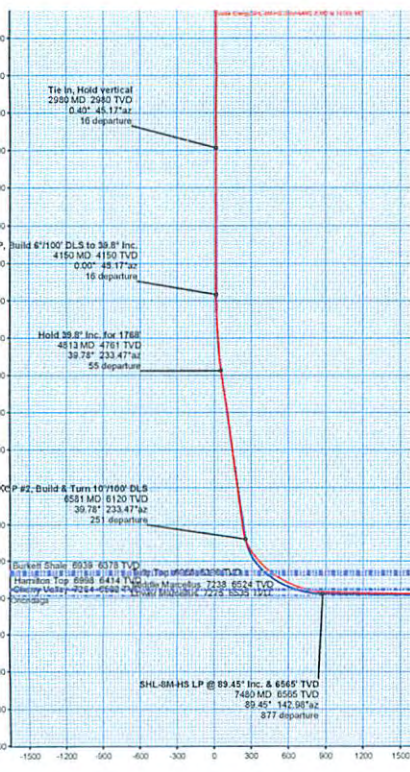
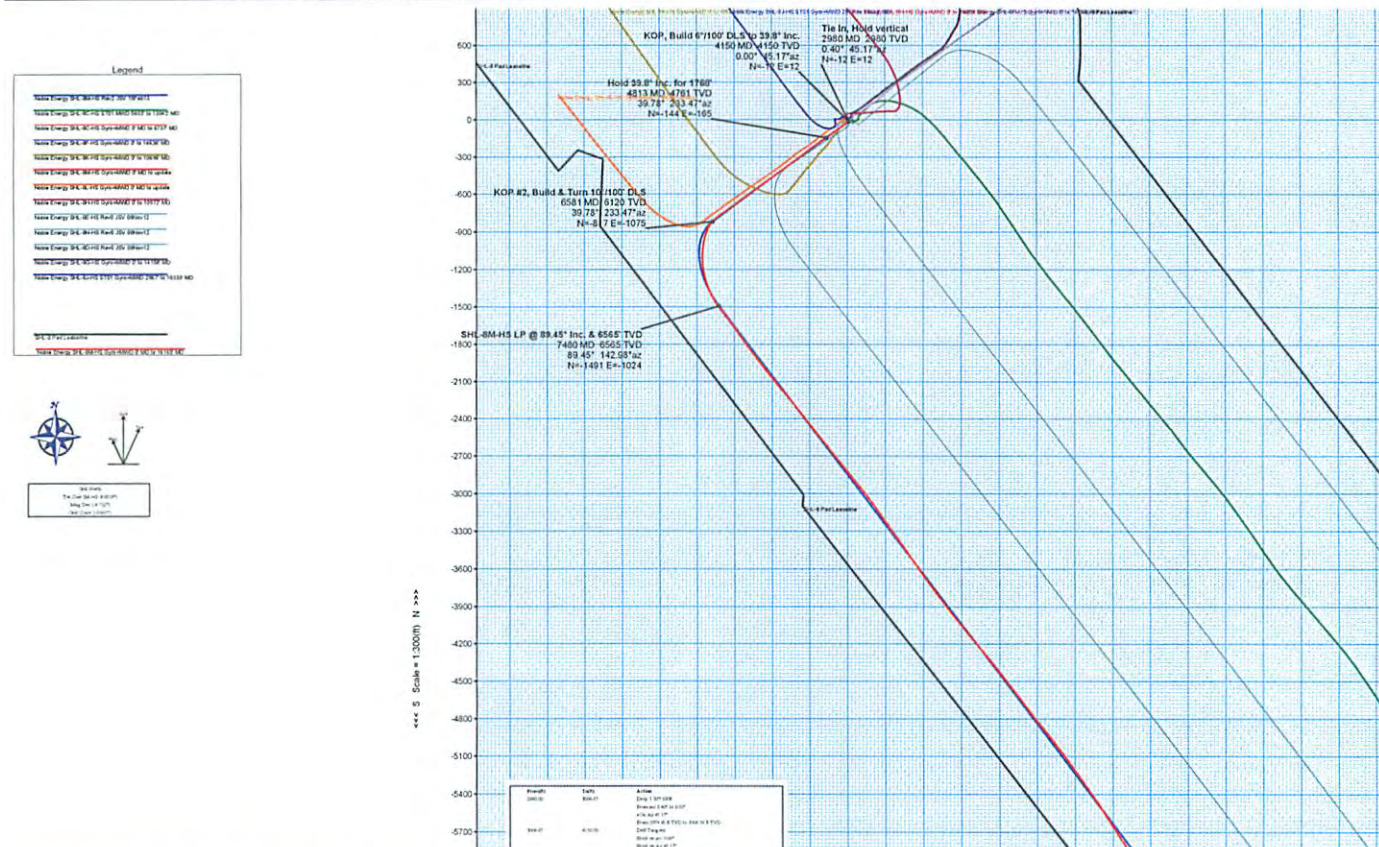




Noble Energy



WELL	SHL-8M-HS	FIELD	WV Marshall County (NAD 27)	STRUCTURE	Precision 543
Magnetics Parameters	Model: 800M 2012 Dip: 47.423° Mag Dec: -8.712°	Date	February 15, 2013	Surface Location	NAD27 West Virginia State Plane, Northern Zone, U.S. Feet N: 39 57 18.596 Easting: 170647.23 81.9 Grid Corner: -0.641° Scale Factor: 0.9999724
				Minimums	Max: 55.8M-615 Plan: Rev 2 REV 1W-6113 TVD Ref: KRI(149.498 above MSL) TVD Ref Date: February 15, 2013



