

Noble Energy

CO, Weld County (NAD 83 NZ)
Sec 8 Twn 4 N Rng 66 W
Five Rivers K09-66-1HN Original Hole
05-123-39482
H&P 330



A Schlumberger Company

Final Survey Report

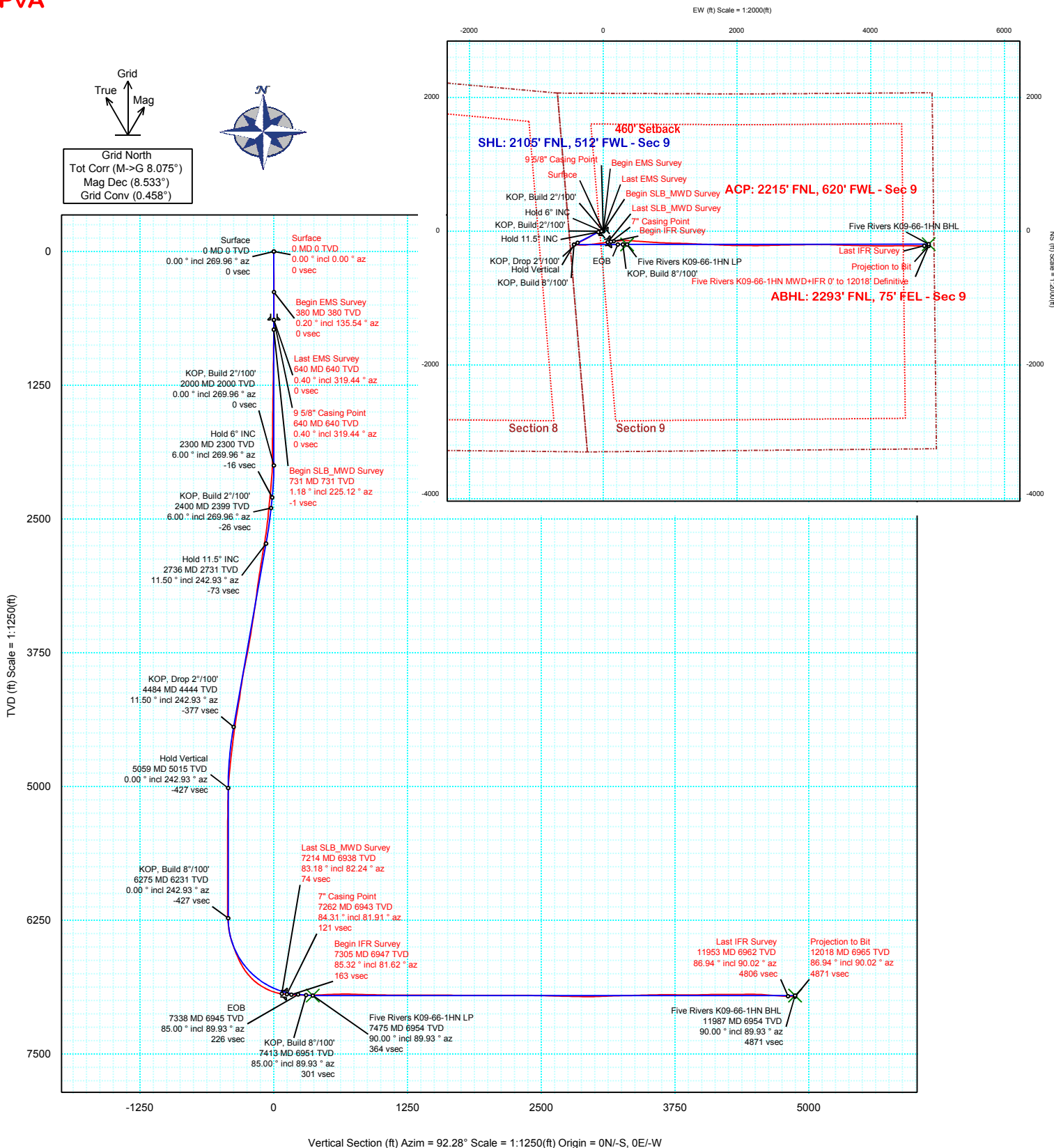
29-Oct-2014

Well Coordinates:	NAD83 CO State Plane, N Zone, US Feet
	N 40° 19' 40.22400" 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 K09-66-1HN well head
Vertical Section Azimuth:	92.280 ° (Grid North)
North Reference:	Grid North

