33	0.92	155.70	-215.44	215.80	50.95	0.09	-0.09	0.62	
Phoenix Directional	7/26/2017	8,637	8,628.31	0.95	162.57	-213.82	214.19	51.56	0.11	0.03	6.48	
Phoenix Directional	7/26/2017	8,731	8,722.30	1.03	171.44	-212.24	212.61	51.92	0.18	0.09	9.44	
Phoenix Directional	7/26/2017	8,778	8,769.28	2.46	168.98	-210.83	211.20	52.17	3.05	3.04	-5.23	
Phoenix Directional	7/26/2017	8,826	8,817.18	4.59	180.47	-207.90	208.27	52.36	4.65	4.44	23.94	
Phoenix Directional	7/26/2017	8,873	8,863.92	7.42	179.28	-202.98	203.35	52.38	6.03	6.02	-2.53	
Phoenix Directional	7/26/2017	8,921	8,911.30	10.95	178.51	-195.32	195.70	52.54	7.36	7.35	-1.60	
Phoenix Directional	7/26/2017	8,968	8,957.11	14.75	176.02	-184.89	185.26	53.07	8.17	8.09	-5.30	
Phoenix Directional	7/26/2017	9,016	9,003.03	19.03	179.85	-170.95	171.33	53.51	9.21	8.92	7.98	
Phoenix Directional	7/26/2017	9,063	9,047.24	20.63	182.84	-155.02	155.40	53.12	4.03	3.40	6.36	
Phoenix Directional	7/26/2017	9,111	9,091.66	23.91	182.45	-136.86	137.23	52.29	6.84	6.83	-0.81	
Phoenix Directional	7/26/2017	9,158	9,133.66	29.34	181.64	-115.83	116.19	51.55	11.58	11.55	-1.72	
Phoenix Directional	7/26/2017	9,204	9,172.36	35.99	181.68	-91.03	91.39	50.83	14.46	14.46	0.09	
Phoenix Directional	7/26/2017	9,251	9,209.01	41.47	181.64	-61.65	62.00	49.98	11.66	11.66	-0.09	
Phoenix Directional	7/26/2017	9,299	9,243.72	45.89	180.94	-28.53	28.87	49.24	9.26	9.21	-1.46	
Phoenix Directional	7/26/2017	9,346	9,274.78	51.34	180.19	6.72	-6.38	48.90	11.66	11.60	-1.60	
Phoenix Directional	7/26/2017	9,393	9,302.42	56.59	180.85	44.71	-44.37	48.55	11.23	11.17	1.40	
Phoenix Directional	7/26/2017	9,440	9,326.78	60.96	180.45	84.88	-84.55	48.10	9.33	9.30	-0.85	
Phoenix Directional	7/26/2017	9,488	9,347.96	66.65	181.60	127.92	-127.59	47.32	12.05	11.85	2.40	
Phoenix Directional	7/26/2017	9,535	9,364.62	71.82	182.26	171.82	-171.50	45.83	11.08	11.00	1.40	
Phoenix Directional	7/26/2017	9,583	9,377.41	77.25	180.58	218.04	-217.73	44.70	11.80	11.31	-3.50	
Phoenix Directional	7/26/2017	9,630	9,385.78	82.24	180.93	264.26	-263.96	44.09	10.64	10.62	0.74	
Phoenix Directional	7/26/2017	9,677	9,390.03	87.36	181.19	311.04	-310.74	43.22	10.91	10.89	0.55	
Phoenix Directional	7/26/2017	9,724	9,390.44	91.66	182.73	357.98	-357.70	41.61	9.72	9.15	3.28	
Phoenix Directional	7/26/2017	9,772	9,388.74	92.38	181.59	405.90	-405.64	39.81	2.81	1.50	-2.37	
Phoenix Directional	7/26/2017	9,867	9,383.43	94.03	180.54	500.72	-500.47	38.04	2.06	1.74	-1.11	