Depth	True	Actual
2980.00	0.00	0.00
3000.00	0.00	0.00
3020.00	0.00	0.00
3040.00	0.00	0.00
3060.00	0.00	0.00
3080.00	0.00	0.00
3100.00	0.00	0.00
3120.00	0.00	0.00
3140.00	0.00	0.00
3160.00	0.00	0.00
3180.00	0.00	0.00
3200.00	0.00	0.00
3220.00	0.00	0.00
3240.00	0.00	0.00
3260.00	0.00	0.00
3280.00	0.00	0.00
3300.00	0.00	0.00
3320.00	0.00	0.00
3340.00	0.00	0.00
3360.00	0.00	0.00
3380.00	0.00	0.00
3400.00	0.00	0.00
3420.00	0.00	0.00
3440.00	0.00	0.00
3460.00	0.00	0.00
3480.00	0.00	0.00
3500.00	0.00	0.00
3520.00	0.00	0.00
3540.00	0.00	0.00
3560.00	0.00	0.00
3580.00	0.00	0.00
3600.00	0.00	0.00
3620.00	0.00	0.00
3640.00	0.00	0.00
3660.00	0.00	0.00
3680.00	0.00	0.00
3700.00	0.00	0.00
3720.00	0.00	0.00
3740.00	0.00	0.00
3760.00	0.00	0.00
3780.00	0.00	0.00
3800.00	0.00	0.00
3820.00	0.00	0.00
3840.00	0.00	0.00
3860.00	0.00	0.00
3880.00	0.00	0.00
3900.00	0.00	0.00
3920.00	0.00	0.00
3940.00	0.00	0.00
3960.00	0.00	0.00
3980.00	0.00	0.00
4000.00	0.00	0.00
4020.00	0.00	0.00
4040.00	0.00	0.00
4060.00	0.00	0.00
4080.00	0.00	0.00
4100.00	0.00	0.00
4120.00	0.00	0.00
4140.00	0.00	0.00
4160.00	0.00	0.00
4180.00	0.00	0.00
4200.00	0.00	0.00
4220.00	0.00	0.00
4240.00	0.00	0.00
4260.00	0.00	0.00
4280.00	0.00	0.00
4300.00	0.00	0.00
4320.00	0.00	0.00
4340.00	0.00	0.00
4360.00	0.00	0.00
4380.00	0.00	0.00
4400.00	0.00	0.00
4420.00	0.00	0.00
4440.00	0.00	0.00
4460.00	0.00	0.00
4480.00	0.00	0.00
4500.00	0.00	0.00
4520.00	0.00	0.00
4540.00	0.00	0.00
4560.00	0.00	0.00
4580.00	0.00	0.00
4600.00	0.00	0.00
4620.00	0.00	0.00
4640.00	0.00	0.00
4660.00	0.00	0.00
4680.00	0.00	0.00
4700.00	0.00	0.00
4720.00	0.00	0.00
4740.00	0.00	0.00
4760.00	0.00	0.00
4780.00	0.00	0.00
4800.00	0.00	0.00
4820.00	0.00	0.00
4840.00	0.00	0.00
4860.00	0.00	0.00
4880.00	0.00	0.00
4900.00	0.00	0.00
4920.00	0.00	0.00
4940.00	0.00	0.00
4960.00	0.00	0.00
4980.00	0.00	0.00
5000.00	0.00	0.00
5020.00	0.00	0.00
5040.00	0.00	0.00
5060.00	0.00	0.00
5080.00	0.00	0.00
5100.00	0.00	0.00
5120.00	0.00	0.00
5140.00	0.00	0.00
5160.00	0.00	0.00
5180.00	0.00	0.00
5200.00	0.00	0.00
5220.00	0.00	0.00
5240.00	0.00	0.00
5260.00	0.00	0.00
5280.00	0.00	0.00
5300.00	0.00	0.00
5320.00	0.00	0.00
5340.00	0.00	0.00
5360.00	0.00	0.00
5380.00	0.00	0.00
5400.00	0.00	0.00
5420.00	0.00	0.00
5440.00	0.00	0.00
5460.00	0.00	0.00
5480.00	0.00	0.00
5500.00	0.00	0.00
5520.00	0.00	0.00
5540.00	0.00	0.00
5560.00	0.00	0.00
5580.00	0.00	0.00
5600.00	0.00	0.00
5620.00	0.00	0.00
5640.00	0.00	0.00
5660.00	0.00	0.00
5680.00	0.00	0.00
5700.00	0.00	0.00
5720.00	0.00	0.00
5740.00	0.00	0.00
5760.00	0.00	0.00
5780.00	0.00	0.00
5800.00	0.00	0.00
5820.00	0.00	0.00
5840.00	0.00	0.00
5860.00	0.00	0.00
5880.00	0.00	0.00
5900.00	0.00	0.00
5920.00	0.00	0.00
5940.00	0.00	0.00
5960.00	0.00	0.00
5980.00	0.00	0.00
6000.00	0.00	0.00
6020.00	0.00	0.00
6040.00	0.00	0.00
6060.00	0.00	0.00
6080.00	0.00	0.00
6100.00	0.00	0.00
6120.00	0.00	0.00
6140.00	0.00	0.00
6160.00	0.00	0.00
6180.00	0.00	0.00
6200.00	0.00	0.00
6220.00	0.00	0.00
6240.00	0.00	0.00
6260.00	0.00	0.00
6280.00	0.00	0.00
6300.00	0.00	0.00
6320.00	0.00	0.00
6340.00	0.00	0.00
6360.00	0.00	0.00
6380.00	0.00	0.00
6400.00	0.00	0.00
6420.00	0.00	0.00
6440.00	0.00	0.00
6460.00	0.00	0.00
6480.00	0.00	0.00
6500.00	0.00	0.00
6520.00	0.00	0.00
6540.00	0.00	0.00
6560.00	0.00	0.00
6580.00	0.00	0.00
6600.00	0.00	0.00
6620.00	0.00	0.00
6640.00	0.00	0.00
6660.00	0.00	0.00
6680.00	0.00	0.00
6700.00	0.00	0.00
6720.00	0.00	0.00
6740.00	0.00	0.00
6760.00	0.00	0.00
6780.00	0.00	0.00
6800.00	0.00	0.00
6820.00	0.00	0.00
6840.00	0.00	0.00
6860.00	0.00	0.00
6880.00	0.00	0.00
6900.00	0.00	0.00
6920.00	0.00	0.00
6940.00	0.00	0.00
6960.00	0.00	0.00
6980.00	0.00	0.00
7000.00	0.00	0.00
7020.00	0.00	0.00
7040.00	0.00	0.00
7060.00	0.00	0.00
7080.00	0.00	0.00
7100.00	0.00	0.00
7120.00	0.00	0.00
7140.00	0.00	0.00
7160.00	0.00	0.00
7180.00	0.00	0.00
7200.00	0.00	0.00
7220.00	0.00	0.00
7240.00	0.00	0.00
7260.00	0.00	0.00
7280.00	0.00	0.00
7300.00	0.00	0.00
7320.00	0.00	0.00
7340.00	0.00	0.00
7360.00	0.00	0.00
7380.00	0.00	0.00
7400.00	0.00	0.00
7420.00	0.00	0.00
7440.00	0.00	0.00
7460.00	0.00	0.00
7480.00	0.00	0.00
7500.00	0.00	0.00
7520.00	0.00	0.00
7540.00	0.00	0.00
7560.00	0.00	0.00
7580.00	0.00	0.00
7600.00	0.00	0.00
7620.00	0.00	0.00
7640.00	0.00	0.00
7660.00	0.00	0.00
7680.00	0.00	0.00
7700.00	0.00	0.00
7720.00	0.00	0.00
7740.00	0.00	0.00
7760.00	0.00	0.00
7780.00	0.00	0.00
7800.00	0.00	0.00

Section	Start	End	Angle	Rate	Length	Delta
Section 1	2980.00	3000.00	0.00°	0.00	20.00	0.00
Section 2	3000.00	3020.00	0.00°	0.00	20.00	0.00
Section 3	3020.00	3040.00	0.00°	0.00	20.00	0.00
Section 4	3040.00	3060.00	0.00°	0.00	20.00	0.00
Section 5	3060.00	3080.00	0.00°	0.00	20.00	0.00
Section 6	3080.00	3100.00	0.00°	0.00	20.00	0.00
Section 7	3100.00	3120.00	0.00°	0.00	20.00	0.00
Section 8	3120.00	3140.00	0.00°	0.00	20.00	0.00
Section 9	3140.00	3160.00	0.00°	0.00	20.00	0.00
Section 10	3160.00	3180.00	0.00°	0.00	20.00	0.00
Section 11	3180.00	3200.00	0.00°	0.00	20.00	0.00
Section 12	3200.00	3220.00	0.00°	0.00	20.00	0.00
Section 13	3220.00	3240.00	0.00°	0.00	20.00	0.00
Section 14	3240.00	3260.00	0.00°	0.00	20.00	0.00
Section 15	3260.00	3280.00	0.00°	0.00	20.00	0.00
Section 16	3280.00	3300.00	0.00°	0.00	20.00	0.00
Section 17	3300.00	3320.00	0.00°	0.00	20.00	0.00
Section 18	3320.00	3340.00	0.00°	0.00	20.00	0.00
Section 19	3340.00	3360.00	0.00°	0.00	20.00	0.00
Section						

