



Directional Survey Data

Well Name HH CE 35 2 FED 006 3H	Lease HH CE 35 2 Fed 006	Field Name Purple Sage	Business Unit Mid-Continent	Latitude (") 32° 5' 8.117" N	Longitude (") 104° 9' 11.758" W	Surface UWI 3001544350	Surface ChevNo PM0786
Wellbore Name Original Hole	Wellbore UWI 300154435000	Wellbore ChevNo PM0786-00	Directional Type Horizontal	Min Kick Off Depth (ftOTH) 9,295.0	Min Kick Off Depth (TVD) (ftOTH) 9,277.9	Total Depth of Wellbore (ftOTH) 17,422.00	Date TD Reached (wellbore) 7/8/2018

Bottom Hole Location

Northing (Y) (ft)	Easting (X) (ft)	UTM Grid Zone	Latitude (")	Longitude (")	Closure Direction (") 182.74
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Directional Surveys

Description MWD	Planned? N	Definitive? N	Note Correction
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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	12/18/2017	169	168.96	2.18	127.67	1.84	-1.96	2.54	1.29	1.29	75.54
Phoenix Directional	12/18/2017	355	354.81	2.35	125.73	5.94	-6.35	8.44	0.10	0.09	-1.04
Phoenix Directional	12/18/2017	446	445.74	2.33	113.17	7.60	-8.17	11.66	0.56	-0.02	-13.80
Phoenix Directional	2/10/2017	588	587.61	2.56	109.18	9.51	-10.35	17.30	0.20	0.16	-2.81
Phoenix Directional	2/10/2017	683	682.56	1.14	51.21	9.48	-10.45	20.05	2.30	-1.49	-61.02
Phoenix Directional	2/10/2017	778	777.55	1.19	11.64	7.88	-8.89	20.98	0.83	0.05	-41.65
Phoenix Directional	2/10/2017	873	872.53	1.01	28.22	6.15	-7.19	21.58	0.38	-0.19	17.45
Phoenix Directional	2/10/2017	968	967.51	1.20	334.62	4.52	-5.55	21.55	1.06	0.20	-56.42
Phoenix Directional	2/10/2017	1,052	1,051.49	1.48	319.65	2.95	-3.93	20.47	0.53	0.33	-17.82
Phoenix Directional	2/10/2017	1,147	1,146.46	1.32	318.71	1.27	-2.18	18.95	0.17	-0.17	-0.99
Phoenix Directional	2/10/2017	1,242	1,241.43	1.45	312.58	-0.29	-0.54	17.34	0.21	0.14	-6.45
Phoenix Directional	2/10/2017	1,337	1,336.41	1.32	314.74	-1.79	1.04	15.68	0.15	-0.14	2.27
Phoenix Directional	2/11/2018	1,431	1,430.39	1.13	323.50	-3.23	2.55	14.36	0.28	-0.20	9.32
Phoenix Directional	2/11/2018	1,526	1,525.37	0.91	329.49	-4.59	3.95	13.42	0.26	-0.23	6.31
Phoenix Directional	2/11/2018	1,621	1,620.36	0.89	5.54	-5.96	5.34	13.11	0.59	-0.02	37.95
Phoenix Directional	2/11/2018	1,716	1,715.35	1.13	46.98	-7.37	6.71	13.86	0.79	0.25	43.62
Phoenix Directional	2/11/2018	1,810	1,809.32	1.71	62.76	-8.73	7.99	15.79	0.74	0.62	16.79
Phoenix Directional	2/11/2018	1,904	1,903.26	2.10	70.59	-10.08	9.20	18.66	0.50	0.41	8.33
Phoenix Directional	2/11/2018	1,999	1,998.19	2.47	58.46	-11.89	10.85	22.05	0.64	0.39	-12.77
Phoenix Directional	2/11/2018	2,093	2,092.10	2.80	25.95	-15.14	13.97	24.78	1.60	0.35	-34.59
Phoenix Directional	2/11/2018	2,188	2,186.94	3.88	350.83	-20.42	19.23	25.28	2.38	1.14	-36.97
