



**SUMMIT**  
OILFIELD SERVICES, INC

Company: Bonanza Creek  
Lease/Well: DOW 43-28  
County/State: Weld/CO

Job Number: 7746-512320594  
Date: 5-2-19  
Survey Type: Memory  
Declination: 9.38

Instrument Number: GP1-1000  
North Reference: True North  
Survey Engineer: Nathan Proffitt

## Summit Oilfield Services

*Minimum Curvature Method  
Vertical Section Plane: 0.00  
Vertical Section Reference:  
Rectangular Coordinates Reference:*

Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
0.00 ft	0.00	0.00	0.00 ft	0.00 ft	0.00 ft	0.00 ft	0.00 ft	0.00/100 ft	0.00 ft	0.00
100.00 ft	0.60	195.61	100.00 ft	100.00 ft	-0.50 ft	-0.14 ft	-0.50 ft	0.60/100 ft	0.52 ft	195.61
200.00 ft	0.58	253.47	100.00 ft	199.99 ft	-1.15 ft	-0.76 ft	-1.15 ft	0.57/100 ft	1.38 ft	213.61
300.00 ft	0.47	117.20	100.00 ft	299.99 ft	-1.48 ft	-0.88 ft	-1.48 ft	0.97/100 ft	1.72 ft	210.85
400.00 ft	0.88	52.26	100.00 ft	399.99 ft	-1.19 ft	0.09 ft	-1.19 ft	0.80/100 ft	1.19 ft	175.80
500.00 ft	0.79	76.60	100.00 ft	499.98 ft	-0.56 ft	1.36 ft	-0.56 ft	0.36/100 ft	1.48 ft	112.40
600.00 ft	0.17	156.35	100.00 ft	599.97 ft	-0.54 ft	2.09 ft	-0.54 ft	0.78/100 ft	2.16 ft	104.37
700.00 ft	0.46	123.30	100.00 ft	699.97 ft	-0.89 ft	2.49 ft	-0.89 ft	0.34/100 ft	2.64 ft	109.70
800.00 ft	0.54	142.30	100.00 ft	799.97 ft	-1.49 ft	3.12 ft	-1.49 ft	0.18/100 ft	3.45 ft	115.53
900.00 ft	0.37	205.97	100.00 ft	899.96 ft	-2.15 ft	3.27 ft	-2.15 ft	0.50/100 ft	3.91 ft	123.35
1000.00 ft	0.39	200.29	100.00 ft	999.96 ft	-2.76 ft	3.01 ft	-2.76 ft	0.05/100 ft	4.08 ft	132.51
1100.00 ft	0.86	105.64	100.00 ft	1099.96 ft	-3.28 ft	3.61 ft	-3.28 ft	0.97/100 ft	4.88 ft	132.26
1200.00 ft	0.51	308.38	100.00 ft	1199.95 ft	-3.20 ft	3.98 ft	-3.20 ft	1.35/100 ft	5.11 ft	128.84
1300.00 ft	0.84	60.00	100.00 ft	1299.95 ft	-2.56 ft	4.26 ft	-2.56 ft	1.13/100 ft	4.97 ft	121.02
1400.00 ft	0.61	164.75	100.00 ft	1399.95 ft	-2.71 ft	5.03 ft	-2.71 ft	1.16/100 ft	5.72 ft	118.35



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Survey Type: Memory  
Declination: 9.38

Instrument Number: GP1-1000  
North Reference: True North  
Survey Engineer: Nathan Proffitt

Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
1500.00 ft	0.45	258.31	100.00 ft	1499.94 ft	-3.31 ft	4.79 ft	-3.31 ft	0.78/100 ft	5.82 ft	124.64
1600.00 ft	0.44	234.82	100.00 ft	1599.94 ft	-3.61 ft	4.10 ft	-3.61 ft	0.18/100 ft	5.46 ft	131.39
1700.00 ft	0.56	208.10	100.00 ft	1699.94 ft	-4.26 ft	3.55 ft	-4.26 ft	0.26/100 ft	5.55 ft	140.16
1800.00 ft	0.73	71.14	100.00 ft	1799.93 ft	-4.48 ft	3.93 ft	-4.48 ft	1.20/100 ft	5.96 ft	138.74
1900.00 ft	0.41	299.43	100.00 ft	1899.93 ft	-4.10 ft	4.23 ft	-4.10 ft	1.05/100 ft	5.89 ft	134.13
2000.00 ft	0.53	211.00	100.00 ft	1999.93 ft	-4.32 ft	3.67 ft	-4.32 ft	0.66/100 ft	5.67 ft	139.64
2100.00 ft	1.10	167.80	100.00 ft	2099.92 ft	-5.66 ft	3.64 ft	-5.66 ft	0.80/100 ft	6.73 ft	147.28
2200.00 ft	1.18	165.85	100.00 ft	2199.90 ft	-7.60 ft	4.09 ft	-7.60 ft	0.09/100 ft	8.64 ft	151.71
2300.00 ft	1.42	152.34	100.00 ft	2299.87 ft	-9.70 ft	4.92 ft	-9.70 ft	0.38/100 ft	10.88 ft	153.11
2400.00 ft	1.72	133.24	100.00 ft	2399.84 ft	-11.82 ft	6.59 ft	-11.82 ft	0.60/100 ft	13.54 ft	150.88
2500.00 ft	1.43	144.66	100.00 ft	2499.80 ft	-13.87 ft	8.41 ft	-13.87 ft	0.43/100 ft	16.22 ft	148.79
2600.00 ft	1.81	131.29	100.00 ft	2599.76 ft	-15.94 ft	10.32 ft	-15.94 ft	0.53/100 ft	18.98 ft	147.08
2700.00 ft	0.73	77.04	100.00 ft	2699.74 ft	-16.84 ft	12.13 ft	-16.84 ft	1.51/100 ft	20.75 ft	144.23
2800.00 ft	0.06	157.79	100.00 ft	2799.73 ft	-16.74 ft	12.77 ft	-16.74 ft	0.73/100 ft	21.06 ft	142.66
2900.00 ft	0.81	246.17	100.00 ft	2899.73 ft	-17.08 ft	12.15 ft	-17.08 ft	0.81/100 ft	20.96 ft	144.58
3000.00 ft	1.29	267.77	100.00 ft	2999.71 ft	-17.41 ft	10.38 ft	-17.41 ft	0.61/100 ft	20.27 ft	149.20
3100.00 ft	1.64	276.02	100.00 ft	3099.68 ft	-17.31 ft	7.83 ft	-17.31 ft	0.41/100 ft	19.00 ft	155.65
3200.00 ft	1.26	301.56	100.00 ft	3199.65 ft	-16.58 ft	5.47 ft	-16.58 ft	0.74/100 ft	17.46 ft	161.73
3300.00 ft	0.81	296.11	100.00 ft	3299.63 ft	-15.69 ft	3.90 ft	-15.69 ft	0.46/100 ft	16.17 ft	166.04
3400.00 ft	0.92	303.52	100.00 ft	3399.62 ft	-14.94 ft	2.60 ft	-14.94 ft	0.16/100 ft	15.16 ft	170.14
3500.00 ft	0.69	302.36	100.00 ft	3499.61 ft	-14.17 ft	1.42 ft	-14.17 ft	0.23/100 ft	14.24 ft	174.29
3600.00 ft	0.62	305.69	100.00 ft	3599.60 ft	-13.53 ft	0.47 ft	-13.53 ft	0.08/100 ft	13.54 ft	178.02



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Survey Type: Memory  
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Instrument Number: GP1-1000  
North Reference: True North  
Survey Engineer: Nathan Proffitt

Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
3700.00 ft	1.58	279.11	100.00 ft	3699.59 ft	-13.00 ft	-1.33 ft	-13.00 ft	1.06/100 ft	13.07 ft	185.85
3800.00 ft	0.56	306.54	100.00 ft	3799.57 ft	-12.49 ft	-3.09 ft	-12.49 ft	1.11/100 ft	12.86 ft	193.89
3900.00 ft	2.31	246.26	100.00 ft	3899.54 ft	-13.00 ft	-5.33 ft	-13.00 ft	2.09/100 ft	14.05 ft	202.27
4000.00 ft	2.39	250.70	100.00 ft	3999.45 ft	-14.50 ft	-9.13 ft	-14.50 ft	0.20/100 ft	17.14 ft	212.20
4100.00 ft	1.60	230.52	100.00 ft	4099.39 ft	-16.08 ft	-12.18 ft	-16.08 ft	1.04/100 ft	20.17 ft	217.14
4200.00 ft	2.54	248.22	100.00 ft	4199.33 ft	-17.79 ft	-15.31 ft	-17.79 ft	1.12/100 ft	23.47 ft	220.72
4300.00 ft	2.88	233.70	100.00 ft	4299.22 ft	-20.09 ft	-19.39 ft	-20.09 ft	0.76/100 ft	27.92 ft	223.97
4400.00 ft	2.64	212.91	100.00 ft	4399.10 ft	-23.52 ft	-22.66 ft	-23.52 ft	1.02/100 ft	32.66 ft	223.94
4500.00 ft	2.01	198.03	100.00 ft	4499.02 ft	-27.12 ft	-24.46 ft	-27.12 ft	0.87/100 ft	36.52 ft	222.05
4600.00 ft	0.93	176.84	100.00 ft	4598.99 ft	-29.60 ft	-24.96 ft	-29.60 ft	1.19/100 ft	38.71 ft	220.14
4700.00 ft	0.43	177.26	100.00 ft	4698.98 ft	-30.78 ft	-24.89 ft	-30.78 ft	0.50/100 ft	39.59 ft	218.96
4800.00 ft	0.52	134.71	100.00 ft	4798.98 ft	-31.47 ft	-24.55 ft	-31.47 ft	0.35/100 ft	39.92 ft	217.96
4900.00 ft	0.65	99.78	100.00 ft	4898.97 ft	-31.88 ft	-23.67 ft	-31.88 ft	0.38/100 ft	39.71 ft	216.59
5000.00 ft	1.00	157.39	100.00 ft	4998.96 ft	-32.79 ft	-22.77 ft	-32.79 ft	0.86/100 ft	39.92 ft	214.78
5100.00 ft	0.63	74.36	100.00 ft	5098.95 ft	-33.45 ft	-21.90 ft	-33.45 ft	1.12/100 ft	39.98 ft	213.22
5200.00 ft	0.75	88.57	100.00 ft	5198.95 ft	-33.29 ft	-20.72 ft	-33.29 ft	0.21/100 ft	39.21 ft	211.90
5300.00 ft	0.77	108.49	100.00 ft	5298.94 ft	-33.48 ft	-19.43 ft	-33.48 ft	0.26/100 ft	38.71 ft	210.13
5400.00 ft	0.91	77.27	100.00 ft	5398.93 ft	-33.52 ft	-18.02 ft	-33.52 ft	0.47/100 ft	38.06 ft	208.27
5500.00 ft	0.87	61.34	100.00 ft	5498.92 ft	-32.99 ft	-16.59 ft	-32.99 ft	0.25/100 ft	36.92 ft	206.70
5600.00 ft	0.78	12.14	100.00 ft	5598.91 ft	-31.96 ft	-15.78 ft	-31.96 ft	0.69/100 ft	35.64 ft	206.29
5700.00 ft	0.84	356.77	100.00 ft	5698.90 ft	-30.56 ft	-15.68 ft	-30.56 ft	0.22/100 ft	34.35 ft	207.16
5800.00 ft	1.34	328.95	100.00 ft	5798.88 ft	-28.83 ft	-16.33 ft	-28.83 ft	0.71/100 ft	33.13 ft	209.52



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Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
5900.00 ft	1.74	323.25	100.00 ft	5898.84 ft	-26.61 ft	-17.84 ft	-26.61 ft	0.43/100 ft	32.04 ft	213.83
6000.00 ft	1.21	332.54	100.00 ft	5998.81 ft	-24.46 ft	-19.23 ft	-24.46 ft	0.58/100 ft	31.12 ft	218.17
6100.00 ft	0.95	302.43	100.00 ft	6098.79 ft	-23.08 ft	-20.42 ft	-23.08 ft	0.61/100 ft	30.82 ft	221.49
6200.00 ft	0.60	284.05	100.00 ft	6198.78 ft	-22.51 ft	-21.63 ft	-22.51 ft	0.42/100 ft	31.22 ft	223.85
6300.00 ft	0.83	332.02	100.00 ft	6298.78 ft	-21.74 ft	-22.48 ft	-21.74 ft	0.62/100 ft	31.27 ft	225.95