DOX Version: 2.8

Borehole: Original Hole	Well: Five Rivers K09-66-1HN	Field: CO, Weld County (NAD 83 NZ)	Structure: Noble 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330
Gravity & Magnetic Parameters Model: BGGM 2014 Dip: 66.873° Date: 12-Aug-2014 MagDec: 8.533° FS: 52658.138nT Gravity FS: 999.024mgm (9.80665 Based)		Surface Location NAD83 Colorado State Plane, Northern Zone, US Feet Lat: N 40 19 40.22 Northing: 1363063.15ftU Grid Conv: 0.4581° Lon: W 104 47 27.64 Easting: 5197669.13ftU Scale Fact: 0.99995775	
		Miscellaneous Slot: Five Rivers K09-66-1HN TVD Ref: KB 30ft(4729ft above MSL) Plan: Five Rivers K09-66-1HN MWD+IFR 0' to 12018' Definitive	

PvA





Five Rivers K09-66-1HN MWD+IFR 0' to 12018' Definitive Survey Geodetic Report (Def Survey)



Report Date: August 22, 2014 - 09:18 AM
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 K09-66-1HN
Well: Five Rivers K09-66-1HN
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Five Rivers K09-66-1HN MWD+IFR 0' to 12018' Definitive
Survey Date: August 12, 2014
Tort / AHD / DDI / ERD Ratio: 222.064 ° / 5820.975 ft / 6.348 / 0.836
Coordinate Reference System: NAD83 Colorado State Plane, Northern Zone, US Feet
Location Lat / Long: N 40° 19' 40.22400", W 104° 47' 27.63600"
Location Grid N/E Y/X: N 1363063.153 ftUS, E 3197669.130 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: 92.280 ° (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: 8.533 °
Total Gravity Field Strength: 999.0239mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 52658.138 nT
Magnetic Dip Angle: 66.873 °
Declination Date: August 12, 2014
Magnetic Declination Model: BGGM 2014
North Reference: Grid North
Grid Convergence Used: 0.4581 °
Total Corr Mag North->Grid North: 8.0752 °
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	1363063.15	3197669.13	N 40 19 40.22	W 104 47 27.64
Begin EMS	380.00	0.20	135.54	380.00	0.48	-0.47	0.46	0.05	1363062.68	3197669.59	N 40 19 40.22	W 104 47 27.63
Survey 9 5/8" Casing												
Point												
Last EMS	640.00	0.40	319.44	640.00	0.20	-0.11	0.19	0.23	1363063.04	3197669.32	N 40 19 40.22	W 104 47 27.63
Survey												
Begin												
SLB_MWD	731.00	1.18	225.12	730.99	-0.66	-0.53	-0.68	1.40	1363062.62	3197668.45	N 40 19 40.22	W 104 47 27.64
Survey												
	826.00	0.90	213.87	825.97	-1.72	-1.84	-1.79	0.37	1363061.31	3197667.34	N 40 19 40.21	W 104 47 27.66
	920.00	1.08	211.02	919.96	-2.53	-3.21	-2.66	0.19	1363059.94	3197666.47	N 40 19 40.19	W 104 47 27.67
	1013.00	0.80	242.42	1012.95	-3.51	-4.26	-3.68	0.62	1363058.89	3197665.45	N 40 19 40.18	W 104 47 27.68
	1106.00	0.86	242.54	1105.94	-4.68	-4.88	-4.88	0.06	1363058.27	3197664.25	N 40 19 40.18	W 104 47 27.70
	1197.00	0.83	247.77	1196.93	-5.87	-5.45	-6.09	0.09	1363057.71	3197663.04	N 40 19 40.17	W 104 47 27.72
	1290.00	0.90	248.91	1289.92	-7.15	-5.96	-7.40	0.08	1363057.19	3197661.73	N 40 19 40.17	W 104 47 27.73
	1383.00	1.05	240.62	1382.91	-8.55	-6.64	-8.82	0.22	1363056.51	3197660.31	N 40 19 40.16	W 104 47 27.75
	1475.00	0.88	233.68	1474.89	-9.82	-7.47	-10.12	0.22	1363055.68	3197659.01	N 40 19 40.15	W 104 47 27.77
