

Noble Energy

CO, Weld County (NAD 83 NZ)
Sec 8 Twn 4 N Rng 66 W
Five Rivers K08-67-1HN Original Hole
05-123-39475
H&P 330



A Schlumberger Company

Final Survey Report

29-Oct-2014

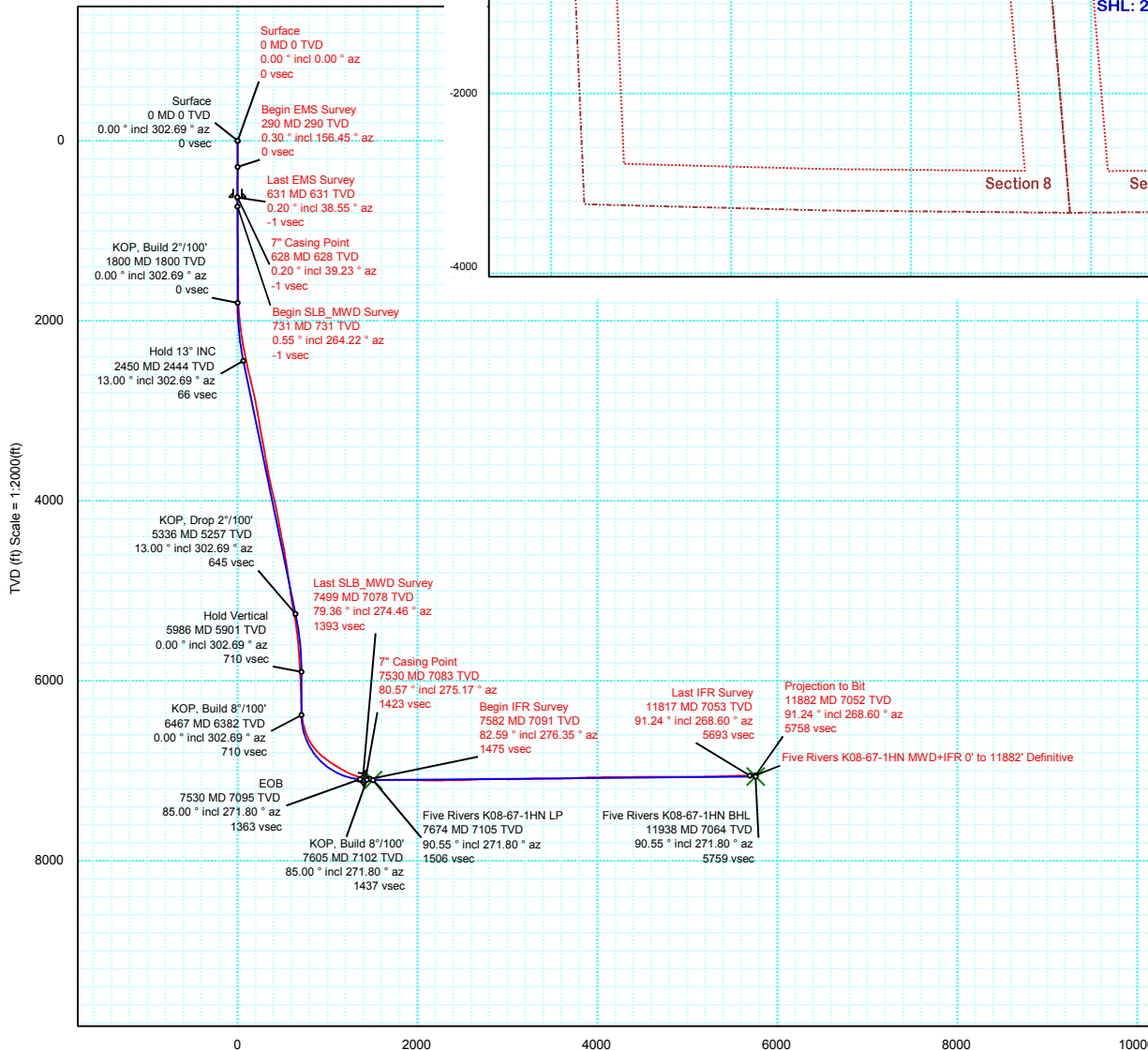
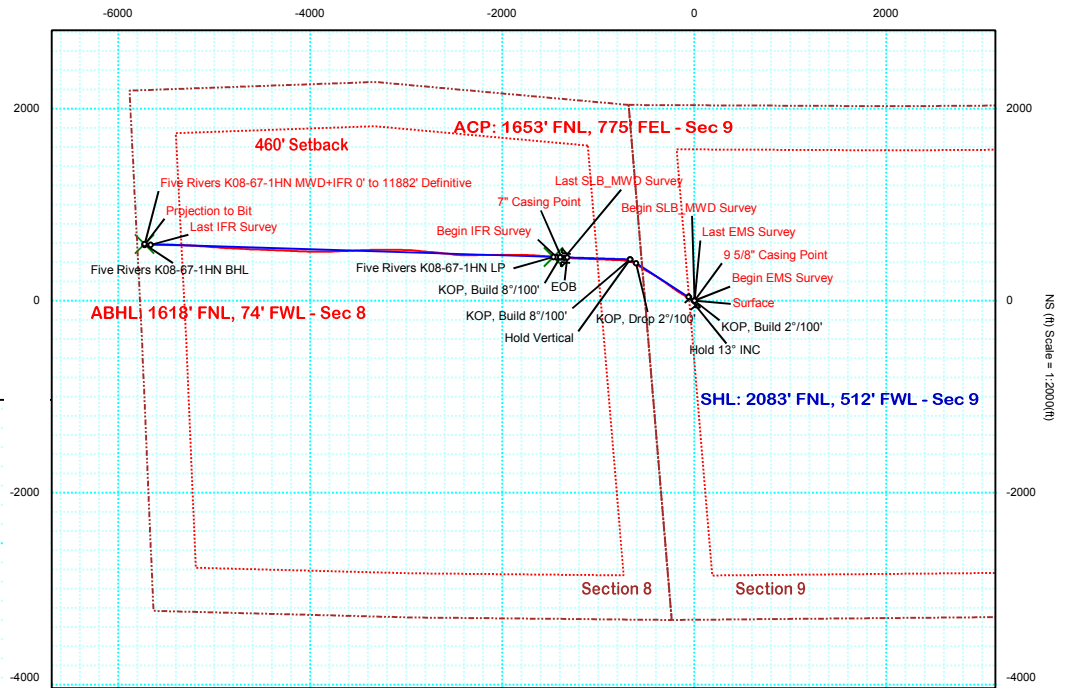
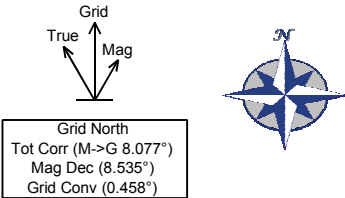
Well Coordinates:	NAD83 CO State Plane, N Zone, US Feet
	N 40° 19' 40.47600" W 104° 47' 27.60000"
	1363041.32 usFt 3197672.09 usFt
Ground Level:	4699.00 ft MSL
TVD Reference:	KB 30ft @ 4729.00 ft MSL
Local Coordinate Origin:	Five Rivers K08-67-1HN well head
Vertical Section Azimuth:	275.868 ° (Grid North)
North Reference:	Grid North