Phoenix Directional	2/11/2018	2,283	2,281.70	4.48	318.38	-26.22	25.18	22.30	2.53	0.63	-34.16
Phoenix Directional	2/11/2018	2,377	2,375.35	5.58	293.72	-30.48	29.76	15.68	2.55	1.17	-26.23
Phoenix Directional	2/11/2018	2,471	2,468.87	6.04	287.82	-33.40	33.12	6.79	0.80	0.49	-6.28
Phoenix Directional	2/11/2018	2,566	2,563.35	5.96	289.62	-36.14	36.30	-2.62	0.22	-0.08	1.89
Phoenix Directional	2/11/2018	2,660	2,656.84	5.90	288.31	-38.85	39.46	-11.80	0.16	-0.06	-1.39
Phoenix Directional	2/11/2018	2,755	2,751.34	5.87	289.00	-41.52	42.57	-21.03	0.08	-0.03	0.73
Phoenix Directional	2/11/2018	2,849	2,844.86	5.81	285.82	-43.94	45.44	-30.15	0.35	-0.06	-3.38
Phoenix Directional	2/11/2018	2,943	2,938.38	5.78	289.33	-46.37	48.30	-39.19	0.38	-0.03	3.73
Phoenix Directional	2/11/2018	3,037	3,031.91	5.62	289.64	-49.06	51.41	-48.00	0.17	-0.17	0.33
Phoenix Directional	2/11/2018	3,132	3,126.46	5.57	287.95	-51.62	54.40	-56.76	0.18	-0.05	-1.78
Phoenix Directional	2/11/2018	3,225	3,219.05	5.15	298.29	-54.61	57.77	-64.73	1.13	-0.45	11.12
Phoenix Directional	2/11/2018	3,320	3,313.67	5.14	303.77	-58.64	62.15	-72.02	0.52	-0.01	5.77
Phoenix Directional	2/11/2018	3,414	3,407.30	5.09	301.84	-62.84	66.69	-79.07	0.19	-0.05	-2.05
Phoenix Directional	2/11/2018	3,509	3,501.92	5.17	300.90	-66.91	71.12	-86.32	0.12	0.08	-0.99



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Phoenix Directional	2/11/2018	3,604	3,596.54	5.04	302.28	-70.98	75.54	-93.52	0.19	-0.14	1.45	
Phoenix Directional	2/11/2018	3,699	3,691.19	4.80	301.12	-74.93	79.82	-100.45	0.27	-0.25	-1.22	
Phoenix Directional	2/12/2018	3,794	3,785.80	5.56	305.38	-79.30	84.54	-107.61	0.90	0.80	4.48	
Phoenix Directional	2/12/2018	3,889	3,880.35	5.65	309.07	-84.56	90.16	-114.99	0.39	0.09	3.88	
Phoenix Directional	2/12/2018	3,984	3,974.86	6.00	303.28	-89.85	95.83	-122.77	0.72	0.37	-6.09	
Phoenix Directional	2/12/2018	4,079	4,069.33	6.06	299.45	-94.63	101.02	-131.29	0.43	0.06	-4.03	
Phoenix Directional	2/12/2018	4,174	4,163.82	5.88	301.50	-99.22	106.03	-139.80	0.29	-0.19	2.16	
Phoenix Directional	2/12/2018	4,269	4,258.33	5.68	302.94	-103.93	111.12	-147.90	0.26	-0.21	1.52	
Phoenix Directional	2/12/2018	4,364	4,352.89	5.44	302.90	-108.55	116.13	-155.63	0.25	-0.25	-0.04	
Phoenix Directional	2/12/2018	4,459	4,447.49	5.08	303.31	-112.96	120.88	-162.92	0.38	-0.38	0.43	
Phoenix Directional	2/12/2018	4,553	4,541.13	4.84	302.70	-117.05	125.31	-169.74	0.26	-0.26	-0.65	
Phoenix Directional	2/12/2018	4,648	4,635.81	4.57	300.64	-120.83	129.40	-176.37	0.34	-0.28	-2.17	
Phoenix Directional	2/12/2018	4,743	4,730.50	4.76	305.79	-124.75	133.64	-182.82	0.48	0.20	5.42	
Phoenix Directional	2/12/2018	4,838	4,825.12	5.53	310.05	-129.67	138.89	-189.52	0.90	0.81	4.48	