	1568.00	0.86	243.81	1567.88	-10.99	-8.20	-11.32	0.17	1363054.95	3197657.81	N 40 19 40.14	W 104 47 27.78
	1662.00	0.74	217.71	1661.87	-11.96	-8.99	-12.32	0.40	1363054.16	3197656.81	N 40 19 40.14	W 104 47 27.80
	1757.00	0.47	200.20	1756.87	-12.43	-9.84	-12.83	0.34	1363053.31	3197656.30	N 40 19 40.13	W 104 47 27.80
	1849.00	0.14	224.81	1848.87	-12.62	-10.28	-13.04	0.37	1363052.88	3197656.09	N 40 19 40.12	W 104 47 27.81
	1943.00	0.56	6.77	1942.86	-12.67	-9.90	-13.07	0.72	1363053.25	3197656.06	N 40 19 40.13	W 104 47 27.81
	2037.00	3.04	300.25	2036.82	-14.83	-8.19	-15.17	3.04	1363054.96	3197653.96	N 40 19 40.14	W 104 47 27.83
	2132.00	5.30	284.40	2131.56	-21.35	-5.83	-21.60	2.65	1363057.32	3197647.54	N 40 19 40.17	W 104 47 27.92
	2227.00	5.19	282.81	2226.16	-29.86	-3.79	-30.04	0.19	1363059.37	3197639.09	N 40 19 40.19	W 104 47 28.02
	2322.00	5.90	277.97	2320.72	-38.95	-2.15	-39.07	0.89	1363061.00	3197630.06	N 40 19 40.21	W 104 47 28.14
	2418.00	5.40	276.98	2416.25	-48.37	-0.92	-48.44	0.53	1363062.23	3197620.69	N 40 19 40.22	W 104 47 28.26
	2513.00	6.95	248.73	2510.72	-58.09	-2.46	-58.24	3.54	1363060.69	3197610.89	N 40 19 40.20	W 104 47 28.39
	2608.00	8.62	239.76	2604.84	-69.36	-8.13	-69.74	2.17	1363055.02	3197599.39	N 40 19 40.15	W 104 47 28.54
	2703.00	10.55	242.22	2698.51	-82.89	-15.77	-83.59	2.08	1363047.38	3197585.54	N 40 19 40.07	W 104 47 28.72
	2798.00	11.00	246.52	2791.84	-98.59	-23.44	-99.60	0.97	1363039.72	3197569.54	N 40 19 40.00	W 104 47 28.92
	2893.00	9.53	247.62	2885.32	-113.90	-30.04	-115.19	1.56	1363033.11	3197553.95	N 40 19 39.94	W 104 47 29.13
	2989.00	10.83	241.49	2979.81	-128.87	-37.38	-130.46	1.76	1363025.78	3197538.67	N 40 19 39.86	W 104 47 29.32
	3084.00	10.13	240.02	3073.22	-143.60	-45.81	-145.54	0.79	1363017.34	3197523.59	N 40 19 39.78	W 104 47 29.52
	3179.00	8.88	235.10	3166.92	-156.51	-54.18	-158.79	1.57	1363008.97	3197510.34	N 40 19 39.70	W 104 47 29.69
	3273.00	9.84	228.77	3259.66	-168.12	-63.63	-170.79	1.50	1362999.53	3197498.35	N 40 19 39.61	W 104 47 29.85
	3368.00	10.51	237.34	3353.17	-181.12	-73.66	-184.20	1.74	1362989.50	3197484.94	N 40 19 39.51	W 104 47 30.02
	3463.00	10.90	241.01	3446.52	-195.90	-82.69	-199.35	0.82	1362980.47	3197469.79	N 40 19 39.42	W 104 47 30.22
	3558.00	10.13	237.44	3539.93	-210.44	-91.54	-214.25	1.06	1362971.62	3197454.89	N 40 19 39.34	W 104 47 30.41
	3653.00	11.10	242.01	3633.30	-225.19	-100.33	-229.37	1.35	1362962.83	3197439.77	N 40 19 39.25	W 104 47 30.61
	3748.00	12.67	244.07	3726.26	-242.27	-109.18	-246.81	1.71	1362953.98	3197422.33	N 40 19 39.16	W 104 47 30.83
	3843.00	12.72	243.26	3818.94	-260.60	-118.44	-265.52	0.20	1362944.72	3197403.62	N 40 19 39.07	W 104 47 31.08
	3939.00	12.76	242.56	3912.58	-279.05	-128.08	-284.37	0.16	1362935.08	3197384.77	N 40 19 38.98	W 104 47 31.32
	4034.00	11.03	241.08	4005.53	-295.94	-137.31	-301.64	1.85	1362925.85	3197367.50	N 40 19 38.89	W 104 47 31.54
	4129.00	9.58	243.13	4099.00	-310.62	-145.28	-316.65	1.57	1362917.88	3197352.49	N 40 19 38.81	W 104 47 31.74
	4224.00	9.85	246.32	4192.63	-324.83	-152.12	-331.15	0.63	1362911.04	3197338.00	N 40 19 38.75	W 104 47 31.93
