



K P KAUFFMAN CO.

# SURVEY REPORT

ROBERT G BURGE #2

FMC WIRELINE

1/14/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER  
PROJECT  
FIELD

K P Kauffman Co.  
Robert G Burge #2  
Spindle

SDI JOB NO.  
SDI DISTRICT  
SDI KIT/UNIT

245381  
Casper

### SITE INFORMATION

Site Name  
Lat/Long  
Northing  
Easting

Robert G Burge #2  
40.074499° N, 104.85059° W

Section  
Township  
Range

2  
1N  
67W

### MAP INFORMATION

North Reference  
Grid Correction  
System  
Datum  
Map Zone

True North  
US State Plane 1927  
North American Datum 1927 (Clarke 1866)  
Colorado North: 0501



### WELL INFORMATION

Lat/Long  
Northing  
Easting  
UWI

40.07499° N, 104.85059° W  
05-123-09211

### DEPTH AND ELEVATION REFERENCE

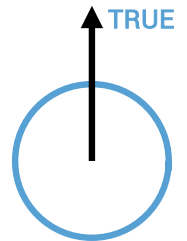
Ground Level  
Reference Datum  
Reference Height  
Reference Elevation

4953 ft above Mean Sea Level  
ground  
0 ft above G.L.  
4953 ft

### VERTICAL SECTION REFERENCE

+N/-S  
+E/-W  
Proposal Direction  
Calculation Method

0 ft  
0 ft  
Minimum Curvature



### LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity

999.041 mG [computed]

### WELL NOTES

Keeper Gyro Survey ran in 4 1/2 inch casing. Tool zeroed on ground.

### OPERATORS

J. Jackson

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
25.00	0.02	135.88	25.00	-0.01	0.00	0.00	0.09	0.01	135.88
50.00	0.05	135.88	50.00	-0.02	-0.01	0.01	0.09	0.02	135.88
75.00	0.07	135.88	75.00	-0.05	-0.03	0.03	0.09	0.05	135.88
100.00	0.09	135.88	100.00	-0.08	-0.06	0.06	0.09	0.08	135.88
125.00	0.12	135.88	125.00	-0.13	-0.09	0.09	0.09	0.13	135.88
150.00	0.20	113.65	150.00	-0.19	-0.13	0.15	0.41	0.19	131.01
175.00	0.05	31.67	175.00	-0.24	-0.14	0.19	0.80	0.24	125.02
200.00	0.12	0.13	200.00	-0.22	-0.10	0.20	0.30	0.22	116.63
225.00	0.11	353.63	225.00	-0.19	-0.05	0.20	0.05	0.20	104.18
250.00	0.16	347.43	250.00	-0.15	0.01	0.19	0.17	0.19	87.48
275.00	0.18	337.59	275.00	-0.09	0.08	0.16	0.16	0.18	64.53
300.00	0.28	327.19	300.00	0.00	0.17	0.12	0.42	0.20	34.92
325.00	0.36	324.61	325.00	0.13	0.28	0.04	0.34	0.28	7.48
350.00	0.38	324.00	350.00	0.29	0.41	-0.06	0.08	0.42	352.03
375.00	0.41	319.54	375.00	0.45	0.55	-0.16	0.16	0.57	343.31
400.00	0.37	312.88	400.00	0.62	0.67	-0.28	0.23	0.73	337.27
425.00	0.30	330.25	425.00	0.75	0.78	-0.37	0.49	0.87	334.55
450.00	0.23	0.56	450.00	0.84	0.89	-0.40	0.61	0.98	335.55
475.00	0.23	23.55	475.00	0.88	0.98	-0.38	0.37	1.06	338.72
500.00	0.22	28.57	500.00	0.90	1.07	-0.34	0.09	1.12	342.42
525.00	0.24	53.95	525.00	0.88	1.15	-0.27	0.41	1.18	346.51
550.00	0.20	56.05	550.00	0.85	1.20	-0.20	0.15	1.22	350.68
575.00	0.16	74.85	575.00	0.81	1.23	-0.13	0.27	1.24	354.17
600.00	0.13	97.46	600.00	0.77	1.24	-0.06	0.27	1.24	357.06
625.00	0.12	96.08	625.00	0.72	1.23	-0.01	0.03	1.23	359.54
650.00	0.13	112.74	650.00	0.67	1.22	0.04	0.15	1.22	2.02
675.00	0.18	107.90	675.00	0.60	1.20	0.11	0.18	1.20	5.07
700.00	0.19	119.37	700.00	0.52	1.16	0.18	0.15	1.18	8.70
725.00	0.23	146.78	725.00	0.44	1.10	0.24	0.42	1.13	12.33
750.00	0.23	209.78	749.99	0.39	1.02	0.24	0.95	1.05	13.45
775.00	0.32	232.76	774.99	0.40	0.93	0.16	0.57	0.95	9.95