Phoenix Directional	2/12/2018	4,933	4,919.65	5.84	304.57	-134.99	144.58	-197.00	0.66	0.33	-5.77	
Phoenix Directional	2/12/2018	5,028	5,014.17	5.67	302.81	-139.89	149.86	-204.93	0.26	-0.18	-1.85	
Phoenix Directional	2/12/2018	5,123	5,108.73	5.38	303.66	-144.53	154.87	-212.58	0.32	-0.31	0.89	
Phoenix Directional	2/12/2018	5,217	5,202.33	5.19	303.20	-148.95	159.64	-219.81	0.21	-0.20	-0.49	
Phoenix Directional	2/12/2018	5,312	5,296.97	4.75	305.36	-153.25	164.27	-226.61	0.50	-0.46	2.27	
Phoenix Directional	2/12/2018	5,407	5,391.67	4.41	304.33	-157.29	168.61	-232.83	0.37	-0.36	-1.08	
Phoenix Directional	2/12/2018	5,501	5,485.40	4.20	304.40	-160.99	172.59	-238.66	0.22	-0.22	0.07	
Phoenix Directional	2/12/2018	5,596	5,580.17	3.87	303.83	-164.47	176.34	-244.19	0.35	-0.35	-0.60	
Phoenix Directional	2/13/2018	5,785	5,768.79	3.40	294.87	-169.87	182.25	-254.57	0.39	-0.25	-4.74	
Phoenix Directional	2/13/2018	5,881	5,864.66	2.64	296.57	-171.84	184.44	-259.13	0.80	-0.79	1.77	
Phoenix Directional	2/13/2018	6,071	6,054.57	0.67	286.79	-173.88	186.72	-264.11	1.04	-1.04	-5.15	
Phoenix Directional	2/13/2018	6,166	6,149.56	0.70	279.41	-174.08	186.97	-265.22	0.10	0.03	-7.77	
Phoenix Directional	2/13/2018	6,261	6,244.55	0.83	273.89	-174.16	187.11	-266.47	0.16	0.14	-5.81	
Phoenix Directional	2/13/2018	6,356	6,339.54	0.92	268.90	-174.12	187.14	-267.92	0.12	0.09	-5.25	
Phoenix Directional	2/13/2018	6,451	6,434.53	1.06	259.65	-173.87	186.97	-269.55	0.22	0.15	-9.74	
Phoenix Directional	2/13/2018	6,546	6,529.51	0.76	256.05	-173.49	186.66	-271.03	0.32	-0.32	-3.79	
Phoenix Directional	2/13/2018	6,640	6,623.51	0.82	229.26	-172.85	186.07	-272.14	0.39	0.06	-28.50	
Phoenix Directional	2/13/2018	6,735	6,718.49	1.06	220.79	-171.69	184.96	-273.23	0.29	0.25	-8.92	
Phoenix Directional	2/13/2018	6,830	6,813.47	1.26	221.55	-170.18	183.52	-274.50	0.21	0.21	0.80	
Phoenix Directional	2/13/2018	6,924	6,907.45	1.04	228.93	-168.79	182.18	-275.83	0.28	-0.23	7.85	
Phoenix Directional	2/13/2018	7,018	7,001.44	0.95	233.46	-167.70	181.16	-277.10	0.13	-0.10	4.82	
Phoenix Directional	2/13/2018	7,113	7,096.42	1.15	228.20	-166.54	180.05	-278.44	0.23	0.21	-5.54	
Phoenix Directional	2/13/2018	7,208	7,191.41	0.95	232.89	-165.36	178.94	-279.78	0.23	-0.21	4.94	
Phoenix Directional	2/13/2018	7,303	7,286.39	1.05	236.06	-164.34	177.98	-281.13	0.12	0.11	3.34	
Phoenix Directional	2/13/2018	7,398	7,381.37	1.32	242.54	-163.27	176.99	-282.82	0.32	0.28	6.82	
Phoenix Directional	2/13/2018	7,587	7,570.31	1.66	277.26	-162.39	176.33	-287.47	0.50	0.18	18.37	
Phoenix Directional	2/17/2018	7,682	7,665.26	2.24	277.70	-162.66	176.76	-290.67	0.61	0.61	0.46	
Phoenix Directional	2/17/2018	7,777	7,760.19	2.24	276.19	-162.93	177.21	-294.36	0.06	0.00	-1.59	