DOX Version: 2.8

Borehole: Original Hole	Well: Five Rivers K08-67-1HN	Field: CO, Weld County (NAD 83 NZ)	Structure: 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330
Gravity & Magnetic Parameters Model: BGGM 2014 Dip: 66.874° Date: 05-Aug-2014 MagDec: 8.535° FS: 52660.764nT Gravity FS: 999.024mgm (9.80665 Based)		Surface Location NAD83 Colorado State Plane, Northern Zone, US Feet Lat: N 40 19 40.48 Northing: 1363088.65ftU Grid Conv: 0.4581° Lon: W 104 47 27.64 Easting: 5197668.93ftU Scale Fact: 0.99995775	
		Miscellaneous Slot: Five Rivers K08-67-1HN TVD Ref: KB 30ft(4729ft above MSL) Plan: Five Rivers K08-67-1HN MWD+IFR 0' to 11882' Definitive	

PvA

EW (ft) Scale = 1:2000(ft)



Vertical Section (ft) Azim = 275.87° Scale = 1:2000(ft) Origin = 0N/-S, 0E/-W



Five Rivers K08-67-1HN MWD+IFR 0' to 11882' Definitive Survey Geodetic



Report (Def Survey)

Report Date: August 14, 2014 - 02:27 PM
Client: Noble Energy
Field: CO, Weld County (NAD 83 NZ)
Structure / Slot: Noble 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330 / Five Rivers K08-67-1HN
Well: Five Rivers K08-67-1HN
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Five Rivers K08-67-1HN MWD+IFR 0' to 11882' Definitive
Survey Date: August 05, 2014
Tort / AHD / DDI / ERD Ratio: 226.141 ° / 5860.876 ft / 6.346 / 0.825
Coordinate Reference System: NAD83 Colorado State Plane, Northern Zone, US Feet
Location Lat / Long: N 40° 19' 40.47600", W 104° 47' 27.63600"
Location Grid N/E Y/X: N 1363088.652 ftUS, E 3197668.926 ftUS
CRS Grid Convergence Angle: 0.4581 °
Grid Scale Factor: 0.99995775
Version / Patch: 2.8.551.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 275.868 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB 30ft
TVD Reference Elevation: 4729.000 ft above MSL
Seabed / Ground Elevation: 4699.000 ft above MSL
Magnetic Declination: 8.535 °
Total Gravity Field Strength: 999.0239mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 52660.764 nT
Magnetic Dip Angle: 66.874 °
Declination Date: August 05, 2014
Magnetic Declination Model: BGGM 2014
North Reference: Grid North
Grid Convergence Used: 0.4581 °
Total Corr Mag North->Grid North: 8.0770 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	1363088.65	3197668.93	N 40 19 40.48	W 104 47 27.64
Begin EMS	290.00	0.30	156.45	290.00	-0.37	-0.70	0.30	0.10	1363087.96	3197669.23	N 40 19 40.47	W 104 47 27.63
Survey 9 5/8" Casing Point	628.00	0.20	39.23	628.00	-1.13	-1.06	1.02	0.13	1363087.60	3197669.95	N 40 19 40.47	W 104 47 27.62
Last EMS Survey Begin	631.00	0.20	38.55	631.00	-1.13	-1.05	1.03	0.13	1363087.60	3197669.96	N 40 19 40.47	W 104 47 27.62
SLB_MWD Survey	731.00	0.55	264.22	731.00	-0.76	-0.96	0.66	0.70	1363087.69	3197669.59	N 40 19 40.47	W 104 47 27.63