Phoenix Directional	7/26/2017	9,962	9,377.18	93.52	178.12	595.51	-595.25	39.15	2.60	-0.54	-2.55	
Phoenix Directional	7/26/2017	10,056	9,371.50	93.41	177.64	689.29	-689.01	42.62	0.52	-0.12	-0.51	
Phoenix Directional	7/26/2017	10,151	9,365.93	93.31	176.85	784.05	-783.74	47.18	0.84	-0.11	-0.83	
Phoenix Directional	7/26/2017	10,246	9,361.39	92.16	177.82	878.86	-878.52	51.59	1.58	-1.21	1.02	
Phoenix Directional	7/26/2017	10,341	9,357.99	91.95	177.29	973.74	-973.37	55.64	0.60	-0.22	-0.56	
Phoenix Directional	7/26/2017	10,436	9,352.61	94.54	178.32	1,068.53	-1,068.14	59.28	2.93	2.73	1.08	



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Phoenix Directional	7/26/2017	10,532	9,346.36	92.93	179.08	1,164.31	-1,163.91	61.45	1.85	-1.68	0.79	
Phoenix Directional	7/26/2017	10,626	9,341.46	93.04	177.90	1,258.16	-1,257.75	63.92	1.26	0.12	-1.26	
Phoenix Directional	7/26/2017	10,721	9,336.28	93.21	177.55	1,352.97	-1,352.53	67.69	0.41	0.18	-0.37	
Phoenix Directional	7/26/2017	10,816	9,331.62	92.42	177.03	1,447.78	-1,447.31	72.17	1.00	-0.83	-0.55	
Phoenix Directional	7/26/2017	10,910	9,327.90	92.11	179.71	1,541.68	-1,541.19	74.84	2.87	-0.33	2.85	
Phoenix Directional	7/26/2017	11,005	9,324.35	92.18	181.68	1,636.59	-1,636.11	73.69	2.07	0.07	2.07	
Phoenix Directional	7/26/2017	11,100	9,318.39	95.01	181.85	1,731.32	-1,730.87	70.77	2.98	2.98	0.18	
Phoenix Directional	7/26/2017	11,195	9,311.75	93.01	181.27	1,826.03	-1,825.60	68.19	2.19	-2.11	-0.61	
Phoenix Directional	7/26/2017	11,289	9,306.94	92.85	180.20	1,919.89	-1,919.47	66.99	1.15	-0.17	-1.14	
Phoenix Directional	7/26/2017	11,384	9,303.26	91.59	179.40	2,014.81	-2,014.39	67.32	1.57	-1.33	-0.84	
Phoenix Directional	7/26/2017	11,479	9,299.95	92.40	179.05	2,109.75	-2,109.32	68.61	0.93	0.85	-0.37	
Phoenix Directional	7/26/2017	11,574	9,294.97	93.61	179.85	2,204.62	-2,204.19	69.52	1.53	1.27	0.84	
Phoenix Directional	7/26/2017	11,668	9,289.16	93.48	179.98	2,298.44	-2,298.01	69.66	0.20	-0.14	0.14	
Phoenix Directional	7/26/2017	11,763	9,283.49	93.37	179.41	2,393.27	-2,392.84	70.16	0.61	-0.12	-0.60	
Phoenix Directional	7/26/2017	11,857	9,279.62	91.35	180.06	2,487.18	-2,486.75	70.59	2.26	-2.15	0.69	
Phoenix Directional	7/26/2017	11,952	9,278.01	90.59	179.40	2,582.17	-2,581.73	71.04	1.06	-0.80	-0.69	
Phoenix Directional	7/26/2017	12,047	9,277.28	90.29	178.87	2,677.16	-2,676.72	72.48	0.64	-0.32	-0.56	
Phoenix Directional	7/26/2017	12,142	9,276.76	90.34	179.00	2,772.15	-2,771.70	74.24	0.15	0.05	0.14	