	4319.00	10.45	245.12	4286.15	-339.80	-159.01	-346.40	0.66	1362904.15	3197322.74	N 40 19 38.68	W 104 47 32.12
	4414.00	10.02	246.25	4379.64	-354.89	-165.96	-361.78	0.50	1362897.20	3197307.37	N 40 19 38.61	W 104 47 32.32
	4509.00	8.68	245.87	4473.37	-368.74	-172.22	-375.88	1.40	1362890.94	3197293.26	N 40 19 38.55	W 104 47 32.51
	4604.00	8.30	244.87	4567.33	-381.25	-178.07	-388.64	0.43	1362885.09	3197280.51	N 40 19 38.50	W 104 47 32.67
	4700.00	7.10	249.26	4662.46	-392.86	-183.11	-400.47	1.40	1362880.05	3197268.68	N 40 19 38.45	W 104 47 32.83
	4795.00	6.70	248.90	4756.78	-403.35	-187.18	-411.12	0.43	1362875.98	3197258.02	N 40 19 38.41	W 104 47 32.96
	4890.00	5.99	250.80	4851.19	-413.05	-190.81	-420.98	0.77	1362872.35	3197248.17	N 40 19 38.37	W 104 47 33.09
	4986.00	4.40	254.63	4946.79	-421.23	-193.43	-429.26	1.69	1362869.73	3197239.89	N 40 19 38.35	W 104 47 33.20
	5081.00	3.38	224.58	5041.58	-426.59	-196.40	-434.75	2.36	1362866.76	3197234.40	N 40 19 38.32	W 104 47 33.27
	5176.00	1.70	220.18	5136.49	-429.34	-199.47	-437.63	1.79	1362863.69	3197231.52	N 40 19 38.29	W 104 47 33.31
	5271.00	0.59	243.69	5231.47	-430.64	-200.76	-438.97	1.24	1362862.40	3197230.18	N 40 19 38.27	W 104 47 33.32
	5366.00	0.46	233.18	5326.46	-431.36	-201.21	-439.72	0.17	1362861.95	3197229.43	N 40 19 38.27	W 104 47 33.33
	5462.00	0.85	186.81	5422.46	-431.72	-202.14	-440.11	0.65	1362861.02	3197229.04	N 40 19 38.26	W 104 47 33.34
	5556.00	1.23	207.54	5516.44	-432.20	-203.72	-440.66	0.56	1362859.44	3197228.49	N 40 19 38.25	W 104 47 33.35
	5651.00	1.59	180.68	5611.41	-432.60	-205.94	-441.14	0.78	1362857.22	3197228.01	N 40 19 38.22	W 104 47 33.35
	5747.00	0.65	121.08	5707.40	-432.09	-207.56	-440.69	1.44	1362855.61	3197228.45	N 40 19 38.21	W 104 47 33.35
	5842.00	0.77	176.38	5802.39	-431.55	-208.47	-440.20	0.70	1362854.69	3197228.95	N 40 19 38.20	W 104 47 33.34
	5937.00	0.39	219.45	5897.39	-431.68	-209.35	-440.36	0.58	1362853.81	3197228.79	N 40 19 38.19	W 104 47 33.34
	6032.00	0.14	75.63	5992.39	-431.77	-209.57	-440.45	0.54	1362853.59	3197228.70	N 40 19 38.19	W 104 47 33.34
	6127.00	0.24	251.85	6087.39	-431.84	-209.61	-440.53	0.40	1362853.56	3197228.62	N 40 19 38.19	W 104 47 33.35
	6175.00	0.33	256.38	6135.39	-432.07	-209.67	-440.76	0.18	1362853.49	3197228.39	N 40 19 38.19	W 104 47 33.35
	6216.00	0.12	256.29	6176.38	-432.22	-209.71	-440.92	0.49	1362853.45	3197228.23	N 40 19 38.19	W 104 47 33.35
	6263.00	3.38	79.23	6223.36	-430.92	-209.46	-439.60	7.46	1362853.70	3197229.55	N 40 19 38.19	W 104 47 33.33
	6312.00	4.50	88.96	6272.24	-427.60	-209.16	-436.26	2.65	1362854.01	3197232.89	N 40 19 38.19	W 104 47 33.29
	6359.00	7.77	84.58	6318.97	-422.61	-208.82	-431.25	7.02	1362854.34	3197237.89	N 40 19 38.19	W 104 47 33.23
	6407.00	11.49	86.04	6366.28	-414.63	-208.19	-423.25	7.77	1362854.98	3197245.90	N 40 19 38.20	W 104 47 33.12
	6454.00	15.11	84.38	6412.01	-403.91	-207.26	-412.48	7.74	1362855.90	3197256.67	N 40 19 38.21	W 104 47 32.98
	6502.00	17.62	85.04	6458.07	-390.50	-206.02	-399.02	5.24	1362857.14	3197270.13	N 40 19 38.22	W 104 47 32.81