4705101557



Noble Energy SHL-8M-HS Gyro+MWD 0' MD to 16165' MD Survey Report

(Def Survey)

Report Date: March 04, 2013 - 07:17 AM
Client: Noble Energy
Field: WV Marshall County (NAD 27)
Structure / Slot: CNX/Noble Energy SHL-8 Pad / SHL-8M-HS
Well: SHL-8M-HS
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Noble Energy SHL-8M-HS Gyro+MWD 0' MD to 16165' MD
Survey Date: February 18, 2013
Tort / AHD / DDI / ERD Ratio: 232.902° / 10830.698 ft / 6.790 / 1.639
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 57' 19.59831", W 80° 32' 8.40011"
Location Grid N/E Y/X: N 531786.194 ftUS, E 1709667.227 ftUS
CRS Grid Convergence Angle: -0.6605°
Grid Scale Factor: 0.99995724

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 153.462° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 1149.490 ft above MSL
Seabed / Ground Elevation: 1131.470 ft above MSL
Magnetic Declination: -8.712°
Total Gravity Field Strength: 999.3811mgn (9.80665 Based)
Total Magnetic Field Strength: 52740.478 nT
Magnetic Dip Angle: 67.422°
Declination Date: February 18, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: -0.6605°
Total Corr Mag North->Grid North: -8.0519°

Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Directional Difficulty Index
SHL	0.00	0.00	0.00	0.00	-1149.49	0.00	0.00	0.00	N/A	N/A	N/A	531786.19	1709667.23	N 39 57 19.60	W 80 32 8.40	0.00
	100.00	0.25	174.41	100.00	-1049.49	0.25	-0.22	0.02	0.25	0.25	0.00	531785.98	1709667.25	N 39 57 19.60	W 80 32 8.40	0.00
	200.00	0.32	140.79	200.00	-949.49	0.68	-0.65	0.22	0.18	0.07	-33.62	531785.54	1709667.45	N 39 57 19.59	W 80 32 8.40	0.00
	300.00	0.38	172.31	300.00	-849.49	1.27	-1.20	0.44	0.20	0.06	31.52	531785.00	1709667.67	N 39 57 19.59	W 80 32 8.39	0.00
	400.00	0.38	147.17	399.99	-749.50	1.91	-1.80	0.66	0.17	0.00	-25.14	531784.39	1709667.89	N 39 57 19.58	W 80 32 8.39	0.19
	500.00	0.46	100.80	499.99	-649.50	2.48	-2.16	1.24	0.34	0.08	-46.37	531784.04	1709668.47	N 39 57 19.58	W 80 32 8.38	0.48
	600.00	0.24	129.55	599.99	-549.50	2.92	-2.37	1.79	0.27	-0.22	28.75	531783.83	1709669.02	N 39 57 19.58	W 80 32 8.38	0.66
	700.00	0.37	147.19	699.99	-449.50	3.43	-2.77	2.13	0.16	0.13	17.64	531783.42	1709669.36	N 39 57 19.57	W 80 32 8.37	0.77
	800.00	0.37	148.26	799.99	-349.50	4.07	-3.32	2.48	0.01	0.00	1.07	531782.88	1709669.70	N 39 57 19.57	W 80 32 8.37	0.84
	900.00	0.18	150.54	899.99	-249.50	4.55	-3.73	2.72	0.19	-0.19	2.28	531782.47	1709669.95	N 39 57 19.56	W 80 32 8.36	0.94
	1000.00	0.44	141.34	999.98	-149.51	5.08	-4.16	3.04	0.26	0.26	-9.20	531782.03	1709670.27	N 39 57 19.56	W 80 32 8.36	1.04
	1100.00	0.44	153.16	1099.98	-49.51	5.84	-4.81	3.45	0.09	0.00	11.82	531781.39	1709670.68	N 39 57 19.55	W 80 32 8.36	1.12
	1200.00	0.43	149.19	1199.98	50.49	6.60	-5.47	3.82	0.03	-0.01	-3.97	531780.72	1709671.05	N 39 57 19.54	W 80 32 8.35	1.17
	1300.00	0.61	141.33	1299.97	150.48	7.50	-6.21	4.34	0.19	0.18	-7.86	531779.99	1709671.57	N 39 57 19.54	W 80 32 8.34	1.27
	1400.00	0.57	146.25	1399.97	250.48	8.51	-7.04	4.95	0.06	-0.04	4.92	531779.16	1709672.18	N 39 57 19.53	W 80 32 8.34	1.33
	1500.00	0.58	158.01	1499.96	350.47	9.51	-7.92	5.42	0.12	0.01	11.76	531778.27	1709672.64	N 39 57 19.52	W 80 32 8.33	1.40
	1600.00	0.65	153.37	1599.96	450.47	10.56	-8.90	5.86	0.09	0.07	-4.64	531777.30	1709673.09	N 39 57 19.51	W 80 32 8.32	1.46
	1700.00	0.49	166.60	1699.95	550.46	11.56	-9.82	6.22	0.21	-0.16	13.23	531776.37	1709673.44	N 39 57 19.50	W 80 32 8.32	1.53
	1800.00	0.55	158.83	1799.95	650.46	12.46	-10.68	6.50	0.11	0.06	-9.77	531775.52	1709673.73	N 39 57 19.49	W 80 32 8.32	1.58
	1900.00	0.44	149.70	1899.95	750.46	13.32	-11.45	6.89	0.13	-0.11	-7.13	531774.74	1709674.11	N 39 57 19.49	W 80 32 8.31	1.62
	2000.00	0.55	131.55	1999.94	850.45	14.15	-12.10	7.44	0.19	0.11	-18.15	531774.09	1709674.67	N 39 57 19.48	W 80 32 8.30	1.67
	2100.00	0.55	130.07	2099.94	950.45	15.03	-12.73	8.16	0.01	0.00	-1.48	531773.47	1709675.39	N 39 57 19.47	W 80 32 8.29	1.70
	2200.00	0.47	118.43	2199.93	1050.44	15.81	-13.23	8.89	0.13	-0.08	-11.64	531772.96	1709676.12	N 39 57 19.47	W 80 32 8.28	1.75
	2300.00	0.33	101.69	2299.93	1150.44	16.33	-13.49	9.54	0.18	-0.14	-16.74	531772.71	1709676.76	N 39 57 19.47	W 80 32 8.28	1.79

