



SUMMIT
OILFIELD SERVICES, INC

Company: Bonanza Creek
Lease/Well: DOW 23-28
County/State: Weld/CO

Job Number: 7094-0512320593
Date: 1-10-18
Survey Type: Memory
Declination: 9.41

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	Indin	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	0.37	120.30	100.00 ft	100.00 ft	-0.16 ft	0.28 ft	-0.16 ft	0.37/100 ft	0.32 ft	120.30
200.00 ft	0.49	55.24	100.00 ft	200.00 ft	-0.08 ft	0.91 ft	-0.08 ft	0.47/100 ft	0.91 ft	95.18
300.00 ft	0.61	7.55	100.00 ft	299.99 ft	0.68 ft	1.33 ft	0.68 ft	0.45/100 ft	1.49 ft	62.68
400.00 ft	0.41	355.62	100.00 ft	399.99 ft	1.57 ft	1.37 ft	1.57 ft	0.22/100 ft	2.08 ft	41.12
500.00 ft	0.81	47.75	100.00 ft	499.98 ft	2.40 ft	1.86 ft	2.40 ft	0.64/100 ft	3.03 ft	37.81
600.00 ft	0.81	49.82	100.00 ft	599.97 ft	3.32 ft	2.92 ft	3.32 ft	0.03/100 ft	4.42 ft	41.28
700.00 ft	0.67	29.10	100.00 ft	699.97 ft	4.29 ft	3.74 ft	4.29 ft	0.30/100 ft	5.69 ft	41.09
800.00 ft	0.78	48.65	100.00 ft	799.96 ft	5.25 ft	4.54 ft	5.25 ft	0.27/100 ft	6.94 ft	40.82
900.00 ft	0.72	56.69	100.00 ft	899.95 ft	6.05 ft	5.57 ft	6.05 ft	0.12/100 ft	8.22 ft	42.65
1000.00 ft	0.46	343.70	100.00 ft	999.95 ft	6.78 ft	5.98 ft	6.78 ft	0.73/100 ft	9.04 ft	41.41
1100.00 ft	0.48	129.05	100.00 ft	1099.94 ft	6.90 ft	6.19 ft	6.90 ft	0.91/100 ft	9.27 ft	41.91
1200.00 ft	0.54	359.19	100.00 ft	1199.94 ft	7.10 ft	6.51 ft	7.10 ft	0.93/100 ft	9.64 ft	42.53
1300.00 ft	0.28	250.96	100.00 ft	1299.94 ft	7.49 ft	6.27 ft	7.49 ft	0.68/100 ft	9.77 ft	39.95
1400.00 ft	0.56	84.66	100.00 ft	1399.94 ft	7.45 ft	6.52 ft	7.45 ft	0.84/100 ft	9.91 ft	41.19