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 ° ' ")
	6787.00	34.49	86.95	6716.22	-272.01	-208.11	-280.51	9.73	1362855.06	3197388.63	N 40 19 38.19 W 104 47 31.28	
	6883.00	44.65	83.15	6790.13	-211.47	-202.62	-219.71	10.88	1362860.54	3197449.43	N 40 19 38.24 W 104 47 30.49	
	6978.00	55.73	83.14	6850.86	-139.53	-193.92	-147.36	11.66	1362869.24	3197521.77	N 40 19 38.32 W 104 47 29.56	
	7073.00	64.55	82.47	6898.11	-58.35	-183.59	-65.71	9.30	1362879.57	3197603.42	N 40 19 38.42 W 104 47 28.50	
	7168.00	76.65	81.69	6929.61	29.67	-171.25	22.87	12.76	1362891.91	3197692.00	N 40 19 38.53 W 104 47 27.36	
Last SLB_MWD Survey	7214.00	83.18	82.24	6937.66	74.20	-164.92	67.69	14.24	1362898.24	3197736.82	N 40 19 38.59 W 104 47 26.78	
7" Casing Point Begin IFR Survey	7262.00	84.31	81.91	6942.89	121.16	-158.34	114.95	2.45	1362904.82	3197784.08	N 40 19 38.65 W 104 47 26.17	
	7305.00	85.32	81.62	6946.78	163.26	-152.21	157.33	2.45	1362910.95	3197826.46	N 40 19 38.71 W 104 47 25.62	
	7398.00	89.00	87.06	6951.39	255.21	-143.06	249.72	7.06	1362920.10	3197918.83	N 40 19 38.79 W 104 47 24.43	
	7491.00	91.41	90.88	6951.06	348.03	-141.39	342.68	4.86	1362921.77	3198011.79	N 40 19 38.80 W 104 47 23.23	
	7585.00	92.86	94.04	6947.55	441.95	-145.42	436.51	3.70	1362917.74	3198105.62	N 40 19 38.75 W 104 47 22.02	
	7680.00	92.10	93.25	6943.44	536.83	-151.45	531.23	1.15	1362911.70	3198200.33	N 40 19 38.69 W 104 47 20.79	
	7776.00	90.86	94.29	6940.96	632.77	-157.76	626.99	1.69	1362905.39	3198296.09	N 40 19 38.62 W 104 47 19.56	
	7871.00	88.11	93.82	6941.82	727.71	-164.48	721.73	2.94	1362898.68	3198390.83	N 40 19 38.54 W 104 47 18.33	
	7966.00	88.73	93.03	6944.44	822.65	-170.16	816.53	1.06	1362893.01	3198485.62	N 40 19 38.48 W 104 47 17.11	
	8061.00	88.45	93.02	6946.77	917.61	-175.17	911.37	0.29	1362887.99	3198580.46	N 40 19 38.42 W 104 47 15.89	
	8156.00	88.83	91.45	6949.03	1012.58	-178.87	1006.26	1.70	1362884.29	3198675.35	N 40 19 38.38 W 104 47 14.66	
	8251.00	90.10	91.03	6949.92	1107.56	-180.93	1101.24	1.41	1362882.23	3198770.32	N 40 19 38.35 W 104 47 13.44	
	8347.00	89.73	92.30	6950.06	1203.55	-183.72	1197.19	1.38	1362879.45	3198866.27	N 40 19 38.31 W 104 47 12.20	
	8442.00	89.52	92.39	6950.68	1298.55	-187.60	1292.11	0.24	1362875.56	3198961.18	N 40 19 38.27 W 104 47 10.97	
	8537.00	90.55	93.30	6950.62	1393.54	-192.32	1386.99	1.45	1362870.84	3199056.06	N 40 19 38.21 W 104 47 9.75	