	825.00	0.60	260.81	824.99	0.16	-1.09	-0.27	0.06	1363087.57	3197668.65	N 40 19 40.47	W 104 47 27.64
	919.00	0.54	252.88	918.99	1.04	-1.29	-1.18	0.11	1363087.36	3197667.74	N 40 19 40.46	W 104 47 27.65
	1012.00	0.68	254.83	1011.98	1.96	-1.57	-2.13	0.15	1363087.09	3197666.79	N 40 19 40.46	W 104 47 27.66
	1105.00	0.65	246.31	1104.97	2.93	-1.92	-3.14	0.11	1363086.73	3197665.78	N 40 19 40.46	W 104 47 27.68
	1197.00	0.54	254.79	1196.97	3.79	-2.24	-4.04	0.15	1363086.41	3197664.89	N 40 19 40.45	W 104 47 27.69
	1289.00	0.38	250.90	1288.97	4.48	-2.46	-4.75	0.18	1363086.19	3197664.17	N 40 19 40.45	W 104 47 27.70
	1383.00	0.59	236.21	1382.96	5.13	-2.83	-5.45	0.25	1363085.82	3197663.47	N 40 19 40.45	W 104 47 27.71
	1475.00	0.73	224.79	1474.96	5.86	-3.51	-6.26	0.21	1363085.14	3197662.67	N 40 19 40.44	W 104 47 27.72
	1568.00	0.96	239.78	1567.95	6.87	-4.32	-7.35	0.34	1363084.33	3197661.58	N 40 19 40.43	W 104 47 27.73
	1662.00	0.73	232.49	1661.94	7.94	-5.08	-8.51	0.27	1363083.57	3197660.42	N 40 19 40.43	W 104 47 27.75
	1756.00	0.67	250.46	1755.93	8.87	-5.63	-9.50	0.24	1363083.02	3197659.43	N 40 19 40.42	W 104 47 27.76
	1849.00	3.79	310.12	1848.85	11.90	-3.83	-12.36	3.76	1363084.82	3197656.57	N 40 19 40.44	W 104 47 27.80
	1942.00	5.42	295.83	1941.55	18.57	0.06	-18.67	2.13	1363088.71	3197650.26	N 40 19 40.48	W 104 47 27.88
	2037.00	7.27	309.46	2035.97	27.80	5.84	-27.35	2.50	1363094.49	3197641.58	N 40 19 40.54	W 104 47 27.99
	2132.00	9.20	306.54	2129.99	39.34	14.18	-38.09	2.08	1363102.83	3197630.84	N 40 19 40.62	W 104 47 28.13
	2227.00	10.38	301.37	2223.61	53.60	23.16	-51.50	1.55	1363111.81	3197617.43	N 40 19 40.71	W 104 47 28.30
	2322.00	12.65	300.08	2316.69	70.81	32.83	-67.81	2.40	1363121.48	3197601.12	N 40 19 40.81	W 104 47 28.51
	2417.00	11.80	297.63	2409.53	89.32	42.55	-85.42	1.05	1363131.20	3197583.51	N 40 19 40.90	W 104 47 28.73
	2512.00	13.78	301.87	2502.17	108.51	53.03	-103.63	2.31	1363141.68	3197565.30	N 40 19 41.01	W 104 47 28.97
	2607.00	14.37	301.37	2594.32	129.32	65.14	-123.31	0.63	1363153.79	3197545.62	N 40 19 41.13	W 104 47 29.22
	2703.00	15.02	300.77	2687.18	151.36	77.70	-144.17	0.70	1363166.35	3197524.76	N 40 19 41.26	W 104 47 29.49
	2798.00	15.04	300.74	2778.93	173.70	90.30	-165.34	0.02	1363178.95	3197503.59	N 40 19 41.38	W 104 47 29.76
	2893.00	13.00	307.12	2871.10	194.03	103.05	-184.46	2.69	1363191.70	3197484.48	N 40 19 41.51	W 104 47 30.01
	2988.00	12.22	305.98	2963.81	211.86	115.41	-201.11	0.86	1363204.05	3197467.82	N 40 19 41.63	W 104 47 30.22
	3083.00	11.46	306.55	3056.79	228.67	126.93	-216.83	0.81	1363215.58	3197452.10	N 40 19 41.75	W 104 47 30.42
	3178.00	10.12	306.24	3150.11	243.99	137.49	-231.14	1.41	1363226.13	3197437.79	N 40 19 41.85	W 104 47 30.61
	3273.00	11.75	303.76	3243.38	259.74	147.80	-245.92	1.79	1363236.44	3197423.02	N 40 19 41.96	W 104 47 30.80
