

# Noble Energy

CO, Weld County (NAD 83 NZ)  
Sec 25 Twn 4 N Rng 65 W  
Heartland G25-72-1HN Original Hole  
05-123-39557  
PD 828



A Schlumberger Company

## Final Survey Report

29-Oct-2014

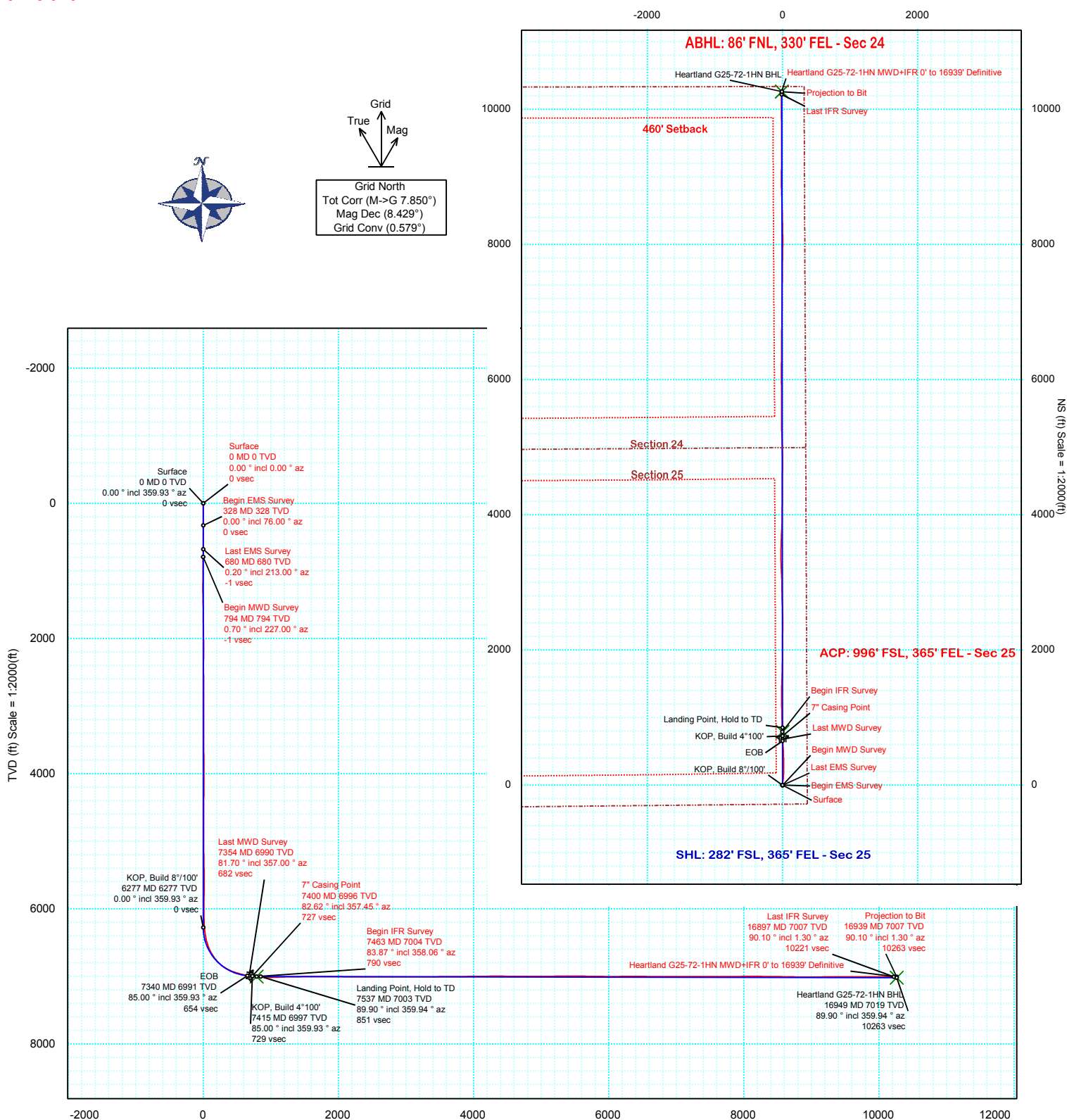
Well Coordinates:	NAD83 CO State Plane, N Zone, US Feet
	N 40° 16' 36.22800"    W 104° 36' 13.14000"
	1344918.1 usFt        3250092.42 usFt
Ground Level:	4842.00 ft MSL
TVD Reference:	KB 16ft @ 4858.00 ft MSL
Local Coordinate Origin:	Heartland G25-72-1HN well head
Vertical Section Azimuth:	359.935 ° (Grid North)
North Reference:	Grid North