	8632.00	89.42	92.10	6950.65	1488.54	-196.79	1481.88	1.74	1362866.37	3199150.95	N 40 19 38.16 W 104 47 8.52	
	8727.00	90.14	91.35	6951.01	1583.53	-199.65	1576.84	1.09	1362863.51	3199245.90	N 40 19 38.13 W 104 47 7.30	
	8822.00	88.83	92.66	6951.86	1678.52	-202.98	1671.77	1.95	1362860.19	3199340.83	N 40 19 38.09 W 104 47 6.07	
	8917.00	90.38	92.76	6952.52	1773.52	-207.47	1766.66	1.63	1362855.69	3199435.71	N 40 19 38.03 W 104 47 4.85	
	9013.00	89.42	91.68	6952.69	1869.51	-211.19	1862.59	1.51	1362851.98	3199531.63	N 40 19 37.99 W 104 47 3.61	
	9108.00	89.93	91.69	6953.23	1964.51	-213.98	1957.54	0.54	1362849.18	3199626.59	N 40 19 37.95 W 104 47 2.38	
	9203.00	89.97	90.16	6953.31	2059.48	-215.51	2052.53	1.61	1362847.65	3199721.57	N 40 19 37.93 W 104 47 1.16	
	9298.00	90.48	90.03	6952.94	2154.41	-215.67	2147.53	0.55	1362847.49	3199816.56	N 40 19 37.92 W 104 46 59.93	
	9393.00	89.97	90.55	6952.56	2249.35	-216.15	2242.52	0.77	1362847.01	3199911.55	N 40 19 37.91 W 104 46 58.70	
	9488.00	89.31	89.13	6953.16	2344.26	-215.89	2337.52	1.65	1362847.28	3200006.54	N 40 19 37.90 W 104 46 57.48	
	9583.00	89.93	88.50	6953.79	2439.08	-213.92	2432.49	0.93	1362849.24	3200101.52	N 40 19 37.92 W 104 46 56.25	
	9679.00	88.04	88.78	6955.49	2534.87	-211.64	2528.45	1.99	1362851.52	3200197.47	N 40 19 37.93 W 104 46 55.01	
	9774.00	88.11	89.02	6958.68	2629.65	-209.82	2623.38	0.26	1362853.34	3200292.39	N 40 19 37.94 W 104 46 53.79	
	9869.00	88.83	88.27	6961.22	2724.42	-207.57	2718.32	1.09	1362855.59	3200387.32	N 40 19 37.96 W 104 46 52.56	
	9964.00	88.97	89.45	6963.04	2819.23	-205.68	2813.28	1.25	1362857.48	3200482.28	N 40 19 37.97 W 104 46 51.33	
	10059.00	88.93	88.93	6964.78	2914.08	-204.34	2908.25	0.55	1362858.82	3200577.25	N 40 19 37.97 W 104 46 50.11	
	10154.00	91.96	89.31	6964.05	3008.92	-202.88	3003.23	3.21	1362860.28	3200672.22	N 40 19 37.98 W 104 46 48.88	
	10249.00	92.79	88.96	6960.11	3103.69	-201.45	3098.13	0.95	1362861.71	3200767.13	N 40 19 37.99 W 104 46 47.66	
	10345.00	91.38	89.26	6956.62	3199.48	-199.96	3194.06	1.50	1362863.20	3200863.04	N 40 19 37.99 W 104 46 46.42	
	10440.00	90.76	91.22	6954.84	3294.40	-200.36	3289.03	2.16	1362862.80	3200958.02	N 40 19 37.98 W 104 46 45.19	
	10535.00	92.10	91.40	6952.47	3389.35	-202.53	3383.98	1.42	1362860.63	3201052.96	N 40 19 37.95 W 104 46 43.97	
	10630.00	90.89	92.49	6949.99	3484.32	-205.75	3478.89	1.71	1362857.41	3201147.86	N 40 19 37.91 W 104 46 42.74	
	10725.00	92.13	91.33	6947.49	3579.28	-208.92	3573.80	1.79	1362854.24	3201242.77	N 40 19 37.87 W 104 46 41.52	