Phoenix Directional	2/17/2018	7,872	7,855.11	2.38	281.38	-163.34	177.79	-298.14	0.26	0.15	5.46	



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Phoenix Directional	2/17/2018	7,966	7,949.04	2.03	280.48	-163.86	178.48	-301.69	0.37	-0.37	-0.96
Phoenix Directional	2/17/2018	8,061	8,043.99	1.49	289.23	-164.43	179.20	-304.51	0.63	-0.57	9.21
Phoenix Directional	2/17/2018	8,156	8,138.97	1.25	300.35	-165.26	180.13	-306.57	0.38	-0.25	11.71
Phoenix Directional	2/17/2018	8,251	8,233.95	0.86	299.10	-166.06	181.00	-308.09	0.41	-0.41	-1.32
Phoenix Directional	2/18/2018	8,346	8,328.95	0.27	120.80	-166.27	181.23	-308.52	1.19	-0.62	-187.68
Phoenix Directional	2/18/2018	8,440	8,422.94	0.70	127.76	-165.84	180.76	-307.87	0.46	0.46	7.40
Phoenix Directional	2/18/2018	8,535	8,517.94	0.12	87.66	-165.51	180.41	-307.31	0.65	-0.61	-42.21
Phoenix Directional	2/18/2018	8,629	8,611.94	0.07	318.83	-165.56	180.46	-307.25	0.18	-0.05	-137.05
Phoenix Directional	2/19/2018	8,724	8,706.94	0.36	126.05	-165.44	180.33	-307.05	0.45	0.31	176.02
Phoenix Directional	2/19/2018	8,819	8,801.94	0.28	136.65	-165.12	179.98	-306.65	0.10	-0.08	11.16
Phoenix Directional	2/19/2018	8,913	8,895.94	0.10	205.82	-164.88	179.74	-306.53	0.28	-0.19	73.59
Phoenix Directional	2/19/2018	9,008	8,990.94	0.50	212.25	-164.45	179.32	-306.79	0.42	0.42	6.77
Phoenix Directional	2/19/2018	9,102	9,084.93	0.54	224.90	-163.76	178.66	-307.32	0.13	0.04	13.46
Phoenix Directional	2/19/2018	9,184	9,166.93	0.44	184.90	-163.16	178.07	-307.62	0.42	-0.12	-48.78
Phoenix Directional	2/19/2018	9,298	9,280.92	1.26	182.52	-161.47	176.38	-307.71	0.72	0.72	-2.09
Phoenix Directional	2/19/2018	9,345	9,327.80	6.39	183.22	-158.33	173.25	-307.88	10.92	10.91	1.49
Phoenix Directional	2/19/2018	9,393	9,375.23	11.07	185.20	-151.06	165.99	-308.45	9.77	9.75	4.13
Phoenix Directional	2/19/2018	9,488	9,466.29	21.54	176.81	-124.52	139.42	-308.30	11.27	11.02	-8.83
Phoenix Directional	2/19/2018	9,535	9,509.08	27.26	176.94	-105.21	120.04	-307.25	12.17	12.17	0.28
Phoenix Directional	2/19/2018	9,582	9,550.14	30.91	177.07	-82.48	97.23	-306.06	7.77	7.77	0.28
Phoenix Directional	2/19/2018	9,629	9,589.54	35.16	178.61	-56.96	71.63	-305.11	9.22	9.04	3.28
Phoenix Directional	2/19/2018	9,677	9,627.75	39.28	178.43	-28.01	42.61	-304.36	8.59	8.58	-0.38
Phoenix Directional	2/19/2018	9,724	9,663.18	42.85	178.83	2.78	11.75	-303.62	7.62	7.60	0.85
Phoenix Directional	2/19/2018	9,772	9,696.99	47.55	177.77	36.72	-22.28	-302.60	9.92	9.79	-2.21
Phoenix Directional	2/19/2018	9,819	9,727.27	52.21	178.65	72.54	-58.20	-301.49	10.02	9.91	1.87
Phoenix Directional	2/19/2018	9,866	9,754.44	57.13	178.65	110.78	-96.52	-300.58	10.47	10.47	0.00