DOX Version: 2.8

<b>Borehole:</b> Original Hole	<b>Well:</b> Heartland G25-72-1HN	<b>Field:</b> CO, Weld County (NAD 83 NZ)	<b>Structure:</b> 25-04N-65W (Heartland C30-79-1HN Pad) - PD 828
<b>Gravity &amp; Magnetic Parameters</b> Model: BGGM 2014 Dip: 66.862° Date: 11-Aug-2014 MagDec: 8.429° FS: 52648.502nT Gravity FS: 999.018mgN (9.80665 Based)		<b>Surface Location</b> NAD83 Colorado State Plane, Northern Zone, US Feet Lat: N 40 16 36.23 Northing: 1344918.1ftUS Grid Conv: 0.5792° Lon: W 104 36 13.14 Easting: 3250092.42ftU Scale Fact: 0.99995695	
		<b>Miscellaneous</b> Slot: Heartland G25-72-1HN TVD Ref: KB 16ft(4858ft above MSL) Plan: Heartland G25-72-1HN MWD+IFR 0' to 16939' Definitive	

PvA

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



Vertical Section (ft) Azim = 359.935° Scale = 1:2000(ft) Origin = 0N/-S, 0E/-W



# Heartland G25-72-1HN MWD+IFR 0' to 16939' Definitive Survey Geodetic Report (Def Survey)



**Report Date:** August 19, 2014 - 04:18 PM  
**Client:** Noble Energy  
**Field:** CO, Weld County (NAD 83 NZ)  
**Structure / Slot:** Noble 25-04N-65W (Heartland C30-79-1HN Pad) - PD 828 / Heartland G25-72-1HN  
**Well:** Heartland G25-72-1HN  
**Borehole:** Original Hole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Heartland G25-72-1HN MWD+IFR 0' to 16939' Definitive  
**Survey Date:** August 11, 2014  
**Tort / AHD / DDI / ERD Ratio:** 194.788 ° / 10313.032 ft / 6.686 / 1.470  
**Coordinate Reference System:** NAD83 Colorado State Plane, Northern Zone, US Feet  
**Location Lat / Long:** N 40° 16' 36.22800", W 104° 36' 13.14000"  
**Location Grid N/E Y/X:** N 1344918.097 ftUS, E 3250092.424 ftUS  
**CRS Grid Convergence Angle:** 0.5792 °  
**Grid Scale Factor:** 0.99995695  
**Version / Patch:** 2.8.551.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 359.935 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** KB 16ft  
**TVD Reference Elevation:** 4858.000 ft above MSL  
**Seabed / Ground Elevation:** 4842.000 ft above MSL  
**Magnetic Declination:** 8.429 °  
**Total Gravity Field Strength:** 999.0183mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 52648.502 nT  
**Magnetic Dip Angle:** 66.862 °  
**Declination Date:** August 11, 2014  
**Magnetic Declination Model:** BGGM 2014  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.5792 °  
**Total Corr Mag North->Grid North:** 7.8496 °  
**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	1344918.10	3250092.42	N 40 16 36.23	W 104 36 13.14
Begin EMS	328.00	0.00	76.00	328.00	0.00	0.00	0.00	0.00	1344918.10	3250092.42	N 40 16 36.23	W 104 36 13.14
Survey												
Last EMS	680.00	0.20	213.00	680.00	-0.51	-0.52	-0.33	0.06	1344917.58	3250092.09	N 40 16 36.22	W 104 36 13.14
Survey												
Begin MWD	794.00	0.70	227.00	794.00	-1.16	-1.16	-0.95	0.45	1344916.94	3250091.47	N 40 16 36.22	W 104 36 13.15
Survey												
	974.00	0.60	225.00	973.98	-2.57	-2.57	-2.42	0.06	1344915.52	3250090.00	N 40 16 36.20	W 104 36 13.17
	1158.00	1.00	222.80	1157.97	-4.43	-4.43	-4.19	0.22	1344913.66	3250088.23	N 40 16 36.18	W 104 36 13.19
	1348.00	1.00	4.60	1347.95	-3.99	-4.00	-5.19	0.99	1344914.10	3250087.24	N 40 16 36.19	W 104 36 13.21