Phoenix Directional	7/26/2017	12,237	9,276.67	89.76	178.30	2,867.14	-2,866.67	76.48	0.96	-0.61	-0.74	
Phoenix Directional	7/26/2017	12,331	9,278.44	88.08	177.55	2,961.08	-2,960.59	79.88	1.96	-1.79	-0.80	
Phoenix Directional	7/26/2017	12,426	9,280.64	89.27	177.38	3,055.98	-3,055.47	84.08	1.27	1.25	-0.18	
Phoenix Directional	5/31/2018	12,545	9,279.49	91.84	181.04	3,174.95	-3,174.42	85.72	3.76	2.16	3.08	
Phoenix Directional	6/1/2018	12,640	9,275.29	93.23	182.13	3,269.79	-3,269.29	83.10	1.86	1.46	1.15	
Phoenix Directional	6/1/2018	12,829	9,266.27	92.24	183.41	3,458.28	-3,457.85	73.98	0.86	-0.52	0.68	
Phoenix Directional	6/1/2018	12,924	9,263.78	90.76	183.31	3,553.04	-3,552.65	68.41	1.56	-1.56	-0.11	
Phoenix Directional	6/1/2018	13,020	9,264.01	88.97	181.60	3,648.92	-3,648.56	64.30	2.58	-1.86	-1.78	
Phoenix Directional	6/1/2018	13,115	9,266.17	88.42	180.85	3,743.85	-3,743.51	62.27	0.98	-0.58	-0.79	
Phoenix Directional	6/1/2018	13,210	9,269.01	88.16	181.02	3,838.78	-3,838.45	60.72	0.33	-0.27	0.18	
Phoenix Directional	6/1/2018	13,304	9,270.97	89.45	180.23	3,932.74	-3,932.42	59.69	1.61	1.37	-0.84	
Phoenix Directional	6/1/2018	13,399	9,271.10	90.39	178.70	4,027.74	-4,027.42	60.58	1.89	0.99	-1.61	
Phoenix Directional	6/1/2018	13,494	9,270.63	90.18	178.08	4,122.72	-4,122.38	63.25	0.69	-0.22	-0.65	
Phoenix Directional	6/1/2018	13,589	9,269.47	91.21	179.32	4,217.70	-4,217.34	65.41	1.70	1.08	1.31	
Phoenix Directional	6/1/2018	13,684	9,267.37	91.33	179.55	4,312.67	-4,312.31	66.34	0.27	0.13	0.24	
Phoenix Directional	6/1/2018	13,779	9,265.26	91.21	179.09	4,407.65	-4,407.28	67.47	0.50	-0.13	-0.48	
Phoenix Directional	6/1/2018	13,874	9,263.34	91.11	179.00	4,502.62	-4,502.25	69.05	0.14	-0.11	-0.09	
Phoenix Directional	6/2/2018	14,064	9,262.10	89.64	182.87	4,692.53	-4,692.18	65.95	2.18	-0.77	2.04	
Phoenix Directional	6/2/2018	14,159	9,263.64	88.50	182.70	4,787.37	-4,787.05	61.34	1.21	-1.20	-0.18	
Phoenix Directional	6/2/2018	14,253	9,266.13	88.46	182.83	4,881.19	-4,880.91	56.80	0.14	-0.04	0.14	
Phoenix Directional	6/2/2018	14,348	9,268.42	88.78	182.70	4,976.02	-4,975.77	52.22	0.36	0.34	-0.14	
Phoenix Directional	6/2/2018	14,443	9,270.81	88.34	182.70	5,070.85	-5,070.64	47.75	0.46	-0.46	0.00	
Phoenix Directional	6/2/2018	14,537	9,273.71	88.12	181.02	5,164.73	-5,164.54	44.70	1.80	-0.23	-1.79	
Phoenix Directional	6/2/2018	14,632	9,274.79	90.58	180.41	5,259.69	-5,259.52	43.51	2.67	2.59	-0.64	
Phoenix Directional	6/2/2018	14,727	9,273.21	91.32	180.45	5,354.67	-5,354.50	42.80	0.78	0.78	0.04	