Phoenix Directional	2/19/2018	9,913	9,778.47	61.36	177.42	151.02	-136.87	-299.19	9.28	9.00	-2.62
Phoenix Directional	2/19/2018	9,961	9,799.95	65.48	176.94	193.73	-179.74	-297.08	8.63	8.58	-1.00
Phoenix Directional	2/19/2018	10,008	9,817.95	69.46	176.62	236.90	-223.07	-294.64	8.49	8.47	-0.68
Phoenix Directional	2/19/2018	10,056	9,833.08	73.78	176.59	282.18	-268.53	-291.94	9.00	9.00	-0.06
Phoenix Directional	2/19/2018	10,103	9,844.04	79.26	178.65	327.69	-314.18	-290.05	12.41	11.66	4.38
Phoenix Directional	2/19/2018	10,151	9,851.30	83.32	179.05	375.01	-361.61	-289.10	8.50	8.46	0.83
Phoenix Directional	2/19/2018	10,198	9,854.34	89.27	179.79	421.82	-408.49	-288.63	12.76	12.66	1.57
Phoenix Directional	2/19/2018	10,245	9,854.02	91.51	180.94	468.77	-455.48	-288.93	5.36	4.77	2.45
Phoenix Directional	2/19/2018	10,340	9,852.84	89.91	180.67	563.71	-550.46	-290.26	1.71	-1.68	-0.28
Phoenix Directional	2/19/2018	10,435	9,852.41	90.61	179.40	658.60	-645.46	-290.32	1.53	0.74	-1.34
Phoenix Directional	2/19/2018	10,531	9,850.69	91.45	179.62	754.43	-741.44	-289.50	0.90	0.88	0.23
Phoenix Directional	2/19/2018	10,625	9,849.79	89.64	177.25	848.15	-835.39	-286.93	3.17	-1.93	-2.52
Phoenix Directional	2/19/2018	10,721	9,849.60	90.59	176.06	943.60	-931.22	-281.33	1.59	0.99	-1.24
Phoenix Directional	2/19/2018	10,815	9,849.54	89.48	179.79	1,037.25	-1,025.14	-277.93	4.14	-1.18	3.97
Phoenix Directional	2/19/2018	10,910	9,851.43	88.24	179.88	1,132.11	-1,120.12	-277.65	1.31	-1.31	0.09
Phoenix Directional	2/19/2018	11,008	9,854.63	88.02	182.87	1,230.02	-1,218.03	-280.00	3.06	-0.22	3.05
Phoenix Directional	2/19/2018	11,103	9,858.19	87.68	181.73	1,324.95	-1,312.88	-283.81	1.25	-0.36	-1.20



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Phoenix Directional	2/19/2018	11,194	9,860.07	89.96	180.59	1,415.89	-1,403.84	-285.65	2.80	2.51	-1.25
Phoenix Directional	2/19/2018	11,289	9,859.06	91.25	181.29	1,510.83	-1,498.82	-287.21	1.54	1.36	0.74
Phoenix Directional	2/19/2018	11,383	9,857.17	91.06	180.28	1,604.76	-1,592.79	-288.50	1.09	-0.20	-1.07
Phoenix Directional	2/19/2018	11,572	9,853.10	91.41	176.89	1,793.19	-1,781.66	-283.83	1.80	0.19	-1.79
Phoenix Directional	2/19/2018	11,668	9,851.33	90.70	179.40	1,888.86	-1,877.58	-280.73	2.72	-0.74	2.61
Phoenix Directional	2/19/2018	11,762	9,848.99	92.15	182.39	1,982.77	-1,971.53	-282.20	3.53	1.54	3.18
Phoenix Directional	2/19/2018	11,857	9,844.71	93.01	182.56	2,077.67	-2,066.34	-286.29	0.92	0.91	0.18
Phoenix Directional	2/19/2018	11,952	9,842.66	89.47	182.04	2,172.63	-2,161.23	-290.10	3.77	-3.73	-0.55
Phoenix Directional	2/19/2018	12,047	9,843.18	89.90	180.45	2,267.59	-2,256.20	-292.17	1.73	0.45	-1.67
Phoenix Directional	2/19/2018	12,141	9,843.97	89.14	184.72	2,361.56	-2,350.08	-296.41	4.61	-0.81	4.54