03/07/2014

4705101557

Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Eastings (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
	2400.00	0.33	99.86	2399.93	1250.44	16.67	-13.59	10.10	0.01	0.00	-1.83	531772.60	1709677.33	N 39 57 19.47	W 80 32 8.27	1.80
	2500.00	0.27	74.79	2499.93	1350.44	16.89	-13.58	10.61	0.14	-0.06	-25.07	531772.61	1709677.84	N 39 57 19.47	W 80 32 8.26	1.83
	2600.00	0.23	46.95	2599.93	1450.44	16.88	-13.38	10.99	0.13	-0.04	-27.84	531772.81	1709678.21	N 39 57 19.47	W 80 32 8.26	1.86
	2700.00	0.27	40.67	2699.93	1550.44	16.73	-13.07	11.29	0.05	0.04	-6.28	531773.13	1709678.51	N 39 57 19.47	W 80 32 8.25	1.87
	2800.00	0.15	37.39	2799.93	1650.44	16.58	-12.78	11.52	0.12	-0.12	-3.28	531773.41	1709678.75	N 39 57 19.47	W 80 32 8.25	1.89
	2900.00	0.38	41.19	2899.92	1750.43	16.40	-12.43	11.82	0.23	0.23	-3.80	531773.76	1709679.04	N 39 57 19.48	W 80 32 8.25	1.93
	2980.00	0.40	45.17	2979.92	1830.43	16.21	-12.03	12.19	0.04	0.03	4.98	531774.16	1709679.42	N 39 57 19.48	W 80 32 8.24	1.94
	3075.00	0.40	106.74	3074.92	1925.43	16.34	-11.90	12.74	0.43	0.00	64.81	531774.30	1709679.97	N 39 57 19.48	W 80 32 8.23	1.99
	3125.00	0.47	101.48	3124.92	1975.43	16.58	-11.99	13.11	0.16	0.14	-10.52	531774.21	1709680.34	N 39 57 19.48	W 80 32 8.23	2.01
	3220.00	0.86	295.66	3219.92	2070.43	16.26	-11.76	12.85	1.39	0.41	-174.55	531774.44	1709680.08	N 39 57 19.48	W 80 32 8.23	2.13
	3314.00	1.08	291.84	3313.90	2164.41	15.04	-11.12	11.39	0.24	0.23	-4.06	531775.07	1709678.62	N 39 57 19.49	W 80 32 8.25	2.17
	3409.00	0.78	298.41	3408.89	2259.40	13.84	-10.48	9.99	0.33	-0.32	6.92	531775.72	1709677.22	N 39 57 19.50	W 80 32 8.27	2.22
	3504.00	1.18	294.51	3503.88	2354.39	12.55	-9.77	8.53	0.43	0.42	-4.11	531776.43	1709675.76	N 39 57 19.50	W 80 32 8.29	2.28
	3598.00	0.32	112.46	3597.87	2448.38	12.00	-9.46	7.90	1.60	-0.91	189.31	531776.73	1709675.12	N 39 57 19.51	W 80 32 8.30	2.37
	3693.00	0.61	109.59	3692.87	2543.38	12.56	-9.74	8.62	0.31	0.31	-3.02	531776.46	1709675.84	N 39 57 19.50	W 80 32 8.29	2.40
	3788.00	0.41	67.18	3787.86	2638.37	12.95	-9.77	9.41	0.44	-0.21	-44.64	531776.42	1709676.63	N 39 57 19.50	W 80 32 8.28	2.43
	3882.00	0.28	101.98	3881.86	2732.37	13.11	-9.69	9.94	0.26	-0.14	37.02	531776.50	1709677.17	N 39 57 19.50	W 80 32 8.27	2.45
	3977.00	0.23	37.19	3976.86	2827.37	13.17	-9.59	10.28	0.29	-0.05	-88.20	531776.61	1709677.51	N 39 57 19.50	W 80 32 8.27	2.47
	4072.00	0.08	4071.86	4072.00	2922.37	13.10	-9.42	10.46	0.19	-0.16	42.17	531776.77	1709677.69	N 39 57 19.51	W 80 32 8.26	2.48
	4122.00	1.65	230.64	4121.85	2972.36	13.27	-9.87	9.94	3.44	3.14	306.78	531776.33	1709677.17	N 39 57 19.50	W 80 32 8.27	2.56
	4166.00	3.73	225.86	4165.80	3016.31	13.84	-11.27	8.42	4.75	4.73	-10.86	531774.93	1709675.65	N 39 57 19.49	W 80 32 8.29	2.66
	4215.00	6.58	226.21	4214.60	3065.11	15.16	-14.32	5.25	5.82	5.82	0.71	531771.87	1709672.48	N 39 57 19.46	W 80 32 8.33	2.79
	4261.00	9.18	227.25	4260.16	3110.67	16.97	-18.64	0.66	5.66	5.65	2.26	531767.56	1709667.88	N 39 57 19.41	W 80 32 8.39	2.93
	4306.00	11.42	226.09	4304.43	3154.94	19.30	-24.16	-5.19	5.00	4.98	-2.58	531762.03	1709662.04	N 39 57 19.36	W 80 32 8.46	3.06
	4351.00	13.35	224.62	4348.38	3198.89	22.31	-30.95	-12.05	4.35	4.29	-3.27	531755.24	1709655.18	N 39 57 19.29	W 80 32 8.55	3.16
	4395.00	15.20	228.35	4391.03	3241.54	25.45	-38.40	-19.93	4.69	4.20	8.48	531747.79	1709647.30	N 39 57 19.22	W 80 32 8.65	3.27
	4440.00	17.18	231.73	4434.24	3284.75	28.34	-46.44	-29.56	4.87	4.40	7.51	531739.76	1709637.67	N 39 57 19.14	W 80 32 8.77	3.37
	4485.00	19.40	235.08	4476.96	3327.47	30.78	-54.84	-40.90	5.46	4.93	7.44	531731.36	1709626.33	N 39 57 19.05	W 80 32 8.92	3.48
	4530.00	21.96	237.85	4519.06	3369.57	32.69	-63.59	-54.16	6.09	5.69	6.16	531722.60	1709613.07	N 39 57 18.96	W 80 32 9.09	3.58
	4574.00	25.12	239.25	4559.40	3409.91	34.19	-72.75	-69.15	7.29	7.18	3.18	531713.45	1709598.08	N 39 57 18.87	W 80 32 9.28	3.68
	4619.00	28.20	236.77	4599.61	3450.12	36.13	-83.46	-86.26	7.28	6.84	-5.51	531702.74	1709580.97	N 39 57 18.76	W 80 32 9.50	3.78
	4664.00	31.00	235.30	4638.73	3489.24	39.01	-95.89	-104.69	6.43	6.22	-3.27	531690.31	1709562.55	N 39 57 18.64	W 80 32 9.73	3.87
	4709.00	34.03	233.75	4676.68	3527.19	42.78	-109.93	-124.37	6.98	6.73	-3.44	531676.27	1709542.86	N 39 57 18.50	W 80 32 9.98	3.96
	4798.00	39.79	233.63	4747.81	3598.32	51.85	-141.57	-167.42	6.47	6.47	-0.13	531644.63	1709499.81	N 39 57 18.18	W 80 32 10.53	4.12
	4888.00	40.73	233.40	4816.49	3667.00	61.90	-176.16	-214.19	1.06	1.04	-0.26	531610.04	1709453.05	N 39 57 17.83	W 80 32 11.12	4.22
	4977.00	40.98	233.64	4883.80	3734.31	71.95	-210.77	-261.00	0.33	0.28	0.27	531575.43	1709406.24	N 39 57 17.49	W 80 32 11.72	4.29
	5067.00	41.36	233.19	4951.55	3802.06	82.29	-246.08	-308.57	0.54	0.42	-0.50	531540.12	1709358.67	N 39 57 17.13	W 80 32 12.33	4.36
	5156.00	40.28	232.68	5018.90	3869.41	92.92	-281.15	-354.99	1.27	-1.21	-0.57	531505.06	1709312.25	N 39 57 16.78	W 80 32 12.92	4.43
	5246.00	39.80	231.61	5087.81	3938.32	104.27	-316.67	-400.71	0.93	-0.53	-1.19	531469.53	1709266.54	N 39 57 16.42	W 80 32 13.50	4.49
	5335.00	40.16	232.87	5156.01	4006.52	115.40	-351.69	-445.92	1.00	0.60	1.42	531434.52	1709221.33	N 39 57 16.07	W 80 32 14.07	4.54
	5425.00	39.59	233.89	5225.08	4075.59	125.50	-386.11	-492.23	0.96	-0.63	1.13	531400.10	1709175.02	N 39 57 15.73	W 80 32 14.66	4.59
	5514.00	39.06	234.70	5293.93	4144.44	134.49	-419.02	-538.02	0.83	-0.60	0.91	531367.19	1709129.23	N 39 57 15.40	W 80 32 15.25	4.63
	5604.00	38.76	234.77	5363.96	4214.47	143.07	-451.66	-584.18	0.34	-0.33	0.08	531334.55	1709083.08	N 39 57 15.07	W 80 32 15.83	4.67
	5693.00	38.40	234.94	5433.53	4284.04	151.37	-483.61	-629.56	0.42	-0.40	0.19	531302.60	1709037.69	N 39 57 14.75	W 80 32 16.41	4.70
	5782.00	37.97	233.08	5504.28	4354.79	160.51	-516.30	-674.58	1.36	-0.48	-2.07	531269.92	1708992.68	N 39 57 14.42	W 80 32 16.99	4.74
	5872.00	37.52	233.98	5574.65	4425.16	169.91	-548.68	-718.39	0.80	-0.51	1.01	531237.53	1708948.87	N 39 57 14.09	W 80 32 17.54	4.77
	5961.00	38.43	233.70	5644.81	4495.32	179.06	-581.00	-762.60	1.04	1.02	-0.31	531205.22	1708904.66	N 39 57 13.77	W 80 32 18.11	4.80
	6051.00	39.36	233.46	5714.85	4565.36	188.76	-614.55	-808.07	1.05	1.03	-0.27	531171.67	1708859.19	N 39 57 13.43	W 80 32 18.68	4.84