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
800.00	0.33	230.27	799.99	0.44	0.85	0.05	0.08	0.85	3.57
825.00	0.31	224.03	824.99	0.47	0.75	-0.05	0.17	0.75	356.24
850.00	0.29	209.88	849.99	0.48	0.65	-0.13	0.30	0.66	348.84
875.00	0.27	211.72	874.99	0.47	0.54	-0.19	0.10	0.57	340.58
900.00	0.27	207.75	899.99	0.46	0.44	-0.25	0.08	0.51	330.50
925.00	0.30	196.06	924.99	0.43	0.32	-0.29	0.28	0.44	317.84
950.00	0.30	200.98	949.99	0.39	0.20	-0.34	0.10	0.39	300.64
975.00	0.31	203.42	974.99	0.36	0.08	-0.39	0.05	0.39	281.11
1000.00	0.33	193.94	999.99	0.32	-0.06	-0.43	0.23	0.43	262.62
1025.00	0.38	200.21	1024.99	0.27	-0.20	-0.48	0.24	0.52	246.86
1050.00	0.41	204.12	1049.99	0.23	-0.36	-0.54	0.17	0.65	236.15
1075.00	0.42	202.97	1074.99	0.20	-0.53	-0.61	0.05	0.81	229.21
1100.00	0.50	208.26	1099.99	0.16	-0.71	-0.70	0.37	1.00	224.62
1125.00	0.52	209.62	1124.99	0.14	-0.91	-0.81	0.07	1.22	221.79
1150.00	0.52	208.14	1149.99	0.12	-1.11	-0.92	0.06	1.44	219.77
1175.00	0.63	209.77	1174.99	0.09	-1.32	-1.04	0.41	1.69	218.18
1200.00	0.62	204.13	1199.98	0.05	-1.57	-1.17	0.25	1.95	216.62
1225.00	0.66	213.09	1224.98	0.02	-1.81	-1.30	0.42	2.23	215.64
1250.00	0.65	210.53	1249.98	0.00	-2.05	-1.45	0.12	2.51	215.21
1275.00	0.64	216.26	1274.98	-0.01	-2.29	-1.60	0.26	2.80	215.02
1300.00	0.65	215.51	1299.98	0.00	-2.52	-1.77	0.05	3.08	215.10
1325.00	0.71	207.65	1324.98	-0.02	-2.77	-1.92	0.43	3.37	214.78
1350.00	0.74	215.13	1349.97	-0.04	-3.04	-2.09	0.40	3.69	214.50
1375.00	0.74	207.35	1374.97	-0.07	-3.32	-2.26	0.40	4.01	214.23
1400.00	0.74	209.51	1399.97	-0.10	-3.60	-2.41	0.11	4.33	213.80
1425.00	0.76	209.67	1424.97	-0.13	-3.88	-2.57	0.07	4.66	213.51
1450.00	0.75	208.81	1449.97	-0.17	-4.17	-2.73	0.05	4.99	213.23
1475.00	0.78	206.21	1474.96	-0.21	-4.47	-2.89	0.17	5.32	212.87
1500.00	0.74	208.46	1499.96	-0.26	-4.76	-3.04	0.17	5.65	212.54
1525.00	0.79	209.93	1524.96	-0.29	-5.05	-3.20	0.18	5.98	212.36
1550.00	0.74	212.54	1549.96	-0.32	-5.34	-3.37	0.24	6.31	212.30
1575.00	0.69	208.83	1574.95	-0.34	-5.60	-3.53	0.28	6.62	212.22