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Declination: 9.41

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	0.60	344.00	100.00 ft	1499.94 ft	8.00 ft	6.86 ft	8.00 ft	0.89/100 ft	10.54 ft	40.62
1600.00 ft	0.35	162.17	100.00 ft	1599.93 ft	8.21 ft	6.81 ft	8.21 ft	0.95/100 ft	10.67 ft	39.68
1700.00 ft	0.56	326.31	100.00 ft	1699.93 ft	8.33 ft	6.64 ft	8.33 ft	0.91/100 ft	10.65 ft	38.55
1800.00 ft	0.37	142.20	100.00 ft	1799.93 ft	8.48 ft	6.56 ft	8.48 ft	0.93/100 ft	10.72 ft	37.72
1900.00 ft	0.48	93.32	100.00 ft	1899.93 ft	8.20 ft	7.18 ft	8.20 ft	0.37/100 ft	10.90 ft	41.19
2000.00 ft	0.53	318.85	100.00 ft	1999.93 ft	8.53 ft	7.30 ft	8.53 ft	0.93/100 ft	11.22 ft	40.55
2100.00 ft	0.43	115.61	100.00 ft	2099.93 ft	8.71 ft	7.33 ft	8.71 ft	0.94/100 ft	11.39 ft	40.07
2200.00 ft	0.65	28.81	100.00 ft	2199.92 ft	9.05 ft	7.95 ft	9.05 ft	0.76/100 ft	12.04 ft	41.27
2300.00 ft	0.28	195.15	100.00 ft	2299.92 ft	9.32 ft	8.16 ft	9.32 ft	0.93/100 ft	12.39 ft	41.19
2400.00 ft	0.62	31.33	100.00 ft	2399.92 ft	9.55 ft	8.38 ft	9.55 ft	0.89/100 ft	12.70 ft	41.26
2500.00 ft	0.44	143.02	100.00 ft	2499.92 ft	9.70 ft	8.89 ft	9.70 ft	0.88/100 ft	13.16 ft	42.49
2600.00 ft	0.54	94.41	100.00 ft	2599.91 ft	9.36 ft	9.59 ft	9.36 ft	0.41/100 ft	13.40 ft	45.70
2700.00 ft	0.40	302.77	100.00 ft	2699.91 ft	9.51 ft	9.77 ft	9.51 ft	0.91/100 ft	13.63 ft	45.77
2800.00 ft	0.45	119.90	100.00 ft	2799.91 ft	9.50 ft	9.82 ft	9.50 ft	0.85/100 ft	13.66 ft	45.94
2900.00 ft	0.39	101.04	100.00 ft	2899.91 ft	9.24 ft	10.50 ft	9.24 ft	0.15/100 ft	13.98 ft	48.65
3000.00 ft	0.41	300.38	100.00 ft	2999.91 ft	9.35 ft	10.53 ft	9.35 ft	0.79/100 ft	14.08 ft	48.37
3100.00 ft	0.57	257.40	100.00 ft	3099.91 ft	9.43 ft	9.73 ft	9.43 ft	0.39/100 ft	13.55 ft	45.92
3200.00 ft	0.29	341.86	100.00 ft	3199.90 ft	9.56 ft	9.17 ft	9.56 ft	0.61/100 ft	13.25 ft	43.80
3300.00 ft	0.64	151.41	100.00 ft	3299.90 ft	9.32 ft	9.36 ft	9.32 ft	0.93/100 ft	13.20 ft	45.11
3400.00 ft	0.57	123.21	100.00 ft	3399.90 ft	8.56 ft	10.04 ft	8.56 ft	0.30/100 ft	13.19 ft	49.55
3500.00 ft	0.77	135.36	100.00 ft	3499.89 ft	7.81 ft	10.93 ft	7.81 ft	0.24/100 ft	13.43 ft	54.45
3600.00 ft	0.18	230.63	100.00 ft	3599.89 ft	7.23 ft	11.28 ft	7.23 ft	0.80/100 ft	13.40 ft	57.33