	1538.00	0.80	8.10	1537.93	-1.03	-1.03	-4.87	0.11	1344917.07	3250087.56	N 40 16 36.22	W 104 36 13.20
	1727.00	0.50	352.10	1726.92	1.10	1.09	-4.80	0.18	1344919.19	3250087.63	N 40 16 36.24	W 104 36 13.20
	1917.00	1.40	343.60	1916.89	4.15	4.14	-5.57	0.48	1344922.24	3250086.86	N 40 16 36.27	W 104 36 13.21
	2105.00	0.20	143.00	2104.87	6.09	6.08	-6.02	0.85	1344924.18	3250086.41	N 40 16 36.29	W 104 36 13.22
	2285.00	0.20	141.40	2284.87	5.59	5.59	-5.63	0.00	1344923.68	3250086.79	N 40 16 36.28	W 104 36 13.21
	2465.00	0.10	309.10	2464.87	5.44	5.44	-5.56	0.17	1344923.54	3250086.87	N 40 16 36.28	W 104 36 13.21
	2644.00	0.70	67.60	2643.87	5.96	5.95	-4.67	0.42	1344924.05	3250087.76	N 40 16 36.29	W 104 36 13.20
	2824.00	0.70	62.50	2823.85	6.88	6.88	-2.68	0.03	1344924.98	3250089.75	N 40 16 36.30	W 104 36 13.17
	3004.00	0.40	78.10	3003.85	7.52	7.52	-1.09	0.18	1344925.61	3250091.34	N 40 16 36.30	W 104 36 13.15
	3184.00	0.30	83.00	3183.84	7.70	7.70	0.00	0.06	1344925.80	3250092.42	N 40 16 36.30	W 104 36 13.14
	3364.00	0.80	70.50	3363.83	8.18	8.18	1.65	0.28	1344926.28	3250094.07	N 40 16 36.31	W 104 36 13.12
	3543.00	0.50	104.00	3542.82	8.41	8.41	3.58	0.26	1344926.51	3250096.01	N 40 16 36.31	W 104 36 13.09
	3723.00	0.90	302.80	3722.82	8.98	8.99	3.16	0.77	1344927.08	3250095.58	N 40 16 36.32	W 104 36 13.10
	3903.00	1.20	263.10	3902.79	9.52	9.53	0.10	0.43	1344927.62	3250092.52	N 40 16 36.32	W 104 36 13.14
	4082.00	0.40	289.40	4081.77	9.51	9.51	-2.35	0.48	1344927.60	3250090.07	N 40 16 36.32	W 104 36 13.17
	4262.00	0.20	186.50	4261.77	9.41	9.40	-2.98	0.27	1344927.50	3250089.44	N 40 16 36.32	W 104 36 13.18
	4441.00	0.50	171.20	4440.77	8.33	8.32	-2.90	0.17	1344926.42	3250089.53	N 40 16 36.31	W 104 36 13.18
	4621.00	0.40	188.60	4620.76	6.93	6.92	-2.87	0.09	1344925.02	3250089.56	N 40 16 36.30	W 104 36 13.18
	4801.00	0.70	246.30	4800.75	5.87	5.86	-3.97	0.33	1344923.96	3250088.45	N 40 16 36.29	W 104 36 13.19
	4981.00	1.10	357.40	4980.74	7.15	7.15	-5.05	0.83	1344925.24	3250087.37	N 40 16 36.30	W 104 36 13.20
	5160.00	0.20	92.50	5159.73	8.85	8.85	-4.82	0.63	1344926.94	3250087.60	N 40 16 36.32	W 104 36 13.20
	5340.00	1.20	9.10	5339.71	10.70	10.70	-4.21	0.66	1344928.79	3250088.22	N 40 16 36.33	W 104 36 13.19
	5519.00	0.70	339.80	5518.69	13.58	13.58	-4.29	0.38	1344931.67	3250088.13	N 40 16 36.36	W 104 36 13.19
	5699.00	1.20	238.70	5698.67	13.63	13.63	-6.28	0.83	1344931.72	3250086.14	N 40 16 36.36	W 104 36 13.22
	5879.00	0.60	176.00	5878.65	11.71	11.71	-7.82	0.59	1344929.80	3250084.60	N 40 16 36.34	W 104 36 13.24
	6058.00	0.50	95.50	6057.65	10.70	10.70	-6.98	0.40	1344928.79	3250085.44	N 40 16 36.33	W 104 36 13.23
	6238.00	2.90	19.50	6237.57	14.92	14.91	-4.68	1.57	1344933.01	3250087.74	N 40 16 36.38	W 104 36 13.20
	6283.00	5.40	16.70	6282.44	18.02	18.02	-3.69	5.57	1344936.11	3250088.73	N 40 16 36.41	W 104 36 13.19
	6328.00	7.30	11.00	6327.17	22.85	22.85	-2.54	4.44	1344940.95	3250089.89	N 40 16 36.45	W 104 36 13.17
	6372.00	8.50	10.30	6370.75	28.80	28.79	-1.42	2.74	1344946.89	3250091.00	N 40 16 36.51	W 104 36 13.15
	6417.00	10.60	12.40	6415.12	36.11	36.11	0.06	4.73	1344954.20	3250092.49	N 40 16 36.58	W 104 36 13.13
	6462.00	13.40	12.30	6459.13	45.25	45.25	2.06	6.22	1344963.34	3250094.49	N 40 16 36.67	W 104 36 13.11