4705101557

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°100ft)	BR (°100ft)	TR (°100ft)	Northing (ftUS)	Eastng (ftUS)	Latitude (N/S °'")	Longitude (E/W °'")	Directional Difficulty Index
	6141.00	38.75	233.91	5784.74	4635.25	198.39	-648.13	-853.76	0.75	-0.68	0.50	531138.09	1708813.50	N 39 57 13.10 W	80 32 19.27	4.87
	6230.00	38.49	233.64	5854.28	4704.79	207.74	-680.96	-898.57	0.35	-0.29	-0.30	531105.27	1708768.69	N 39 57 12.77 W	80 32 19.84	4.89
	6320.00	40.21	234.28	5923.87	4744.38	217.15	-714.53	-944.72	1.96	1.91	0.71	531071.70	1708722.55	N 39 57 12.43 W	80 32 20.42	4.92
	6409.00	40.70	234.76	5991.59	4842.10	226.13	-748.04	-991.74	0.65	0.55	0.54	531038.18	1708675.53	N 39 57 12.09 W	80 32 21.02	4.95
	6499.00	40.50	233.87	6059.93	4910.44	235.44	-782.21	-1039.32	0.68	-0.22	-0.99	531004.02	1708627.96	N 39 57 11.75 W	80 32 21.63	4.97
	6544.00	40.88	226.64	6094.07	4944.58	242.14	-800.94	-1061.84	10.50	0.84	-16.07	530985.29	1708605.44	N 39 57 11.56 W	80 32 21.92	5.01
	6588.00	41.54	219.47	6127.19	4977.70	252.24	-822.10	-1081.59	10.84	1.50	-16.30	530964.13	1708585.68	N 39 57 11.35 W	80 32 22.17	5.05
	6633.00	42.47	211.74	6160.65	5011.16	266.31	-846.56	-1099.08	11.67	2.07	-17.18	530939.67	1708568.20	N 39 57 11.11 W	80 32 22.39	5.09
	6678.00	43.61	205.49	6193.55	5044.06	283.85	-873.50	-1113.76	9.81	2.53	-13.89	530912.73	1708553.52	N 39 57 10.84 W	80 32 22.57	5.12
	6723.00	44.35	199.91	6225.95	5076.46	304.24	-902.31	-1125.80	8.76	1.64	-12.40	530883.92	1708541.48	N 39 57 10.55 W	80 32 22.72	5.15
	6768.00	44.93	195.78	6257.97	5108.48	326.84	-932.40	-1135.48	6.58	1.29	-9.18	530853.84	1708531.80	N 39 57 10.25 W	80 32 22.84	5.18
	6812.00	46.52	192.12	6288.69	5139.20	350.80	-962.96	-1143.06	6.97	3.61	-8.32	530823.27	1708524.22	N 39 57 9.95 W	80 32 22.93	5.20
	6857.00	48.67	188.84	6319.04	5169.55	377.33	-995.63	-1149.08	7.20	4.78	-7.29	530790.61	1708518.20	N 39 57 9.63 W	80 32 23.01	5.23
	6902.00	51.31	186.05	6347.98	5198.49	405.91	-1029.80	-1153.53	7.55	5.87	-6.20	530756.44	1708513.75	N 39 57 9.29 W	80 32 23.06	5.25
	6947.00	54.83	183.09	6375.01	5225.52	436.71	-1065.65	-1156.37	9.42	7.82	-6.58	530720.60	1708509.99	N 39 57 8.94 W	80 32 23.09	5.28
	6991.00	57.47	179.82	6399.52	5250.03	468.97	-1102.16	-1157.29	8.61	6.00	-7.43	530684.08	1708509.99	N 39 57 8.57 W	80 32 23.10	5.31
	7036.00	59.61	175.82	6423.02	5273.53	503.93	-1140.51	-1155.81	8.95	4.76	-8.89	530645.74	1708511.47	N 39 57 8.20 W	80 32 23.07	5.33
	7081.00	61.73	172.79	6445.06	5295.57	540.59	-1179.53	-1151.91	7.53	4.71	-6.73	530606.71	1708515.37	N 39 57 7.81 W	80 32 23.02	5.36
	7126.00	63.21	169.18	6465.87	5316.38	578.64	-1218.93	-1145.65	7.84	3.29	-8.02	530567.31	1708521.63	N 39 57 7.42 W	80 32 22.93	5.38
	7171.00	66.15	165.99	6485.11	5335.62	618.08	-1258.65	-1136.89	9.15	6.53	-7.09	530527.60	1708530.39	N 39 57 7.03 W	80 32 22.81	5.41
	7215.00	69.40	163.47	6501.76	5352.27	658.02	-1297.93	-1126.90	9.09	7.39	-5.73	530488.32	1708541.12	N 39 57 6.64 W	80 32 22.67	5.43
	7260.00	72.92	160.27	6516.29	5366.80	700.14	-1338.39	-1112.90	10.32	7.82	-7.11	530447.87	1708554.38	N 39 57 6.25 W	80 32 22.49	5.46
	7305.00	76.09	156.67	6528.31	5378.82	743.32	-1378.71	-1096.98	10.44	7.04	-8.00	530407.55	1708570.30	N 39 57 5.85 W	80 32 22.28	5.48
	7350.00	79.57	151.75	6537.80	5388.31	787.29	-1418.29	-1077.84	13.19	7.73	-10.93	530367.97	1708589.44	N 39 57 5.46 W	80 32 22.03	5.51
	7394.00	83.70	146.96	6544.21	5394.72	830.68	-1455.72	-1055.65	14.28	9.39	-10.89	530330.54	1708611.62	N 39 57 5.09 W	80 32 21.74	5.54
	7439.00	86.56	143.88	6548.03	5398.54	875.07	-1492.62	-1030.21	9.32	6.36	-6.84	530293.64	1708637.06	N 39 57 4.73 W	80 32 21.41	5.57
	7484.00	87.97	142.84	6550.17	5400.68	919.32	-1528.69	-1003.38	3.89	3.13	-2.31	530257.57	1708663.89	N 39 57 4.38 W	80 32 21.06	5.58
	7564.00	88.70	142.56	6552.50	5403.01	997.88	-1592.30	-954.93	0.99	0.91	-0.35	530193.97	1708712.34	N 39 57 3.75 W	80 32 20.42	5.61
	7654.00	89.11	144.00	6554.22	5404.73	1086.44	-1664.43	-901.13	1.66	0.46	1.60	530121.84	1708766.14	N 39 57 3.05 W	80 32 19.72	5.63
	7744.00	88.66	144.37	6555.97	5406.48	1175.25	-1737.39	-848.47	0.65	-0.50	0.41	530048.88	1708818.79	N 39 57 2.33 W	80 32 19.04	5.66
	7833.00	88.59	144.54	6558.11	5408.62	1263.13	-1809.79	-796.75	0.21	-0.08	0.19	529976.49	1708870.52	N 39 57 1.62 W	80 32 18.36	5.68
	7923.00	88.97	143.61	6560.02	5410.53	1351.90	-1882.65	-743.95	1.12	0.42	-1.03	529903.63	1708923.31	N 39 57 0.91 W	80 32 17.67	5.70
	8012.00	88.83	142.80	6561.73	5412.24	1439.46	-1953.91	-690.66	0.92	-0.16	-0.91	529832.37	1708976.60	N 39 57 0.21 W	80 32 16.98	5.72
	8102.00	88.90	141.80	6563.51	5414.02	1527.74	-2025.10	-635.63	1.11	0.08	-1.11	529761.18	1709031.62	N 39 56 59.51 W	80 32 16.26	5.74
	8191.00	89.35	141.17	6564.87	5415.38	1614.79	-2094.73	-580.22	0.87	0.51	-0.71	529691.56	1709087.04	N 39 56 58.83 W	80 32 15.54	5.76
	8281.00	89.14	140.19	6566.06	5416.57	1702.55	-2164.35	-523.19	1.11	-0.23	-1.09	529621.94	1709144.06	N 39 56 58.15 W	80 32 14.80	5.78
	8370.00	88.94	141.73	6567.55	5418.06	1789.43	-2233.47	-467.15	1.74	-0.22	1.73	529552.83	1709200.10	N 39 56 57.47 W	80 32 14.07	5.81
	8460.00	89.18	141.06	6569.03	5419.54	1877.43	-2303.79	-411.00	0.79	0.27	-0.74	529482.51	1709256.25	N 39 56 56.79 W	80 32 13.34	5.83
	8549.00	89.11	141.35	6570.35	5420.86	1964.39	-2373.15	-355.24	0.34	-0.08	0.33	529413.15	1709312.00	N 39 56 56.11 W	80 32 12.61	5.84
	8639.00	89.04	142.16	6571.81	5422.32	2052.50	-2443.82	-299.54	0.90	-0.08	0.90	529342.48	1709367.70	N 39 56 55.41 W	80 32 11.88	5.86
	8729.00	89.38	142.06	6573.05	5423.56	2140.73	-2514.84	-244.27	0.39	0.38	-0.11	529271.47	1709422.97	N 39 56 54.72 W	80 32 11.16	5.88
	8818.00	89.38	141.60	6574.01	5424.52	2227.90	-2584.81	-189.27	0.52	0.00	-0.52	529201.50	1709477.96	N 39 56 54.03 W	80 32 10.45	5.89
	8908.00	89.11	142.15	6575.20	5425.71	2316.06	-2655.60	-133.71	0.68	-0.30	0.61	529130.71	1709533.52	N 39 56 53.34 W	80 32 9.72	5.91
	8997.00	89.35	141.10	6576.39	5426.90	2403.16	-2725.36	-78.47	1.21	0.27	-1.18	529060.95	1709588.76	N 39 56 52.66 W	80 32 9.00	5.93
	9087.00	89.31	142.28	6577.45	5427.96	2491.26	-2795.98	-22.68	1.31	-0.04	1.31	528990.34	1709644.55	N 39 56 51.97 W	80 32 8.28	5.95
	9178.00	89.04	141.68	6578.73	5429.24	2578.47	-2866.08	32.13	0.74	-0.30	-0.67	528920.24	1709699.36	N 39 56 51.28 W	80 32 7.56	5.96
	9268.00	89.28	141.12	6580.05	5430.56	2666.47	-2936.41	88.28	0.68	0.27	-0.62	528849.91	1709755.50	N 39 56 50.59 W	80 32 6.83	5.98
	9358.00	89.55	141.90	6580.96	5431.47	2753.53	-3006.07	143.66	0.93	0.30	0.88	528780.26	1709810.89	N 39 56 49.91 W	80 32 6.11	5.99