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
1600.00	0.72	211.56	1599.95	-0.37	-5.87	-3.69	0.18	6.93	212.14
1625.00	0.75	208.71	1624.95	-0.39	-6.14	-3.85	0.19	7.25	212.05
1650.00	0.76	212.11	1649.95	-0.42	-6.43	-4.01	0.19	7.58	211.98
1675.00	0.76	210.32	1674.95	-0.44	-6.71	-4.18	0.10	7.91	211.94
1700.00	0.77	215.43	1699.94	-0.46	-6.99	-4.37	0.27	8.24	211.98
1725.00	0.74	201.75	1724.94	-0.49	-7.28	-4.52	0.72	8.57	211.86
1750.00	0.68	205.16	1749.94	-0.56	-7.56	-4.64	0.31	8.87	211.56
1775.00	0.69	210.51	1774.94	-0.60	-7.82	-4.78	0.26	9.17	211.44
1800.00	0.69	209.51	1799.94	-0.62	-8.08	-4.93	0.05	9.47	211.40
1825.00	0.69	206.54	1824.93	-0.66	-8.35	-5.08	0.15	9.77	211.29
1850.00	0.69	214.29	1849.93	-0.69	-8.61	-5.23	0.37	10.07	211.26
1875.00	0.67	213.22	1874.93	-0.69	-8.86	-5.39	0.08	10.37	211.34
1900.00	0.65	215.64	1899.93	-0.70	-9.10	-5.56	0.14	10.66	211.42
1925.00	0.63	214.15	1924.93	-0.70	-9.32	-5.72	0.12	10.94	211.51
1950.00	0.65	221.77	1949.93	-0.68	-9.54	-5.89	0.36	11.21	211.67
1975.00	0.67	223.01	1974.92	-0.65	-9.76	-6.08	0.08	11.50	211.94
2000.00	0.60	220.93	1999.92	-0.61	-9.96	-6.27	0.30	11.77	212.17
2025.00	0.67	221.08	2024.92	-0.59	-10.17	-6.45	0.29	12.04	212.37
2050.00	0.73	224.34	2049.92	-0.55	-10.39	-6.66	0.31	12.34	212.63
2075.00	0.71	230.28	2074.92	-0.48	-10.61	-6.89	0.31	12.65	212.99
2100.00	0.70	204.99	2099.92	-0.47	-10.85	-7.07	1.24	12.95	213.10
2125.00	0.71	219.65	2124.91	-0.48	-11.10	-7.23	0.72	13.25	213.09
2150.00	0.53	207.37	2149.91	-0.48	-11.32	-7.39	0.87	13.52	213.11
2175.00	0.38	201.10	2174.91	-0.52	-11.50	-7.47	0.66	13.72	212.99
2200.00	0.40	189.78	2199.91	-0.58	-11.67	-7.51	0.32	13.88	212.78
2225.00	0.31	177.24	2224.91	-0.66	-11.82	-7.53	0.47	14.01	212.48
2250.00	0.30	153.33	2249.91	-0.76	-11.95	-7.49	0.51	14.10	212.10
2275.00	0.28	128.35	2274.91	-0.87	-12.04	-7.42	0.51	14.14	211.62
2300.00	0.30	121.17	2299.91	-1.00	-12.11	-7.31	0.18	14.15	211.11
2325.00	0.34	104.98	2324.91	-1.14	-12.17	-7.18	0.40	14.13	210.55
2350.00	0.38	84.85	2349.91	-1.27	-12.18	-7.03	0.52	14.06	209.98
2375.00	0.37	75.21	2374.91	-1.39	-12.15	-6.87	0.25	13.96	209.47