Phoenix Directional	2/19/2018	12,236	9,843.33	91.63	185.95	2,456.45	-2,444.66	-305.24	2.92	2.62	1.29
Phoenix Directional	2/19/2018	12,331	9,841.67	90.37	181.95	2,551.40	-2,539.40	-311.78	4.41	-1.33	-4.21
Phoenix Directional	2/19/2018	12,426	9,841.28	90.10	179.97	2,646.35	-2,634.38	-313.37	2.10	-0.28	-2.08
Phoenix Directional	2/19/2018	12,521	9,841.04	90.19	177.68	2,741.12	-2,729.35	-311.42	2.41	0.09	-2.41
Phoenix Directional	2/19/2018	12,616	9,840.71	90.21	179.71	2,835.88	-2,824.32	-309.26	2.14	0.02	2.14
Phoenix Directional	2/19/2018	12,711	9,839.64	91.08	180.28	2,930.76	-2,919.31	-309.25	1.09	0.92	0.60
Phoenix Directional	2/19/2018	12,806	9,837.88	91.04	178.17	3,025.56	-3,014.28	-307.97	2.22	-0.04	-2.22
Phoenix Directional	2/19/2018	12,901	9,836.02	91.21	180.68	3,120.37	-3,109.25	-307.01	2.65	0.18	2.64
Phoenix Directional	2/19/2018	12,996	9,834.60	90.50	180.10	3,215.28	-3,204.24	-307.66	0.96	-0.75	-0.61
Phoenix Directional	2/19/2018	13,186	9,830.98	91.68	179.75	3,405.02	-3,394.20	-307.41	0.65	0.62	-0.18
Phoenix Directional	2/19/2018	13,280	9,829.90	89.64	181.97	3,498.95	-3,488.17	-308.82	3.21	-2.17	2.36
Phoenix Directional	2/19/2018	13,375	9,830.27	89.91	180.94	3,593.92	-3,583.14	-311.23	1.12	0.28	-1.08
Phoenix Directional	2/19/2018	13,470	9,830.72	89.55	179.84	3,688.84	-3,678.14	-311.88	1.22	-0.38	-1.16
Phoenix Directional	2/19/2018	13,565	9,829.81	91.55	179.93	3,783.71	-3,773.13	-311.69	2.11	2.11	0.09
Phoenix Directional	2/19/2018	13,660	9,828.62	89.88	181.51	3,878.64	-3,868.10	-312.88	2.42	-1.76	1.66
Phoenix Directional	2/19/2018	13,755	9,828.42	90.37	181.07	3,973.61	-3,963.08	-315.02	0.69	0.52	-0.46
Phoenix Directional	2/19/2018	13,851	9,830.84	86.74	181.51	4,069.53	-4,059.01	-317.18	3.81	-3.78	0.46
Phoenix Directional	2/19/2018	13,945	9,836.56	86.28	181.20	4,163.33	-4,152.81	-319.40	0.59	-0.49	-0.33
Phoenix Directional	2/19/2018	14,040	9,842.21	86.90	181.20	4,258.13	-4,247.62	-321.39	0.65	0.65	0.00
Phoenix Directional	2/19/2018	14,135	9,847.51	86.70	181.46	4,352.95	-4,342.44	-323.59	0.34	-0.21	0.27
Phoenix Directional	2/19/2018	14,229	9,851.19	88.82	180.92	4,446.84	-4,436.35	-325.54	2.33	2.26	-0.57
Phoenix Directional	2/19/2018	14,419	9,854.39	89.25	175.40	4,636.13	-4,626.15	-319.44	2.91	0.23	-2.91
Phoenix Directional	2/19/2018	14,514	9,853.20	92.19	179.87	4,730.71	-4,721.03	-315.52	5.63	3.09	4.71
Phoenix Directional	2/19/2018	14,608	9,848.98	92.95	179.84	4,824.50	-4,814.93	-315.28	0.81	0.81	-0.03
Phoenix Directional	2/19/2018	14,799	9,843.03	90.62	182.09	5,015.29	-5,005.78	-318.50	1.70	-1.22	1.18
Phoenix Directional	2/19/2018	14,893	9,842.19	90.41	181.73	5,109.27	-5,099.73	-321.63	0.44	-0.22	-0.38