8/20/2014

4705101557

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °.′.″)	Longitude (E/W °.′.″)	Directional Difficulty Index
	9445.00	89.79	143.37	6581.47	5431.98	2841.93	-3077.60	198.28	1.65	0.27	1.63	528708.73	1709865.50	N 39 56 49.21 W	80 32 5.40	6.01
	9535.00	89.45	144.77	6582.07	5432.58	2930.72	-3150.47	251.09	1.60	0.38	1.56	528635.86	1709918.31	N 39 56 48.49 W	80 32 4.71	6.03
	9624.00	89.83	145.95	6582.63	5433.14	3018.83	-3223.69	301.68	1.39	0.43	1.33	528562.65	1709968.89	N 39 56 47.78 W	80 32 4.05	6.05
	9713.00	90.24	145.16	6582.58	5433.09	3106.98	-3297.09	352.02	1.00	0.46	-0.89	528489.25	1710019.23	N 39 56 47.06 W	80 32 3.39	6.06
	9803.00	90.03	144.69	6582.36	5432.87	3195.98	-3370.74	403.74	0.57	-0.23	-0.52	528415.60	1710070.94	N 39 56 46.33 W	80 32 2.72	6.07
	9893.00	90.07	145.50	6582.29	5432.80	3285.02	-3444.55	455.24	0.90	0.04	0.90	528341.80	1710122.44	N 39 56 45.61 W	80 32 2.05	6.09
	9982.00	90.14	145.43	6582.12	5432.63	3373.16	-3517.87	505.69	0.11	0.08	-0.08	528268.48	1710172.89	N 39 56 44.89 W	80 32 1.39	6.10
	10072.00	90.17	145.53	6581.98	5432.39	3462.28	-3592.02	556.69	0.12	0.03	0.11	528194.33	1710223.89	N 39 56 44.17 W	80 32 0.72	6.11
	10161.00	90.41	144.94	6581.43	5431.94	3550.37	-3665.13	607.44	0.72	0.27	-0.66	528121.23	1710274.64	N 39 56 43.45 W	80 32 0.06	6.13
	10251.00	89.59	144.38	6581.43	5431.94	3639.31	-3738.55	659.50	1.10	-0.91	-0.62	528047.81	1710326.70	N 39 56 42.73 W	80 31 59.38	6.14
	10341.00	89.59	143.11	6582.07	5432.58	3728.01	-3811.12	712.72	1.41	0.00	-1.41	527975.24	1710379.91	N 39 56 42.02 W	80 31 58.69	6.16
	10430.00	89.76	142.45	6582.58	5433.09	3815.47	-3881.99	766.55	0.77	0.19	-0.74	527904.38	1710433.75	N 39 56 41.32 W	80 31 57.98	6.17
	10520.00	89.38	142.67	6583.25	5433.76	3903.84	-3953.45	821.26	0.49	-0.42	0.24	527832.92	1710488.45	N 39 56 40.62 W	80 31 57.27	6.18
	10610.00	89.69	142.52	6583.98	5434.49	3992.22	-4024.94	875.93	0.38	0.34	-0.17	527761.44	1710543.12	N 39 56 39.92 W	80 31 56.56	6.19
	10699.00	89.49	141.34	6584.62	5435.13	4079.42	-4095.00	930.81	1.34	-0.22	-1.33	527691.38	1710598.00	N 39 56 39.24 W	80 31 55.84	6.21
	10789.00	89.97	140.81	6585.04	5435.55	4167.33	-4165.02	987.36	0.79	0.53	-0.59	527621.36	1710654.54	N 39 56 38.55 W	80 31 55.11	6.22
	10878.00	89.79	140.49	6585.23	5435.74	4254.11	-4233.84	1043.79	0.41	-0.20	-0.36	527552.54	1710710.97	N 39 56 37.88 W	80 31 54.37	6.23
	10968.00	89.76	140.76	6585.58	5436.09	4341.86	-4303.41	1100.88	0.30	-0.03	0.30	527482.98	1710768.06	N 39 56 37.20 W	80 31 53.63	6.24
	11057.00	89.24	140.51	6586.36	5436.87	4428.63	-4372.21	1157.33	0.65	-0.58	-0.28	527414.18	1710824.50	N 39 56 36.52 W	80 31 52.90	6.25
	11147.00	89.14	142.54	6587.63	5438.14	4516.62	-4442.66	1213.32	2.26	-0.11	2.26	527343.73	1710880.49	N 39 56 35.83 W	80 31 52.17	6.27
	11236.00	89.28	142.67	6588.86	5439.37	4604.07	-4513.36	1267.36	0.21	0.16	0.15	527273.03	1710934.53	N 39 56 35.14 W	80 31 51.46	6.28
	11325.00	89.14	143.05	6590.09	5440.60	4691.55	-4584.30	1321.09	0.45	-0.16	0.43	527202.09	1710988.26	N 39 56 34.45 W	80 31 50.76	6.29
	11415.00	89.18	143.19	6591.41	5441.92	4780.07	-4656.29	1375.10	0.16	0.04	0.16	527130.12	1711042.26	N 39 56 33.74 W	80 31 50.06	6.30
	11505.00	89.04	142.27	6592.80	5443.31	4868.49	-4727.90	1429.59	1.03	-0.16	-1.02	527058.51	1711096.75	N 39 56 33.04 W	80 31 49.35	6.31