	3368.00	12.85	306.92	3336.20	277.34	159.52	-262.41	1.36	1363248.17	3197406.53	N 40 19 42.07	W 104 47 31.01
	3463.00	11.48	305.65	3429.06	294.60	171.38	-278.54	1.47	1363260.02	3197390.40	N 40 19 42.19	W 104 47 31.21
	3558.00	12.36	304.84	3522.01	311.70	182.70	-294.56	0.94	1363271.34	3197374.38	N 40 19 42.30	W 104 47 31.42
	3653.00	11.06	306.11	3615.03	328.47	193.87	-310.27	1.39	1363282.52	3197358.67	N 40 19 42.42	W 104 47 31.62
	3748.00	12.97	303.53	3707.95	345.78	205.13	-326.52	2.09	1363293.78	3197342.42	N 40 19 42.53	W 104 47 31.83
	3843.00	13.73	303.25	3800.38	365.24	217.20	-344.84	0.80	1363305.85	3197324.11	N 40 19 42.65	W 104 47 32.07
	3938.00	14.33	302.42	3892.55	385.76	229.69	-364.19	0.67	1363318.33	3197304.75	N 40 19 42.77	W 104 47 32.31
	4033.00	14.14	302.48	3984.63	406.65	242.22	-383.90	0.20	1363330.87	3197285.04	N 40 19 42.90	W 104 47 32.57
	4128.00	13.09	301.68	4076.96	426.71	254.11	-402.85	1.12	1363342.75	3197266.10	N 40 19 43.02	W 104 47 32.81
	4223.00	11.87	301.24	4169.71	445.23	264.82	-420.36	1.29	1363353.46	3197248.59	N 40 19 43.13	W 104 47 33.04
	4318.00	11.12	299.36	4262.81	462.46	274.38	-436.69	0.88	1363363.02	3197232.25	N 40 19 43.22	W 104 47 33.25
	4414.00	12.31	299.82	4356.81	480.30	284.01	-453.64	1.24	1363372.65	3197215.30	N 40 19 43.32	W 104 47 33.46
	4509.00	12.03	299.71	4449.67	498.61	293.95	-471.03	0.30	1363382.59	3197197.92	N 40 19 43.42	W 104 47 33.69
	4604.00	11.73	300.60	4542.64	516.44	303.77	-487.94	0.37	1363392.41	3197181.01	N 40 19 43.52	W 104 47 33.90
	4699.00	10.07	302.46	4635.92	532.64	313.15	-503.26	1.79	1363401.79	3197165.69	N 40 19 43.61	W 104 47 34.10
	4794.00	9.22	302.32	4729.58	546.88	321.68	-516.70	0.90	1363410.31	3197152.25	N 40 19 43.70	W 104 47 34.27
	4890.00	9.12	301.81	4824.35	560.60	329.80	-529.66	0.13	1363418.44	3197139.29	N 40 19 43.78	W 104 47 34.44
	4985.00	9.12	302.79	4918.15	574.09	337.84	-542.39	0.16	1363426.48	3197126.56	N 40 19 43.86	W 104 47 34.60
	5080.00	9.61	306.31	5011.88	587.64	346.62	-555.11	0.79	1363435.25	3197113.84	N 40 19 43.94	W 104 47 34.77
	5175.00	10.66	305.49	5105.40	602.11	356.41	-568.65	1.12	1363445.05	3197100.30	N 40 19 44.04	W 104 47 34.94
	5271.00	11.18	300.08	5199.66	618.32	366.23	-583.94	1.20	1363454.87	3197085.01	N 40 19 44.14	W 104 47 35.14
	5366.00	11.44	296.58	5292.82	635.53	375.06	-600.33	0.77	1363463.70	3197068.62	N 40 19 44.23	W 104 47 35.35
	5461.00	9.13	295.54	5386.29	651.44	382.53	-615.56	2.44	1363471.17	3197053.39	N 40 19 44.30	W 104 47 35.54
	5556.00	7.02	298.11	5480.34	663.92	388.52	-627.48	2.25	1363477.15	3197041.47	N 40 19 44.36	W 104 47 35.70
	5651.00	5.45	301.65	5574.77	673.35	393.62	-636.44	1.70	1363482.25	3197032.51	N 40 19 44.42	W 104 47 35.81