	6507.00	16.40	11.50	6502.62	56.57	56.57	4.44	6.68	1344974.66	3250096.86	N 40 16 36.79	W 104 36 13.08
	6552.00	20.20	10.20	6545.33	70.44	70.45	7.08	8.49	1344988.54	3250099.51	N 40 16 36.92	W 104 36 13.04
	6597.00	23.70	9.30	6587.07	87.01	87.02	9.92	7.81	1345005.12	3250102.34	N 40 16 37.09	W 104 36 13.00
	6642.00	27.00	5.90	6627.73	106.10	106.12	12.43	8.01	1345024.21	3250104.86	N 40 16 37.28	W 104 36 12.97
	6687.00	30.20	2.20	6667.24	127.58	127.59	13.92	8.12	1345045.68	3250106.34	N 40 16 37.49	W 104 36 12.94
	6731.00	33.90	0.40	6704.52	150.91	150.93	14.43	8.68	1345069.02	3250106.85	N 40 16 37.72	W 104 36 12.93
	6776.00	37.80	0.80	6740.99	177.26	177.28	14.71	8.68	1345095.37	3250107.13	N 40 16 37.98	W 104 36 12.93
	6821.00	42.20	2.00	6775.46	206.17	206.19	15.43	9.93	1345124.27	3250107.85	N 40 16 38.26	W 104 36 12.91
	6866.00	46.40	0.60	6807.66	237.58	237.60	16.13	9.58	1345155.69	3250108.55	N 40 16 38.57	W 104 36 12.90
	6911.00	51.40	359.20	6837.23	271.48	271.50	16.05	11.36	1345189.58	3250108.48	N 40 16 38.91	W 104 36 12.90
	6956.00	56.20	358.80	6863.80	307.78	307.79	15.42	10.69	1345225.88	3250107.84	N 40 16 39.27	W 104 36 12.90
	7001.00	61.30	359.20	6887.14	346.23	346.25	14.75	11.36	1345264.33	3250107.17	N 40 16 39.65	W 104 36 12.90
	7046.00	65.00	0.20	6907.46	386.37	386.39	14.54	8.46	1345304.47	3250106.97	N 40 16 40.04	W 104 36 12.90
	7091.00	68.30	359.20	6925.29	427.68	427.69	14.32	7.61	1345345.77	3250106.75	N 40 16 40.45	W 104 36 12.90
	7136.00	71.70	358.00	6940.68	469.95	469.96	13.28	7.96	1345388.04	3250105.71	N 40 16 40.87	W 104 36 12.91
	7180.00	73.80	356.90	6953.73	511.92	511.94	11.41	5.34	1345430.01	3250103.84	N 40 16 41.29	W 104 36 12.93
	7226.00	76.30	356.20	6965.59	556.28	556.30	8.74	5.63	1345474.37	3250101.16	N 40 16 41.72	W 104 36 12.95
	7270.00	78.20	355.80	6975.30	599.10	599.10	5.74	4.41	1345517.17	3250098.17	N 40 16 42.15	W 104 36 12.99
	7315.00	80.00	356.00	6983.81	643.17	643.18	2.58	4.02	1345561.24	3250095.01	N 40 16 42.58	W 104 36 13.02
	7354.00	81.70	357.00	6990.01	681.61	681.61	0.23	5.04	1345599.67	3250092.66	N 40 16 42.96	W 104 36 13.05
	7400.00	82.62	357.45	6996.29	727.12	727.12	-1.97	2.21	1345645.19	3250090.45	N 40 16 43.41	W 104 36 13.07
	7463.00	83.87	358.06	7003.70	789.64	789.64	-4.42	2.21	1345707.70	3250088.00	N 40 16 44.03	W 104 36 13.09
	7508.00	84.73	358.64	7008.17	834.40	834.39	-5.71	2.30	1345752.45	3250086.71	N 40 16 44.47	W 104 36 13.10
	7552.00	86.01	358.29	7011.72	878.24	878.23	-6.89	3.02	1345796.29	3250085.54	N 40 16 44.91	W 104 36 13.11
	7597.00	87.42	358.93	7014.30	923.15	923.14	-7.98	3.44	1345841.20	3250084.45	N 40 16 45.35	W 104 36 13.12
	7688.00	91.38	359.26	7015.26	1014.12	1014.11	-9.41	4.37	1345932.16	3250083.01	N 40 16 46.25	W 104 36 13.13
	7777.00	92.54	358.38	7012.21	1103.05	1103.04	-11.24	1.64	1346021.08	3250081.18	N 40 16 47.13	W 104 36 13.14
	7867.00	91.75	358.80	7008.84	1192.96	1192.95	-13.46	0.99	1346110.99	3250078.97	N 40 16 48.02	W 104 36 13.16
	7957.00	91.00	359.80	7006.68	1282.93	1282.91	-14.56	1.39	1346200.95	3250077.87	N 40 16 48.91	W 104 36 13.16
	8047.00	90.41	0.56	7005.58	1372.92	1372.90	-14.27	1.07	1346290.94	3250078.15	N 40 16 49.80	W 104 36 13.15
	8137.00	90.41	1.71									