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
2400.00	0.31	56.69	2399.91	-1.46	-12.09	-6.73	0.50	13.84	209.10
2425.00	0.46	56.91	2424.91	-1.52	-12.00	-6.59	0.59	13.70	208.78
2450.00	0.25	66.10	2449.91	-1.59	-11.93	-6.46	0.86	13.57	208.44
2475.00	0.15	66.46	2474.91	-1.63	-11.89	-6.38	0.38	13.50	208.22
2500.00	0.15	74.67	2499.91	-1.67	-11.87	-6.32	0.09	13.45	208.03
2525.00	0.26	97.15	2524.91	-1.74	-11.87	-6.23	0.53	13.41	207.70
2550.00	0.28	104.42	2549.91	-1.85	-11.89	-6.11	0.17	13.37	207.21
2575.00	0.26	101.82	2574.91	-1.96	-11.92	-6.00	0.12	13.34	206.72
2600.00	0.46	94.18	2599.91	-2.10	-11.94	-5.85	0.83	13.29	206.09
2625.00	0.41	88.82	2624.90	-2.26	-11.94	-5.66	0.25	13.21	205.34
2650.00	0.58	78.29	2649.90	-2.41	-11.92	-5.44	0.78	13.10	204.54
2675.00	0.60	69.20	2674.90	-2.58	-11.84	-5.19	0.38	12.93	203.68
2700.00	0.54	68.04	2699.90	-2.71	-11.75	-4.96	0.27	12.76	202.89
2725.00	0.63	81.49	2724.90	-2.88	-11.69	-4.72	0.65	12.60	201.98
2750.00	0.61	85.30	2749.90	-3.08	-11.66	-4.45	0.18	12.48	200.89
2775.00	0.64	87.49	2774.90	-3.29	-11.64	-4.18	0.16	12.37	199.74
2800.00	0.69	85.45	2799.90	-3.52	-11.62	-3.89	0.22	12.25	198.49
2825.00	0.86	92.46	2824.89	-3.79	-11.62	-3.55	0.77	12.15	196.98
2850.00	0.81	86.89	2849.89	-4.09	-11.62	-3.18	0.38	12.04	195.33
2875.00	0.78	79.11	2874.89	-4.35	-11.57	-2.84	0.45	11.92	193.78
2900.00	0.73	80.71	2899.89	-4.58	-11.52	-2.51	0.23	11.79	192.32
2925.00	0.67	69.20	2924.88	-4.77	-11.44	-2.22	0.60	11.65	190.99
2950.00	0.56	83.66	2949.88	-4.95	-11.37	-1.96	0.76	11.54	189.79
2975.00	0.46	77.32	2974.88	-5.11	-11.34	-1.74	0.45	11.47	188.73
3000.00	0.46	89.43	2999.88	-5.26	-11.31	-1.54	0.39	11.42	187.76
3025.00	0.51	90.54	3024.88	-5.43	-11.31	-1.33	0.18	11.39	186.71
3050.00	0.39	61.84	3049.88	-5.56	-11.27	-1.15	0.99	11.33	185.80
3075.00	0.61	74.96	3074.88	-5.68	-11.20	-0.94	0.97	11.24	184.80
3100.00	0.48	36.79	3099.88	-5.77	-11.08	-0.75	1.51	11.11	183.87
3125.00	0.34	44.88	3124.88	-5.79	-10.94	-0.63	0.63	10.96	183.31
3150.00	0.23	26.85	3149.88	-5.79	-10.85	-0.56	0.54	10.86	182.95
3175.00	0.28	46.52	3174.88	-5.79	-10.76	-0.49	0.41	10.77	182.61



MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3200.00	0.20	343.63	3199.88	-5.77	-10.67	-0.46	1.05	10.68	182.46
3225.00	0.24	66.56	3224.88	-5.77	-10.61	-0.42	1.15	10.62	182.28
3250.00	0.42	39.24	3249.88	-5.80	-10.52	-0.32	0.95	10.53	181.72
3275.00	0.14	18.22	3274.87	-5.80	-10.42	-0.25	1.19	10.42	181.37
3300.00	0.15	28.43	3299.87	-5.79	-10.36	-0.22	0.11	10.37	181.24
3325.00	0.25	13.10	3324.87	-5.76	-10.28	-0.20	0.46	10.28	181.09
3350.00	0.14	11.10	3349.87	-5.73	-10.20	-0.18	0.42	10.20	181.00
3375.00	0.14	40.42	3374.87	-5.72	-10.14	-0.15	0.29	10.15	180.86
3400.00	0.25	1.33	3399.87	-5.69	-10.07	-0.13	0.65	10.07	180.74
3425.00	0.26	18.66	3424.87	-5.65	-9.96	-0.11	0.31	9.96	180.64
3450.00	0.37	314.42	3449.87	-5.55	-9.85	-0.15	1.41	9.85	180.88
3475.00	0.28	309.85	3474.87	-5.41	-9.75	-0.26	0.39	9.75	181.50
3500.00	0.16	303.50	3499.87	-5.31	-9.69	-0.33	0.51	9.70	181.96
3525.00	0.13	35.67	3524.87	-5.28	-9.65	-0.34	0.83	9.66	182.03
3550.00	0.18	342.71	3549.87	-5.25	-9.59	-0.34	0.59	9.60	182.01
3575.00	0.42	337.34	3574.87	-5.14	-9.47	-0.38	0.97	9.47	182.33
3600.00	0.40	334.94	3599.87	-4.98	-9.30	-0.46	0.11	9.31	182.82
3625.00	0.15	4.89	3624.87	-4.89	-9.19	-0.49	1.14	9.20	183.06
3650.00	0.40	311.51	3649.87	-4.79	-9.10	-0.55	1.33	9.12	183.49
3675.00	0.22	311.55	3674.87	-4.65	-9.01	-0.66	0.73	9.04	184.16
3700.00	0.31	44.84	3699.87	-4.62	-8.93	-0.64	1.55	8.96	184.12
3725.00	0.40	6.80	3724.87	-4.59	-8.80	-0.59	1.00	8.82	183.81
3750.00	0.18	279.62	3749.87	-4.51	-8.70	-0.61	1.73	8.72	184.03
3775.00	0.17	329.26	3774.87	-4.44	-8.66	-0.67	0.58	8.69	184.42
3800.00	0.16	77.14	3799.87	-4.43	-8.62	-0.65	1.08	8.65	184.34
3825.00	0.07	97.47	3824.87	-4.47	-8.62	-0.60	0.40	8.64	184.01
3850.00	0.39	2.54	3849.87	-4.44	-8.54	-0.59	1.59	8.56	183.93
3875.00	0.32	346.82	3874.87	-4.34	-8.38	-0.60	0.46	8.41	184.08
3900.00	0.07	51.70	3899.87	-4.29	-8.31	-0.60	1.20	8.33	184.15
3925.00	0.43	104.15	3924.87	-4.38	-8.32	-0.50	1.56	8.33	183.44
3950.00	0.45	130.74	3949.87	-4.57	-8.41	-0.34	0.81	8.41	182.28
3975.00	0.32	252.20	3974.87	-4.62	-8.49	-0.33	2.68	8.50	182.21

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
4000.00	0.64	324.59	3999.87	-4.45	-8.40	-0.48	2.49	8.41	183.24
4025.00	0.70	343.69	4024.87	-4.20	-8.14	-0.60	0.91	8.16	184.21
4050.00	0.24	336.27	4049.86	-4.03	-7.94	-0.66	1.82	7.97	184.77
4075.00	0.23	355.63	4074.86	-3.96	-7.85	-0.69	0.32	7.88	185.02
4100.00	0.49	330.87	4099.86	-3.83	-7.70	-0.74	1.18	7.74	185.52
4125.00	0.47	341.63	4124.86	-3.65	-7.51	-0.83	0.37	7.55	186.30
4150.00	0.32	349.49	4149.86	-3.51	-7.34	-0.87	0.66	7.39	186.79
4175.00	0.33	358.00	4174.86	-3.42	-7.20	-0.89	0.20	7.26	187.04
4200.00	0.39	12.46	4199.86	-3.35	-7.05	-0.87	0.42	7.10	187.07
4225.00	0.48	348.28	4224.86	-3.24	-6.86	-0.88	0.82	6.92	187.28
4250.00	0.60	342.09	4249.86	-3.06	-6.64	-0.94	0.51	6.70	188.05
4275.00	0.54	342.64	4274.86	-2.86	-6.40	-1.01	0.23	6.48	189.00
4300.00	0.19	13.29	4299.86	-2.75	-6.25	-1.04	1.57	6.34	189.44
4325.00	0.36	17.82	4324.86	-2.71	-6.14	-1.01	0.71	6.22	189.31
4350.00	0.52	337.56	4349.86	-2.59	-5.96	-1.03	1.36	6.04	189.77
4375.00	0.62	333.64	4374.86	-2.38	-5.73	-1.13	0.41	5.84	191.15
4400.00	0.45	331.60	4399.85	-2.17	-5.52	-1.24	0.65	5.66	192.61
4425.00	0.71	340.26	4424.85	-1.95	-5.29	-1.34	1.10	5.45	194.18
4450.00	0.81	0.70	4449.85	-1.73	-4.96	-1.39	1.14	5.15	195.60
4475.00	0.97	356.39	4474.85	-1.49	-4.58	-1.40	0.71	4.79	196.98
4500.00	1.13	352.04	4499.84	-1.19	-4.12	-1.44	0.70	4.37	199.31
4525.00	1.20	351.05	4524.84	-0.84	-3.62	-1.52	0.30	3.93	202.77
4550.00	1.30	356.11	4549.83	-0.48	-3.08	-1.58	0.61	3.46	207.16
4575.00	1.56	356.97	4574.82	-0.09	-2.45	-1.62	1.03	2.94	213.38
4600.00	1.58	345.62	4599.82	0.38	-1.78	-1.72	1.25	2.48	224.03
4625.00	1.50	339.00	4624.81	0.92	-1.14	-1.92	0.78	2.24	239.34
4650.00	1.33	354.72	4649.80	1.38	-0.55	-2.07	1.68	2.14	255.21
4675.00	1.14	359.49	4674.79	1.71	-0.01	-2.10	0.86	2.10	269.81
4700.00	1.37	319.50	4699.79	2.14	0.47	-2.29	3.54	2.34	281.57
4725.00	1.19	338.16	4724.78	2.65	0.94	-2.58	1.80	2.75	289.93
4750.00	1.40	339.06	4749.78	3.12	1.46	-2.79	0.87	3.15	297.68
4775.00	1.17	332.88	4774.77	3.60	1.97	-3.01	1.09	3.60	303.23