	5746.00	4.34	298.35	5669.43	680.74	397.69	-643.45	1.20	1363486.33	3197025.51	N 40 19 44.46	W 104 47 35.90
	5841.00	3.42	288.79	5764.21	686.82	400.31	-649.29	1.18	1363488.95	3197019.66	N 40 19 44.48	W 104 47 35.98
	5937.00	3.88	288.30	5860.01	692.78	402.26	-655.09	0.48	1363490.89	3197013.87	N 40 19 44.50	W 104 47 36.05
	6032.00	2.93	286.21	5954.84	698.31	403.94	-660.47	1.01	1363492.58	3197008.48	N 40 19 44.52	W 104 47 36.12
	6127.00	2.29	279.27	6049.75	702.59	404.93	-664.68	0.75	1363493.56	3197004.28	N 40 19 44.53	W 104 47 36.18
	6222.00	1.87	273.68	6144.68	706.04	405.33	-668.10	0.49	1363493.97	3197000.86	N 40 19 44.53	W 104 47 36.22
	6317.00	1.76	270.43	6239.64	709.03	405.44	-671.10	0.16	1363494.08	3196997.86	N 40 19 44.54	W 104 47 36.26
	6407.00	1.61	259.88	6329.60	711.62	405.23	-673.72	0.38	1363493.86	3196995.23	N 40 19 44.53	W 104 47 36.29
	6502.00	9.39	285.88	6424.09	720.55	407.12	-682.50	8.39	1363495.75	3196986.45	N 40 19 44.55	W 104 47 36.41
	6597.00	15.03	285.05	6516.91	740.36	412.44	-701.87	5.94	1363501.08	3196967.09	N 40 19 44.61	W 104 47 36.66
	6692.00	22.53	277.97	6606.80	770.75	418.17	-731.84	8.24	1363506.81	3196937.12	N 40 19 44.67	W 104 47 37.04
	6787.00	31.23	273.72	6691.46	813.64	422.30	-774.52	9.37	1363510.94	3196894.44	N 40 19 44.71	W 104 47 37.59
	6882.00	40.81	270.74	6768.21	869.30	424.31	-830.27	10.25	1363512.94	3196838.69	N 40 19 44.73	W 104 47 38.31
	6978.00	51.09	272.87	6834.87	938.04	426.59	-899.13	10.83	1363515.22	3196769.83	N	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7263.00	60.58	271.51	6993.32	1173.84	435.76	-1135.24	1.34	1363524.39	3196533.74	N 40 19 44.87	W 104 47 42.25
	7358.00	66.16	272.32	7035.89	1258.52	438.61	-1220.08	5.92	1363527.24	3196448.90	N 40 19 44.91	W 104 47 43.34
	7453.00	75.10	273.71	7067.37	1347.94	443.35	-1309.48	9.51	1363531.98	3196359.50	N 40 19 44.96	W 104 47 44.50
Last SLB_MWD Survey	7499.00	79.36	274.46	7077.53	1392.77	446.54	-1354.22	9.40	1363535.18	3196314.77	N 40 19 45.00	W 104 47 45.07
7" Casing Point Begin IFR Survey	7530.00	80.57	275.17	7082.93	1423.29	449.11	-1384.63	4.50	1363537.74	3196284.35	N 40 19 45.02	W 104 47 45.47
	7582.00	82.59	276.35	7090.55	1474.73	454.27	-1435.81	4.50	1363542.90	3196233.18	N 40 19 45.08	W 104 47 46.13
	7677.00	87.35	274.11	7098.87	1569.32	462.89	-1530.02	5.53	1363551.52	3196138.98	N 40 19 45.17	W 104 47 47.34
	7772.00	91.07	273.39	7100.19	1664.23	469.11	-1624.79	3.98	1363557.74	3196044.21	N 40 19 45.24	W 104 47 48.57
	7867.00	90.00	272.60	7099.30	1759.11	474.07	-1719.65	1.40	1363562.70	3195949.35	N 40 19 45.30	W 104 47 49.79
	7962.00	88.90	270.93	7100.21	1853.86	477.00	-1814.60	2.10	1363565.63	3195854.41	N 40 19 45.33	W 104 47 51.02
	8058.00	88.25	270.12	7102.60	1949.41	477.88	-1910.56	1.08	1363566.51	3195758.45	N 40 19 45.35	W 104 47 52.25