Directional Survey Data

Survey Data												
Survey Company	Date	MD (ft)	TVD (ft)	Incl (°)	Azm (°)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)	
Phoenix Directional	6/2/2018	14,822	9,270.82	91.57	180.41	5,449.63	-5,449.47	42.09	0.27	0.26	-0.04	
Phoenix Directional	6/2/2018	14,917	9,268.39	91.36	180.10	5,544.59	-5,544.44	41.67	0.39	-0.22	-0.33	
Phoenix Directional	6/2/2018	15,011	9,266.21	91.30	179.88	5,638.57	-5,638.41	41.68	0.24	-0.06	-0.23	
Phoenix Directional	6/2/2018	15,106	9,264.21	91.11	179.51	5,733.54	-5,733.39	42.19	0.44	-0.20	-0.39	
Phoenix Directional	6/2/2018	15,202	9,262.67	90.73	179.22	5,829.53	-5,829.37	43.25	0.50	-0.40	-0.30	
Phoenix Directional	6/2/2018	15,297	9,261.62	90.53	179.08	5,924.52	-5,924.35	44.66	0.26	-0.21	-0.15	
Phoenix Directional	6/2/2018	15,392	9,260.73	90.55	179.03	6,019.51	-6,019.34	46.23	0.06	0.02	-0.05	
Phoenix Directional	6/2/2018	15,581	9,258.53	90.78	180.39	6,208.50	-6,208.32	47.18	0.73	0.12	0.72	
Phoenix Directional	6/2/2018	15,676	9,256.58	91.57	180.50	6,303.46	-6,303.29	46.45	0.84	0.83	0.12	
Phoenix Directional	6/2/2018	15,771	9,254.13	91.39	180.63	6,398.42	-6,398.26	45.51	0.23	-0.19	0.14	
Phoenix Directional	6/2/2018	15,866	9,251.57	91.70	180.41	6,493.37	-6,493.22	44.65	0.40	0.33	-0.23	
Phoenix Directional	6/2/2018	15,962	9,249.74	90.49	181.24	6,589.33	-6,589.19	43.27	1.53	-1.26	0.86	
Phoenix Directional	6/2/2018	16,057	9,249.38	89.94	181.42	6,684.29	-6,684.16	41.06	0.61	-0.58	0.19	
Phoenix Directional	6/2/2018	16,152	9,249.63	89.76	181.33	6,779.24	-6,779.13	38.78	0.21	-0.19	-0.09	
Phoenix Directional	6/2/2018	16,247	9,250.43	89.27	181.02	6,874.20	-6,874.11	36.83	0.61	-0.52	-0.33	
Phoenix Directional	6/2/2018	16,437	9,254.43	88.32	181.38	7,064.08	-7,064.02	32.86	0.53	-0.50	0.19	
Phoenix Directional	6/2/2018	16,532	9,257.23	88.30	181.29	7,159.00	-7,158.96	30.64	0.10	-0.02	-0.09	
Phoenix Directional	6/2/2018	16,627	9,259.92	88.45	182.21	7,253.89	-7,253.87	27.74	0.98	0.16	0.97	
Phoenix Directional	6/2/2018	16,722	9,261.97	89.08	182.45	7,348.76	-7,348.77	23.88	0.71	0.66	0.25	
Phoenix Directional	6/2/2018	16,816	9,264.45	87.90	181.77	7,442.64	-7,442.67	20.42	1.45	-1.26	-0.72	
Phoenix Directional	6/2/2018	16,858	9,265.95	87.99	181.83	7,484.58	-7,484.63	19.10	0.26	0.21	0.14	
Phoenix Directional	6/2/2018	16,926	9,268.33	88.00	181.83	7,552.48	-7,552.55	16.93	0.01	0.01	0.00	

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