	10820.00	89.73	91.65	6945.95	3674.25	-211.39	3668.75	2.55	1362851.77	3201337.71	N 40 19 37.84 W 104 46 40.29	
	10916.00	88.35	91.66	6947.56	3770.23	-214.16	3764.69	1.44	1362849.00	3201433.65	N 40 19 37.81 W 104 46 39.05	
	11011.00	89.86	91.19	6949.04	3865.20	-216.52	3859.65	1.66	1362846.64	3201528.60	N 40 19 37.78 W 104 46 37.83	
	11106.00	91.37	90.98	6948.02	3960.17	-218.32	3954.62	1.60	1362844.84	3201623.57	N 40 19 37.75 W 104 46 36.60	
	11201.00	91.17	91.19	6945.91	4055.13	-220.12	4049.58	0.31	1362843.04	3201718.53	N 40 19 37.73 W 104 46 35.37	
	11296.00	90.52	90.56	6944.51	4150.09	-221.57	4144.56	0.95	1362841.59	3201813.50	N 40 19 37.70 W 104 46 34.15	
	11391.00	89.17	89.45	6944.77	4245.01	-221.58	4239.55	1.84	1362841.58	3201908.50	N 40 19 37.70 W 104 46 32.92	
	11486.00	91.13	88.46	6944.52	4339.85	-219.85	4334.53	2.31	1362843.32	3202003.47	N 40 19 37.71 W 104 46 31.70	
	11581.00	90.86	89.76	6942.87	4434.68	-218.37	4429.50	1.40	1362844.79	3202098.44	N 40 19 37.71 W 104 46 30.47	
	11677.00	87.63	90.15	6944.14	4530.58	-218.29	4525.48	3.39	1362844.87	3202194.41	N 40 19 37.71 W 104 46 29.23	
	11772.00	85.49	90.77	6949.84	4625.36	-219.06	4620.30	2.34	1362844.11	3202289.23	N 40 19 37.69 W 104 46 28.01	
	11867.00	86.25	89.90	6956.68	4720.06	-219.61	4715.05	1.21	1362843.55	3202383.97	N 40 19 37.68 W 104 46 26.78	
Last IFR Survey	11953.00	86.94	90.02	6961.79	4805.83	-219.55	4800.90	0.81	1362843.61	3202469.82	N 40 19 37.67 W 104 46 25.67	
Projection to Bit	12018.00	86.94	90.02	6965.26	4870.69	-219.57	4865.81	0.00	1362843.59	3202534.72	N 40 19 37.67 W 104 46 24.84	

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
Surface	1	0.000	30.000	Act Stns	13.250	9.625	ZERO	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'
Surface	1	380.000	640.000	Act Stns	13.250	9.625	SLB_EMS-STD	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'
Intermediate	1	640.000	6216.000	Act Stns	8.750	7.000	SLB_MWD-STD	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'
Intermediate	1	6216.000	7262.000	Act Stns	8.750	7.000	SLB_MWD+DMAG	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'
* Lateral	1	7262.000	11953.000	Act Stns	6.125	4.500	SLB_MWD+IFR+DMAG	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'
Projection to Bit	1	11953.000	12018.000	Act Stns	6.125	4.500	SLB_BLIND+TREND	Original Hole / Five Rivers K09-66-1HN MWD+IFR 0' to 12018'

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