	8153.00	87.77	269.22	7105.90	2043.79	477.33	-2005.50	1.07	1363565.96	3195663.51	N 40 19 45.35	W 104 47 53.48
	8248.00	90.17	270.09	7107.61	2138.21	476.77	-2100.48	2.69	1363565.40	3195568.54	N 40 19 45.35	W 104 47 54.71
	8343.00	90.76	269.26	7106.84	2232.66	476.23	-2195.47	1.07	1363564.86	3195473.55	N 40 19 45.35	W 104 47 55.93
	8438.00	90.58	267.50	7105.74	2326.84	473.55	-2290.42	1.86	1363562.18	3195378.60	N 40 19 45.34	W 104 47 57.16
	8534.00	89.48	270.74	7105.68	2422.16	472.07	-2386.40	3.56	1363560.71	3195282.63	N 40 19 45.33	W 104 47 58.40
	8629.00	93.61	276.41	7103.12	2516.99	477.99	-2481.12	7.38	1363566.62	3195187.92	N 40 19 45.39	W 104 47 59.62
	8724.00	92.65	276.41	7097.93	2611.84	488.58	-2575.38	1.01	1363577.21	3195093.66	N 40 19 45.51	W 104 48 0.84
	8819.00	90.79	275.93	7095.08	2706.79	488.78	-2669.79	2.02	1363587.41	3194999.26	N 40 19 45.61	W 104 48 2.06
	8914.00	91.72	275.18	7093.00	2801.76	507.98	-2764.32	1.26	1363596.61	3194904.73	N 40 19 45.71	W 104 48 3.27
	9009.00	89.62	276.26	7091.89	2896.75	517.45	-2858.83	2.49	1363606.08	3194810.22	N 40 19 45.81	W 104 48 4.49
	9104.00	89.38	273.05	7092.72	2991.71	525.16	-2953.50	3.39	1363613.79	3194715.56	N 40 19 45.90	W 104 48 5.72
	9200.00	90.10	270.87	7093.15	3087.48	528.44	-3049.44	2.39	1363617.07	3194619.63	N 40 19 45.94	W 104 48 6.95
	9295.00	91.96	270.91	7091.44	3182.11	529.92	-3144.40	1.96	1363618.55	3194524.66	N 40 19 45.96	W 104 48 8.18
	9390.00	90.93	269.17	7089.05	3276.58	529.99	-3239.37	2.13	1363618.62	3194429.70	N 40 19 45.97	W 104 48 9.41
	9485.00	91.58	269.75	7086.97	3370.96	529.10	-3334.34	0.92	1363617.72	3194334.73	N 40 19 45.97	W 104 48 10.63
	9580.00	89.45	267.55	7086.11	3465.20	526.86	-3429.30	3.22	1363615.49	3194239.78	N 40 19 45.95	W 104 48 11.86
	9675.00	90.03	266.93	7086.54	3559.12	522.29	-3524.19	0.89	1363610.91	3194144.89	N 40 19 45.91	W 104 48 13.08
	9770.00	91.82	267.67	7085.01	3653.04	517.81	-3619.07	2.04	1363606.44	3194050.02	N 40 19 45.88	W 104 48 14.31
	9865.00	92.72	267.37	7081.25	3746.96	513.71	-3713.90	1.00	1363602.34	3193955.19	N 40 19 45.84	W 104 48 15.53
	9960.00	92.20	268.25	7077.17	3840.94	510.08	-3808.74	1.07	1363598.71	3193860.35	N 40 19 45.81	W 104 48 16.76
	10056.00	91.55	270.22	7074.03	3936.24	508.81	-3904.68	2.17	1363597.44	3193764.42	N 40 19 45.81	W 104 48 18.00
	10151.00	90.07	271.98	7072.69	4030.89	510.64	-3999.65	2.42	1363599.27	3193669.46	N 40 19 45.83	W 104 48 19.22
	10246.00	91.65	271.43	7071.27	4125.63	513.47	-4094.59	1.76	1363602.10	3193574.52	N 40 19 45.87	W 104 48 20.45
	10341.00	89.86	273.50	7070.02	4220.44	517.55	-4189.48	2.88	1363606.18	3193479.63	N 40 19 45.92	W 104 48 21.68
	10436.00	90.27	272.34	7069.91	4315.32	522.39	-4284.36	1.29	1363611.02	3193384.76	N 40 19 45.97	W 104 48 22.90