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 ° ' ")
	8496.00	89.86	0.75	7003.68	1821.71	1821.71	-1.82	0.98	1346739.72	3250090.60	N 40 16 54.23 W	104 36 12.93
	8586.00	89.83	0.81	7003.93	1911.70	1911.70	-0.60	0.07	1346829.71	3250091.82	N 40 16 55.12 W	104 36 12.90
	8676.00	89.42	0.13	7004.52	2001.69	2001.69	0.14	0.88	1346919.70	3250092.56	N 40 16 56.01 W	104 36 12.88
	8766.00	89.45	0.13	7005.40	2091.69	2091.69	0.34	0.03	1347009.69	3250092.77	N 40 16 56.90 W	104 36 12.86
	8855.00	89.73	0.20	7006.04	2180.69	2180.69	0.60	0.32	1347098.69	3250093.02	N 40 16 57.78 W	104 36 12.85
	8945.00	89.76	0.96	7006.44	2270.68	2270.68	1.51	0.85	1347188.68	3250093.93	N 40 16 58.67 W	104 36 12.82
	9035.00	90.38	359.71	7006.33	2360.67	2360.68	2.04	1.55	1347278.67	3250094.46	N 40 16 59.55 W	104 36 12.81
	9125.00	89.90	0.24	7006.11	2450.67	2450.68	2.00	0.79	1347368.66	3250094.42	N 40 17 0.44 W	104 36 12.79
	9215.00	89.69	358.40	7006.43	2540.66	2540.67	0.93	2.06	1347458.65	3250093.35	N 40 17 1.33 W	104 36 12.80
	9304.00	89.66	358.88	7006.94	2629.64	2629.64	-1.18	0.54	1347547.62	3250091.24	N 40 17 2.21 W	104 36 12.81
	9394.00	90.28	357.06	7006.99	2719.58	2719.58	-4.37	2.14	1347637.55	3250088.05	N 40 17 3.10 W	104 36 12.84
	9484.00	90.24	358.39	7006.58	2809.51	2809.50	-7.94	1.48	1347727.47	3250084.48	N 40 17 3.99 W	104 36 12.88
	9574.00	89.83	359.65	7006.52	2899.50	2899.49	-9.48	1.47	1347817.46	3250082.94	N 40 17 4.88 W	104 36 12.88
	9664.00	90.00	358.66	7006.66	2989.49	2989.48	-10.81	1.12	1347907.44	3250081.61	N 40 17 5.77 W	104 36 12.89
	9754.00	90.24	358.50	7006.47	3079.46	3079.45	-13.04	0.32	1347997.41	3250079.38	N 40 17 6.66 W	104 36 12.91
	9843.00	89.90	356.01	7006.36	3168.36	3168.34	-17.30	2.82	1348086.30	3250075.12	N 40 17 7.54 W	104 36 12.95
	9933.00	90.58	358.82	7005.98	3258.24	3258.24	-21.36	3.21	1348176.19	3250071.06	N 40 17 8.43 W	104 36 12.99
	10023.00	89.90	359.51	7005.60	3348.25	3348.23	-22.67	1.08	1348266.17	3250069.75	N 40 17 9.32 W	104 36 13.00
	10112.00	90.41	0.24	7005.36	3437.25	3437.23	-22.87	1.00	1348355.17	3250069.56	N 40 17 10.19 W	104 36 12.99
	10203.00	90.45	0.82	7004.68	3528.24	3528.22	-22.02	0.64	1348446.16	3250070.40	N 40 17 11.09 W	104 36 12.96
	10292.00	90.31	1.94	7004.09	3617.21	3617.19	-19.88	1.27	1348535.12	3250072.54	N 40 17 11.97 W	104 36 12.92