	11594.00	89.18	141.23	6594.19	5444.70	4955.62	-4797.78	1484.68	1.18	0.16	-1.17	526988.63	1711151.84	N 39 56 32.36 W	80 31 48.63	6.32
	11684.00	89.28	141.21	6595.40	5445.91	5043.57	-4867.94	1541.05	0.11	0.11	-0.02	526918.48	1711208.21	N 39 56 31.67 W	80 31 47.90	6.33
	11773.00	89.38	141.87	6596.44	5446.95	5130.64	-4937.62	1596.40	0.75	0.11	0.74	526848.79	1711263.55	N 39 56 30.99 W	80 31 47.18	6.34
	11862.00	89.28	142.52	6597.48	5447.99	5217.92	-5007.94	1650.95	0.74	-0.11	0.73	526778.48	1711318.10	N 39 56 30.30 W	80 31 46.46	6.36
	11952.00	89.35	143.73	6598.55	5449.06	5306.45	-5079.92	1704.95	1.35	0.08	1.34	526706.50	1711372.10	N 39 56 29.59 W	80 31 45.76	6.37
	12042.00	89.31	144.07	6599.61	5450.12	5395.20	-5152.64	1757.98	0.38	-0.04	0.38	526633.79	1711425.12	N 39 56 28.88 W	80 31 45.07	6.38
	12131.00	89.31	144.72	6600.68	5451.19	5483.08	-5224.99	1809.79	0.73	0.00	0.73	526561.43	1711476.93	N 39 56 28.17 W	80 31 44.39	6.39
	12221.00	89.28	143.80	6601.79	5452.30	5571.91	-5298.04	1862.35	1.02	-0.03	-1.02	526488.39	1711529.50	N 39 56 27.45 W	80 31 43.71	6.40
	12310.00	90.00	144.99	6602.34	5452.85	5659.79	-5370.40	1914.17	1.56	0.81	1.56	526416.04	1711581.31	N 39 56 26.75 W	80 31 43.03	6.41
	12400.00	89.66	145.96	6602.61	5453.12	5748.92	-5444.54	1965.17	1.14	-0.38	1.08	526341.89	1711632.31	N 39 56 26.02 W	80 31 42.37	6.42
	12489.00	89.66	146.95	6603.14	5453.65	5837.25	-5518.72	2014.35	1.11	0.00	1.11	526267.72	1711681.49	N 39 56 25.29 W	80 31 41.72	6.43
	12579.00	90.00	147.66	6603.41	5453.92	5926.73	-5594.46	2062.97	0.87	0.38	0.79	526191.99	1711730.10	N 39 56 24.55 W	80 31 41.09	6.44
	12668.00	89.97	147.98	6603.43	5453.94	6015.30	-5669.79	2110.37	0.36	-0.03	0.36	526116.66	1711777.50	N 39 56 23.81 W	80 31 40.47	6.45
	12757.00	90.03	147.32	6603.44	5453.94	6103.84	-5744.97	2157.99	0.74	0.07	-0.74	526041.48	1711825.12	N 39 56 23.07 W	80 31 39.85	6.46
	12847.00	90.76	144.70	6602.81	5453.32	6193.07	-5819.59	2208.30	3.02	0.81	-2.91	525966.87	1711875.43	N 39 56 22.34 W	80 31 39.19	6.47
	12936.00	90.45	140.78	6601.87	5452.38	6280.50	-5890.40	2262.17	4.42	-0.35	-4.40	525896.05	1711929.29	N 39 56 21.65 W	80 31 38.49	6.49
	13026.00	90.62	140.42	6601.03	5451.54	6368.23	-5959.95	2319.29	0.44	0.19	-0.40	525826.51	1711986.41	N 39 56 20.97 W	80 31 37.75	6.50
	13115.00	90.72	140.08	6599.99	5450.50	6454.87	-6028.37	2376.20	0.40	0.11	-0.38	525758.10	1712043.32	N 39 56 20.30 W	80 31 37.00	6.51
	13204.00	90.58	140.36	6598.98	5449.49	6541.50	-6096.76	2433.14	0.35	-0.16	0.31	525689.71	1712100.26	N 39 56 19.63 W	80 31 36.26	6.52
	13294.00	90.27	140.49	6598.31	5448.82	6629.18	-6166.13	2490.47	0.37	-0.34	0.14	525620.34	1712157.59	N 39 56 18.95 W	80 31 35.52	6.53
	13383.00	90.00	141.21	6598.10	5448.61	6716.03	-6235.15	2546.66	0.86	-0.30	0.81	525551.32	1712213.78	N 39 56 18.27 W	80 31 34.79	6.54
	13472.00	90.07	141.52	6598.05	5448.56	6803.05	-6304.67	2602.23	0.36	0.08	0.35	525481.81	1712269.34	N 39 56 17.59 W	80 31 34.06	6.54
	13562.00	90.03	141.36	6597.97	5448.48	6891.08	-6375.05	2658.33	0.18	-0.04	-0.18	525411.43	1712325.44	N 39 56 16.90 W	80 31 33.33	6.55
	13652.00	90.27	141.19	6597.74	5448.25	6978.07	-6444.48	2714.01	0.33	0.27	-0.19	525342.00	1712381.11	N 39 56 16.22 W	80 31 32.61	6.56
	13741.00	90.24	141.44	6597.34	5447.85	7066.06	-6514.73	2770.26	0.28	-0.03	0.28	525271.75	1712437.36	N 39 56 15.53 W	80 31 31.87	6.57