	10532.00	90.58	272.24	7069.19	4411.13	526.23	-4380.28	0.34	1363614.86	3193288.84	N 40 19 46.02	W 104 48 24.14
	10627.00	90.69	272.25	7068.13	4505.93	529.95	-4475.20	0.11	1363618.58	3193193.92	N 40 19 46.06	W 104 48 25.36
	10722.00	90.86	271.04	7066.85	4600.66	532.68	-4570.15	1.29	1363621.31	3193098.98	N 40 19 46.10	W 104 48 26.59
	10817.00	89.18	273.48	7066.82	4695.46	536.43	-4665.07	3.12	1363625.06	3193004.07	N 40 19 46.14	W 104 48 27.81
	10912.00	89.55	273.31	7067.88	4790.37	542.06	-4759.89	0.44	1363630.69	3192909.24	N 40 19 46.20	W 104 48 29.04
	11007.00	90.72	272.06	7067.65	4885.22	546.51	-4854.78	1.80	1363635.14	3192814.36	N 40 19 46.26	W 104 48 30.26
	11102.00	89.86	275.36	7067.17	4980.14	552.66	-4949.57	3.59	1363641.29	3192719.57	N 40 19 46.32	W 104 48 31.49
	11198.00	90.27	274.20	7067.06	5076.12	560.66	-5045.23	1.28	1363649.29	3192623.92	N 40 19 46.41	W 104 48 32.72
	11293.00	90.65	274.02	7066.29	5171.07	567.47	-5139.99	0.44	1363656.10	3192529.17	N 40 19 46.48	W 104 48 33.94
	11388.00	91.13	273.80	7064.81	5266.00	573.95	-5234.75	0.56	1363662.58	3192434.40	N 40 19 46.56	W 104 48 35.17
	11483.00	92.30	272.42	7061.96	5360.85	579.11	-5329.57	1.90	1363667.74	3192339.60	N 40 19 46.61	W 104 48 36.39
	11578.00	92.03	271.22	7058.37	5455.54	582.13	-5424.45	1.30	1363670.76	3192244.72	N 40 19 46.65	W 104 48 37.61
	11673.00	90.89	270.03	7055.95	5550.11	583.17	-5519.41	1.73	1363671.80	3192149.76	N 40 19 46.67	W 104 48 38.84
	11768.00	91.17	269.05	7054.24	5644.51	582.41	-5614.39	1.07	1363671.04	3192054.79	N 40 19 46.67	W 104 48 40.07
Last IFR Survey	11817.00	91.24	268.60	7053.21	5693.13	581.41	-5663.37	0.93	1363670.04	3192005.81	N 40 19 46.66	W 104 48 40.70
Projection to Bit	11882.00	91.24	268.60	7051.80	5757.60	579.82	-5728.33	0.00	1363668.45	3191940.85	N 40 19 46.65	W 104 48 41.54

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
Vertical/Build	1	0.000	30.000	Act Stns	13.750	9.625	SLB_EMS-STD-Depth Only	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
Vertical/Build	1	30.000	290.000	Act Stns	13.750	9.625	SLB_EMS-STD	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
Vertical/Build	1	290.000	631.000	1/98.425	13.750	9.625	SLB_EMS-STD	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
Vertical/Build	1	631.000	631.000	Act Stns	13.750	9.625	SLB_EMS-STD	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
Vertical/Build	1	631.000	7499.000	Act Stns	6.125	4.500	SLB_MWD+DMAG	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
* Lateral	1	7499.000	11817.000	Act Stns	6.125	4.500	SLB_MWD+IFR+DMAG	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'
Bit Projection	1	11817.000	11882.000	Act Stns	6.125	4.500	SLB_BLIND+TREND	Original Hole / Five Rivers K08-67-1HN MWD+IFR 0' to 11882'

* SLB_MWD+IFR+DMAG =
MWD+IFR1+MS_WY