	10382.00	90.38	2.44	7003.55	3707.14	3707.12	-16.44	0.56	1348625.05	3250075.98	N 40 17 12.86 W	104 36 12.87
	10472.00	90.48	2.98	7002.87	3797.03	3797.02	-12.19	0.61	1348714.94	3250080.24	N 40 17 13.75 W	104 36 12.80
	10562.00	90.65	1.88	7001.99	3886.94	3886.93	-8.37	1.24	1348804.85	3250084.05	N 40 17 14.64 W	104 36 12.74
	10651.00	90.72	0.63	7000.92	3975.91	3975.90	-6.42	1.41	1348893.82	3250086.00	N 40 17 15.52 W	104 36 12.70
	10741.00	90.45	0.13	7000.00	4065.90	4065.90	-5.83	0.63	1348983.81	3250086.60	N 40 17 16.41 W	104 36 12.68
	10836.00	90.48	0.33	6999.23	4160.90	4160.89	-5.44	0.21	1349078.80	3250086.98	N 40 17 17.34 W	104 36 12.67
	10929.00	90.58	0.45	6998.37	4253.89	4253.89	-4.81	0.17	1349171.79	3250087.61	N 40 17 18.26 W	104 36 12.65
	11022.00	89.93	0.64	6997.96	4346.88	4346.88	-3.93	0.73	1349264.78	3250088.50	N 40 17 19.18 W	104 36 12.62
	11113.00	89.55	0.22	6998.37	4437.88	4437.88	-3.24	0.62	1349355.77	3250089.18	N 40 17 20.08 W	104 36 12.60
	11207.00	89.69	0.32	6998.99	4531.87	4531.87	-2.80	0.18	1349449.77	3250089.62	N 40 17 21.01 W	104 36 12.59
	11301.00	89.76	0.32	6999.45	4625.87	4625.87	-2.28	0.07	1349543.76	3250090.15	N 40 17 21.94 W	104 36 12.57
	11394.00	89.76	0.80	6999.83	4718.86	4718.86	-1.37	0.52	1349636.75	3250091.06	N 40 17 22.86 W	104 36 12.54
	11488.00	89.55	0.04	7000.40	4812.86	4812.86	-0.68	0.84	1349730.74	3250091.75	N 40 17 23.79 W	104 36 12.52
	11582.00	89.73	358.64	7000.99	4906.85	4906.85	-1.76	1.50	1349824.73	3250090.66	N 40 17 24.71 W	104 36 12.52
	11675.00	90.69	358.46	7000.65	4999.82	4999.82	-4.11	1.05	1349917.69	3250088.31	N 40 17 25.63 W	104 36 12.54
	11768.00	90.52	357.60	6999.67	5092.76	5092.76	-7.31	0.94	1350010.62	3250085.11	N 40 17 26.55 W	104 36 12.57
	11863.00	90.76	358.05	6998.61	5187.69	5187.68	-10.92	0.54	1350105.55	3250081.51	N 40 17 27.49 W	104 36 12.60
	11957.00	91.10	358.57	6997.08	5281.64	5281.63	-13.69	0.66	1350199.49	3250078.74	N 40 17 28.42 W	104 36 12.63
	12049.00	90.21	0.09	6996.03	5373.63	5373.61	-14.76	1.91	1350291.47	3250077.66	N 40 17 29.33 W	104 36 12.63
	12143.00	89.83	0.28	6996.00	5467.62	5467.61	-14.46	0.45	1350385.46	3250077.96	N 40 17 30.26 W	104 36 12.61
	12236.00	89.07	359.81	6996.89	5560.62	5560.61	-14.39	0.96	1350478.45	3250078.04	N 40 17 31.18 W	104 36 12.60
