



Job Number: 0632-428-239

Company: KGH

Lease/Well: Federal 25-15

Location: Gilsonite Ridge

Rig Name: Elenburg #12

RKB: ☐

G.L. or M.S.L.: ☐

State/Country: Colorado

Declination: 11.87

Grid: ☐

File name: C:\DOCUME~1\JON\DESKTOP\428-239.SVY

Date/Time: 30-Jul-06 / 01:54

Curve Name: Federal 24-15

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 332.00
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
554.00	1.80	110.00	553.91	-2.98	8.18	-6.47	8.70	110.00	.32
596.00	1.50	108.80	595.89	-3.38	9.32	-7.36	9.91	109.93	.72
627.00	.90	87.70	626.88	-3.50	9.94	-7.76	10.54	109.39	2.37
657.00	.70	57.20	656.88	-3.39	10.33	-7.85	10.88	108.17	1.54
688.00	1.20	13.50	687.88	-2.97	10.57	-7.59	10.98	105.71	2.73
718.00	2.10	344.30	717.87	-2.14	10.49	-6.81	10.71	101.52	4.01
749.00	3.50	342.00	748.83	-.69	10.05	-5.33	10.07	93.94	4.53
776.00	4.40	338.20	775.76	1.05	9.41	-3.49	9.47	83.61	3.47
810.00	4.50	335.70	809.66	3.48	8.37	-.86	9.07	67.43	.64
840.00	4.70	336.40	839.56	5.68	7.40	1.54	9.33	52.49	.69
871.00	4.50	335.70	870.46	7.95	6.39	4.02	10.20	38.78	.67
901.00	4.60	335.40	900.37	10.12	5.40	6.40	11.47	28.11	.34
932.00	5.20	335.10	931.26	12.52	4.30	9.04	13.24	18.93	1.94
962.00	5.90	335.30	961.12	15.16	3.08	11.94	15.47	11.48	2.33
994.00	6.40	333.50	992.93	18.25	1.60	15.36	18.32	5.00	1.67
1056.00	6.90	333.40	1054.51	24.67	-1.61	22.54	24.72	356.26	.81
1086.00	6.90	334.40	1084.30	27.91	-3.20	26.14	28.09	353.46	.40
1117.00	7.60	334.20	1115.05	31.43	-4.90	30.05	31.81	351.15	2.26
1147.00	8.40	333.50	1144.76	35.18	-6.74	34.22	35.82	349.16	2.69
1178.00	8.70	332.00	1175.41	39.27	-8.85	38.83	40.26	347.30	1.21
1208.00	8.50	332.20	1205.07	43.24	-10.95	43.32	44.60	345.79	.67
1240.00	8.80	332.20	1236.71	47.50	-13.19	48.13	49.29	344.48	.94
1270.00	9.20	329.90	1266.34	51.60	-15.47	52.82	53.87	343.32	1.79
1303.00	9.20	329.90	1298.92	56.17	-18.11	58.09	59.01	342.13	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1333.00	9.20	329.40	1328.53	60.30	-20.53	62.89	63.71	341.20	.27
1365.00	9.10	330.00	1360.12	64.70	-23.10	67.97	68.70	340.35	.43
1396.00	9.40	327.90	1390.72	68.97	-25.67	72.95	73.59	339.58	1.46
1426.00	9.80	328.30	1420.30	73.21	-28.32	77.94	78.50	338.86	1.35
1456.00	10.00	327.70	1449.85	77.59	-31.05	83.08	83.57	338.19	.75
1488.00	10.10	329.10	1481.36	82.34	-33.98	88.66	89.08	337.58	.82
1519.00	9.90	330.30	1511.89	86.99	-36.69	94.03	94.41	337.13	.93
1550.00	9.80	329.50	1542.43	91.58	-39.35	99.33	99.68	336.75	.55
1612.00	10.20	329.50	1603.49	100.86	-44.82	110.09	110.36	336.04	.65
1673.00	10.30	330.30	1663.52	110.25	-50.26	120.94	121.16	335.49	.29
1736.00	10.30	329.10	1725.50	119.97	-55.94	132.19	132.37	335.00	.34
1797.00	10.10	328.20	1785.54	129.20	-61.56	142.97	143.11	334.52	.42
1858.00	9.90	329.10	1845.61	138.24	-67.07	153.55	153.65	334.12	.42
1920.00	9.70	332.30	1906.71	147.44	-72.24	164.10	164.19	333.90	.94
1982.00	10.00	332.50	1967.80	156.84	-77.15	174.70	174.79	333.81	.49
2044.00	9.60	333.80	2028.89	166.25	-81.92	185.25	185.34	333.77	.74
2104.00	10.20	333.50	2088.00	175.50	-86.50	195.56	195.66	333.76	1.00
2166.00	10.10	332.40	2149.03	185.23	-91.47	206.49	206.58	333.72	.35
2228.00	9.90	331.30	2210.08	194.72	-96.54	217.25	217.34	333.63	.45
2290.00	10.00	331.10	2271.15	204.11	-101.71	227.96	228.04	333.51	.17
2350.00	10.20	330.90	2330.22	213.31	-106.81	238.48	238.56	333.40	.34
2412.00	10.20	329.40	2391.24	222.83	-112.27	249.46	249.52	333.26	.43
2476.00	9.70	331.30	2454.28	232.44	-117.75	260.51	260.56	333.13	.93
2539.00	9.70	330.50	2516.38	241.71	-122.91	271.12	271.17	333.05	.21
2602.00	9.50	330.20	2578.50	250.84	-128.10	281.62	281.66	332.95	.33
2665.00	9.70	330.10	2640.61	259.96	-133.33	292.12	292.16	332.85	.32
2726.00	10.20	328.30	2700.70	269.01	-138.73	302.65	302.67	332.72	.97
2788.00	10.00	329.60	2761.74	278.32	-144.34	313.51	313.52	332.59	.49
2850.00	10.00	328.80	2822.79	287.57	-149.86	324.26	324.27	332.48	.22
2911.00	9.90	329.80	2882.88	296.63	-155.24	334.79	334.80	332.38	.33
2975.00	9.50	331.00	2945.96	306.01	-160.56	345.57	345.57	332.31	.70
3037.00	9.10	331.80	3007.15	314.80	-165.36	355.59	355.59	332.29	.68
3099.00	8.20	332.30	3068.44	323.04	-169.73	364.91	364.91	332.28	1.46
3160.00	7.70	330.80	3128.85	330.46	-173.75	373.35	373.35	332.27	.89
3221.00	7.60	329.40	3189.31	337.50	-177.80	381.46	381.46	332.22	.35
3285.00	8.00	331.20	3252.72	345.04	-182.10	390.14	390.14	332.18	.73
3347.00	8.00	331.70	3314.12	352.62	-186.22	398.77	398.77	332.16	.11
3409.00	8.20	333.60	3375.50	360.38	-190.23	407.50	407.51	332.17	.54
3472.00	8.20	331.60	3437.85	368.36	-194.37	416.49	416.49	332.18	.45
3532.00	7.40	332.30	3497.30	375.54	-198.20	424.63	424.63	332.18	1.34
3598.00	6.90	330.50	3562.78	382.75	-202.13	432.84	432.85	332.16	.83
3656.00	6.90	330.80	3620.36	388.83	-205.54	439.81	439.81	332.14	.06
3716.00	7.00	327.10	3679.92	395.04	-209.29	447.06	447.06	332.09	.76
3778.00	7.60	328.30	3741.42	401.70	-213.49	454.91	454.91	332.01	1.00
3841.00	7.20	331.00	3803.90	408.70	-217.60	463.02	463.02	331.97	.84