4705101557

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Eastings (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
	13830.00	89.59	142.02	6597.47	7153.20	-6594.61	2825.39	0.98	-0.73	0.65	525201.88	1712492.49	N 39 56 14.85 W	80 31 31.16	6.58
	13919.00	89.66	141.64	6598.05	7240.37	-6654.57	2880.39	0.43	0.08	-0.43	525131.92	1712547.48	N 39 56 14.16 W	80 31 30.44	6.59
	14009.00	89.38	142.19	6598.80	7328.54	-6725.41	2935.90	0.69	-0.31	0.61	525061.09	1712602.99	N 39 56 13.47 W	80 31 29.72	6.59
	14098.00	89.79	142.47	6599.45	7415.87	-6795.86	2990.29	0.56	0.46	0.31	524990.64	1712657.38	N 39 56 12.78 W	80 31 29.01	6.60
	14188.00	89.76	142.41	6599.80	7504.20	-6867.20	3045.15	0.07	-0.03	-0.07	524919.30	1712712.24	N 39 56 12.08 W	80 31 28.29	6.61
	14277.00	89.55	142.22	6600.34	7591.52	-6937.63	3099.55	0.32	-0.24	-0.21	524848.87	1712766.64	N 39 56 11.39 W	80 31 27.59	6.62
	14366.00	89.00	142.71	6601.46	7678.88	-7008.20	3153.77	0.83	-0.62	0.55	524778.31	1712820.86	N 39 56 10.70 W	80 31 26.88	6.63
	14456.00	89.00	143.12	6603.03	7767.35	-7079.99	3208.03	0.46	0.00	0.46	524706.53	1712875.12	N 39 56 10.00 W	80 31 26.17	6.63
	14545.00	89.28	143.31	6604.37	7854.92	-7151.26	3261.32	0.38	0.31	0.21	524635.26	1712928.40	N 39 56 9.30 W	80 31 25.48	6.64
	14634.00	89.24	143.65	6605.52	7942.56	-7222.78	3314.28	0.38	-0.04	0.38	524563.74	1712981.36	N 39 56 8.60 W	80 31 24.79	6.65
	14724.00	89.00	144.35	6606.90	8031.33	-7295.58	3367.18	0.82	-0.27	0.78	524490.94	1713034.25	N 39 56 7.89 W	80 31 24.10	6.66
	14813.00	89.21	144.49	6608.29	8119.21	-7367.95	3418.95	0.28	0.24	0.16	524418.57	1713086.03	N 39 56 7.18 W	80 31 23.42	6.66
	14903.00	89.11	145.29	6609.61	8208.20	-7441.57	3470.71	0.90	-0.11	0.89	524344.96	1713137.78	N 39 56 6.45 W	80 31 22.75	6.67
	14992.00	90.38	146.02	6610.01	8296.37	-7515.05	3520.92	1.65	1.43	0.82	524271.48	1713187.99	N 39 56 5.73 W	80 31 22.09	6.68
	15081.00	90.65	148.46	6609.21	8384.83	-7589.88	3569.08	2.76	0.30	2.74	524196.65	1713236.14	N 39 56 5.00 W	80 31 21.46	6.69
	15171.00	90.93	147.64	6607.97	8474.42	-7666.24	3616.70	0.96	0.31	-0.91	524120.29	1713283.76	N 39 56 4.25 W	80 31 20.84	6.70
	15260.00	89.93	144.58	6607.30	8562.68	-7740.11	3666.31	3.62	-1.12	-3.44	524046.43	1713333.38	N 39 56 3.53 W	80 31 20.19	6.71
	15350.00	91.00	143.55	6606.57	8651.46	-7812.98	3719.13	1.65	1.19	-1.14	523973.57	1713386.19	N 39 56 2.81 W	80 31 19.50	6.72
	15439.00	91.17	142.06	6604.88	8738.91	-7883.86	3772.92	1.68	0.19	-1.67	523902.69	1713439.98	N 39 56 2.12 W	80 31 18.80	6.73
	15528.00	90.96	141.09	6603.23	8825.99	-7953.57	3828.22	1.11	-0.24	-1.09	523832.98	1713495.28	N 39 56 1.43 W	80 31 18.08	6.74
	15618.00	90.10	140.47	6602.40	8913.78	-8023.29	3885.13	1.18	-0.96	-0.69	523763.26	1713552.18	N 39 56 0.75 W	80 31 17.34	6.75
	15708.00	90.07	140.31	6602.26	9001.45	-8092.63	3942.51	0.18	-0.03	-0.18	523693.93	1713609.56	N 39 56 0.07 W	80 31 16.60	6.76
	15797.00	89.48	139.96	6602.61	9088.05	-8160.94	3999.55	0.77	-0.66	-0.39	523625.62	1713666.60	N 39 55 59.40 W	80 31 15.85	6.76
	15887.00	89.69	139.97	6603.26	9175.57	-8229.85	4057.77	0.23	0.23	0.01	523556.72	1713724.49	N 39 55 58.73 W	80 31 15.10	6.77
	15976.00	89.35	140.70	6604.01	9262.24	-8298.35	4114.25	0.90	-0.38	0.82	523488.21	1713781.29	N 39 55 58.06 W	80 31 14.36	6.78
Final Survey 02Mar13	16082.00	89.66	140.71	6604.93	9365.62	-8380.38	4181.38	0.29	0.29	0.01	523406.19	1713848.42	N 39 55 57.26 W	80 31 13.49	6.78
Protection to Bit	16165.00	89.66	140.71	6605.42	9446.57	-8444.62	4233.94	0.00	0.00	0.00	523341.95	1713900.98	N 39 55 56.63 W	80 31 12.80	6.79

Survey Type: Def Survey

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

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	18.020		30.000	SLB_NSG+MSHOT+Depth Only	Original Borehole / Noble Energy SHL-8M-HS Gyro+MWD 0' MD to 16165' MD
	18.020	2980.000		30.000	SLB_NSG+MSHOT	Original Borehole / Noble Energy SHL-8M-HS Gyro+MWD 0' MD to
	2980.000	3220.000		30.000	SLB_INC_ONLY<10	Original Borehole / Noble Energy SHL-8M-HS Gyro+MWD 0' MD to
	3220.000	16082.000		30.000	SLB_MWD-STD	Original Borehole / Noble Energy SHL-8M-HS Gyro+MWD 0' MD to
	16082.000	16165.000		30.000	SLB_BLIND+TREND	Original Borehole / Noble Energy SHL-8M-HS Gyro+MWD 0' MD to

03/07/2014