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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	0.97	132.79	100.00 ft	3699.88 ft	6.56 ft	11.78 ft	6.56 ft	1.01/100 ft	13.48 ft	60.88
3800.00 ft	0.37	163.62	100.00 ft	3799.87 ft	5.68 ft	12.49 ft	5.68 ft	0.68/100 ft	13.72 ft	65.55
3900.00 ft	1.17	88.61	100.00 ft	3899.87 ft	5.40 ft	13.60 ft	5.40 ft	1.13/100 ft	14.63 ft	68.36
4000.00 ft	0.67	127.08	100.00 ft	3999.85 ft	5.07 ft	15.09 ft	5.07 ft	0.77/100 ft	15.91 ft	71.42
4100.00 ft	1.11	75.87	100.00 ft	4099.84 ft	4.96 ft	16.49 ft	4.96 ft	0.87/100 ft	17.22 ft	73.27
4200.00 ft	0.59	95.95	100.00 ft	4199.83 ft	5.14 ft	17.95 ft	5.14 ft	0.59/100 ft	18.67 ft	74.02
4300.00 ft	1.41	69.85	100.00 ft	4299.82 ft	5.51 ft	19.62 ft	5.51 ft	0.91/100 ft	20.38 ft	74.31
4400.00 ft	0.75	93.74	100.00 ft	4399.80 ft	5.89 ft	21.42 ft	5.89 ft	0.78/100 ft	22.21 ft	74.63
4500.00 ft	1.05	56.88	100.00 ft	4499.79 ft	6.35 ft	22.84 ft	6.35 ft	0.64/100 ft	23.70 ft	74.47
4600.00 ft	1.17	104.91	100.00 ft	4599.77 ft	6.58 ft	24.59 ft	6.58 ft	0.91/100 ft	25.46 ft	75.01
4700.00 ft	1.32	81.98	100.00 ft	4699.75 ft	6.48 ft	26.72 ft	6.48 ft	0.51/100 ft	27.49 ft	76.37
4800.00 ft	0.19	98.73	100.00 ft	4799.74 ft	6.61 ft	28.02 ft	6.61 ft	1.13/100 ft	28.79 ft	76.72
4900.00 ft	0.62	91.64	100.00 ft	4899.73 ft	6.57 ft	28.73 ft	6.57 ft	0.43/100 ft	29.47 ft	77.11
5000.00 ft	0.15	59.69	100.00 ft	4999.73 ft	6.62 ft	29.39 ft	6.62 ft	0.50/100 ft	30.12 ft	77.30
5100.00 ft	0.36	137.27	100.00 ft	5099.73 ft	6.46 ft	29.71 ft	6.46 ft	0.36/100 ft	30.41 ft	77.74
5200.00 ft	0.82	171.55	100.00 ft	5199.73 ft	5.52 ft	30.03 ft	5.52 ft	0.56/100 ft	30.53 ft	79.58
5300.00 ft	0.90	181.39	100.00 ft	5299.71 ft	4.02 ft	30.12 ft	4.02 ft	0.17/100 ft	30.38 ft	82.39
5400.00 ft	0.65	233.96	100.00 ft	5399.71 ft	2.90 ft	29.64 ft	2.90 ft	0.73/100 ft	29.78 ft	84.42
5500.00 ft	0.65	148.32	100.00 ft	5499.70 ft	2.08 ft	29.47 ft	2.08 ft	0.89/100 ft	29.55 ft	85.96
5600.00 ft	0.57	141.89	100.00 ft	5599.70 ft	1.21 ft	30.07 ft	1.21 ft	0.11/100 ft	30.10 ft	87.70
5700.00 ft	0.91	196.37	100.00 ft	5699.69 ft	0.06 ft	30.16 ft	0.06 ft	0.74/100 ft	30.16 ft	89.88
5800.00 ft	0.48	258.09	100.00 ft	5799.68 ft	-0.78 ft	29.52 ft	-0.78 ft	0.80/100 ft	29.53 ft	91.52



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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	0.56	132.80	100.00 ft	5899.68 ft	-1.20 ft	29.46 ft	-1.20 ft	0.93/100 ft	29.49 ft	92.33
6000.00 ft	0.44	298.17	100.00 ft	5999.68 ft	-1.35 ft	29.48 ft	-1.35 ft	0.99/100 ft	29.51 ft	92.62
6100.00 ft	0.50	90.96	100.00 ft	6099.68 ft	-1.18 ft	29.59 ft	-1.18 ft	0.91/100 ft	29.61 ft	92.28
6200.00 ft	0.62	175.87	100.00 ft	6199.67 ft	-1.73 ft	30.06 ft	-1.73 ft	0.77/100 ft	30.11 ft	93.29
6300.00 ft	0.40	219.77	100.00 ft	6299.67 ft	-2.54 ft	29.88 ft	-2.54 ft	0.43/100 ft	29.99 ft	94.85