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
3902.00	7.60	333.60	3864.39	415.66	-221.24	470.87	470.87	331.97	.86
3964.00	8.00	335.00	3925.81	423.24	-224.89	479.28	479.28	332.02	.71
4025.00	7.50	335.30	3986.26	430.70	-228.35	487.49	487.49	332.07	.82
4087.00	7.60	332.00	4047.72	438.00	-231.96	495.63	495.63	332.09	.72
4148.00	7.10	331.50	4108.22	444.88	-235.65	503.44	503.44	332.09	.83
4211.00	7.80	336.60	4170.69	452.22	-239.21	511.59	511.59	332.12	1.53
4273.00	7.60	332.50	4232.13	459.72	-242.77	519.88	519.89	332.16	.94
4334.00	7.00	326.00	4292.64	466.38	-246.72	527.61	527.62	332.12	1.67
4397.00	7.60	320.30	4355.13	472.77	-251.52	535.51	535.51	331.99	1.49
4460.00	8.70	319.00	4417.49	479.57	-257.31	544.23	544.24	331.78	1.77
4523.00	7.60	328.40	4479.85	486.71	-262.62	553.03	553.05	331.65	2.74
4583.00	7.90	332.20	4539.31	493.74	-266.62	561.12	561.13	331.63	.99
4646.00	7.90	332.80	4601.71	501.42	-270.62	569.78	569.79	331.64	.13
4708.00	7.40	339.90	4663.16	508.96	-273.94	577.99	578.00	331.71	1.72
4771.00	7.60	335.20	4725.62	516.55	-277.08	586.17	586.17	331.79	1.02
4834.00	7.50	327.70	4788.07	523.81	-281.03	594.43	594.43	331.79	1.57
4896.00	7.50	329.20	4849.54	530.71	-285.26	602.51	602.51	331.74	.32
4957.00	8.00	329.10	4909.99	537.77	-289.48	610.72	610.73	331.71	.82
5018.00	7.30	332.00	4970.44	544.83	-293.48	618.84	618.85	331.69	1.31
5081.00	7.50	331.00	5032.92	551.96	-297.35	626.95	626.96	331.69	.38
5098.00	7.50	331.00	5049.77	553.90	-298.43	629.17	629.18	331.69	.00
T.D.									
5158.00	7.50	329.10	5109.26	560.69	-302.34	637.00	637.01	331.67	.41