Phoenix Directional	2/19/2018	14,988	9,842.45	89.27	179.79	5,204.21	-5,194.71	-322.89	2.37	-1.20	-2.04
Phoenix Directional	2/19/2018	15,083	9,844.14	88.69	181.82	5,299.14	-5,289.68	-324.23	2.22	-0.61	2.14
Phoenix Directional	2/19/2018	15,178	9,845.77	89.35	182.08	5,394.11	-5,384.61	-327.46	0.75	0.69	0.27
Phoenix Directional	2/19/2018	15,273	9,846.80	89.40	182.39	5,489.10	-5,479.54	-331.16	0.33	0.05	0.33
Phoenix Directional	2/19/2018	15,368	9,846.92	90.46	181.95	5,584.10	-5,574.47	-334.76	1.21	1.12	-0.46
Phoenix Directional	2/19/2018	15,463	9,846.18	90.43	181.02	5,679.07	-5,669.43	-337.22	0.98	-0.03	-0.98
Phoenix Directional	2/19/2018	15,557	9,845.33	90.61	183.00	5,773.05	-5,763.36	-340.52	2.11	0.19	2.11



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	2/19/2018	15,653	9,844.85	89.96	180.19	5,869.02	-5,859.32	-343.19	3.00	-0.68	-2.93	
Phoenix Directional	2/19/2018	15,748	9,843.77	91.35	179.18	5,963.88	-5,954.30	-342.67	1.81	1.46	-1.06	
Phoenix Directional	2/19/2018	15,843	9,843.56	88.90	180.76	6,058.76	-6,049.29	-342.62	3.07	-2.58	1.66	
Phoenix Directional	2/19/2018	15,938	9,845.37	88.91	180.94	6,153.69	-6,144.27	-344.03	0.19	0.01	0.19	
Phoenix Directional	2/19/2018	16,033	9,844.15	92.57	184.37	6,248.65	-6,239.13	-348.43	5.28	3.85	3.61	
Phoenix Directional	2/19/2018	16,128	9,839.52	93.01	184.15	6,343.50	-6,333.75	-355.48	0.52	0.46	-0.23	
Phoenix Directional	2/19/2018	16,223	9,835.01	92.44	184.28	6,438.36	-6,428.39	-362.45	0.62	-0.60	0.14	
Phoenix Directional	2/19/2018	16,318	9,833.50	89.38	182.78	6,533.33	-6,523.18	-368.30	3.59	-3.22	-1.58	
Phoenix Directional	2/19/2018	16,509	9,839.33	87.12	183.62	6,724.22	-6,713.78	-378.95	1.26	-1.18	0.44	
Phoenix Directional	2/19/2018	16,603	9,843.06	88.33	183.31	6,818.14	-6,807.53	-384.63	1.33	1.29	-0.33	
Phoenix Directional	2/19/2018	16,698	9,845.01	89.32	183.93	6,913.10	-6,902.32	-390.63	1.23	1.04	0.65	
Phoenix Directional	2/19/2018	16,793	9,844.61	91.16	183.63	7,008.08	-6,997.11	-396.89	1.96	1.94	-0.32	
Phoenix Directional	2/19/2018	16,888	9,842.17	91.78	183.11	7,103.04	-7,091.91	-402.47	0.85	0.65	-0.55	
Phoenix Directional	2/19/2018	16,983	9,840.57	90.16	180.59	7,198.01	-7,186.84	-405.54	3.15	-1.71	-2.65	
Phoenix Directional	2/19/2018	17,077	9,839.77	90.81	180.85	7,291.95	-7,280.83	-406.72	0.74	0.69	0.28	
Phoenix Directional	2/19/2018	17,172	9,839.07	90.04	179.75	7,386.86	-7,375.82	-407.22	1.41	-0.81	-1.16	
Phoenix Directional	2/19/2018	17,267	9,838.24	90.96	179.09	7,481.69	-7,470.81	-406.25	1.19	0.97	-0.69	
Phoenix Directional	2/19/2018	17,362	9,835.70	92.10	178.43	7,576.43	-7,565.75	-404.20	1.39	1.20	-0.69	
Phoenix Directional	2/19/2018	17,422	9,833.50	92.10	178.43	7,636.22	-7,625.69	-402.56	0.00	0.00	0.00	