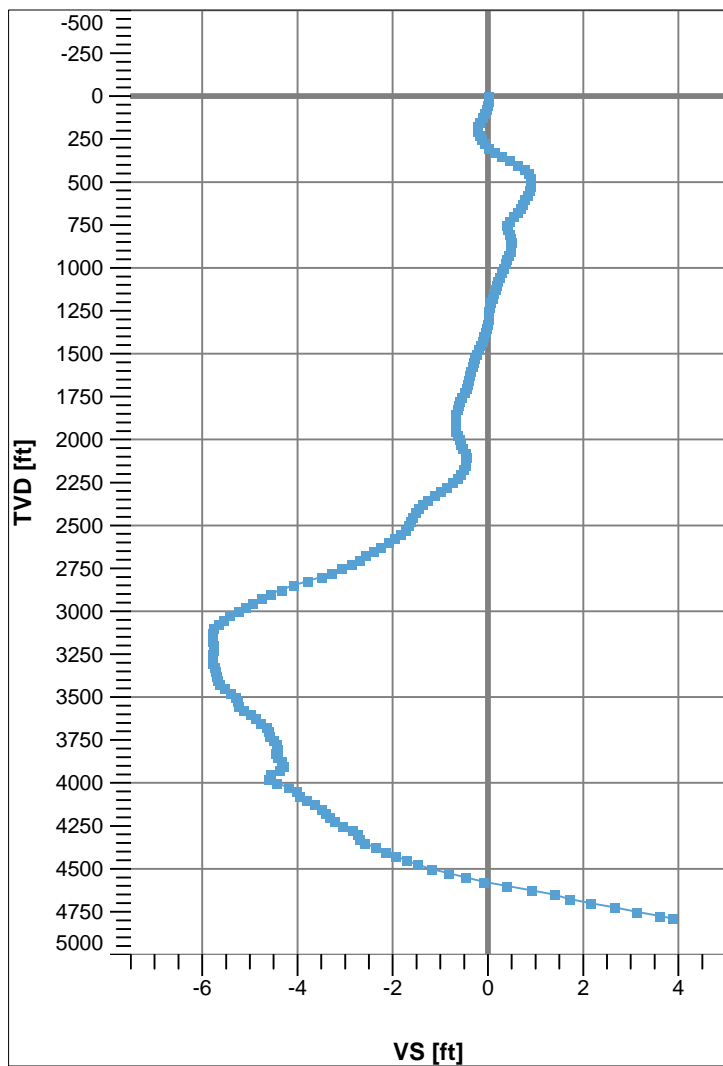


MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4790.37	1.04	325.71	4790.13	3.87	2.23	-3.16	1.22	3.87	305.17



Name : Keeper Gyro Survey Robert G Burge #2  
Generated : 1/19/2015 15:29:13 Mountain Standard Time

VS View



Plan View