	12326.00	89.24	0.17	6998.22	5650.61	5650.60	-14.40	0.44	1350568.44	3250078.02	N 40 17 32.06 W	104 36 12.59
	12416.00	88.87	359.83	6999.70	5740.60	5740.58	-14.40	0.56	1350658.42	3250078.02	N 40 17 32.95 W	104 36 12.58
	12505.00	89.31	359.94	7001.11	5829.59	5829.57	-14.58	0.51	1350747.41	3250077.84	N 40 17 33.83 W	104 36 12.57
	12595.00	89.86	359.18	7001.77	5919.58	5919.57	-15.27	1.04	1350837.40	3250077.15	N 40 17 34.72 W	104 36 12.56
	12685.00	89.76	359.67	7002.07	6009.58	6009.56	-16.18	0.56	1350927.39	3250076.25	N 40 17 35.61 W	104 36 12.56
	12775.00	90.21	0.14	7002.09	6099.57	6099.56	-16.32	0.72	1351017.38	3250076.10	N 40 17 36.50 W	104 36 12.55
	12865.00	90.24	0.25	7001.74	6189.57	6189.56	-16.02	0.13	1351107.38	3250076.41	N 40 17 37.39 W	104 36 12.54
	12955.00	90.00	0.36	7001.55	6279.57	6279.56	-15.54	0.29	1351197.37	3250076.89	N 40 17 38.28 W	104 36 12.52
	13045.00	90.21	0.67	7001.38	6369.57	6369.55	-14.73	0.42	1351287.36	3250077.69	N 40 17 39.17 W	104 36 12.50
	13134.00	89.97	0.50	7001.24	6458.56	6458.55	-13.82	0.33	1351376.35	3250078.60	N 40 17 40.05 W	104 36 12.48
	13224.00	89.62	359.86	7001.56	6548.56	6548.55	-13.54	0.81	1351466.35	3250078.89	N 40 17 40.94 W	104 36 12.46
	13314.00	89.45	0.66	7002.29	6638.55	6638.54	-13.13	0.91	1351556.34	3250079.29	N 40 17 41.83 W	104 36 12.44
	13404.00	89.79	0.37	7002.89	6728.55	6728.54	-12.32	0.50	1351646.33	3250080.10	N 40 17 42.72 W	104 36 12.42
	13493.00	89.79	0.75	7003.22	6817.54	6817.53	-11.45	0.43	1351735.32	3250080.97	N 40 17 43.60 W	104 36 12.40
	13583.00	89.73	0.70	7003.59	6907.53	6907.52	-10.31	0.09	1351825.31	3250082.11	N 40 17 44.48 W	104 36 12.37
	13673.00	89.38	0.77	7004.29	6997.52	6997.51	-9.16	0.40	1351915.30	3250083.27	N 40 17 45.37 W	104 36 12.35
	13763.00	90.17	0.40	7004.65	7087.51	7087.51	-8.24	0.97	1352005.28	3250084.18	N 40 17 46.26 W	104 36 12.32
	13853.00	89.62	0.25	7004.81	7177.51	7177.51	-7.73	0.63	1352095.28	3250084.70	N 40 17 47.15 W	104 36 12.30
	13942.00	90.03	0.34	7005.08	7266.51	7266.50	-7.27	0.47	1352184.27	3250085.15	N 40 17 48.03 W	104 36 12.29
	14032.00	91.07	0.68	7004.22	7356.50	7356.49	-6.47	1.22	1352274.26	3250085.95	N 40 17 48.92 W	104 36 12.26
	14122.00	90.10	0.69	7003.30	7446.48	7446.48	-5.39	1.08	1352364.24	3250087.03	N 40 17 49.81 W	104 36 12.24
	14212.00	89.93	359.92	7003.28	7536.48	7536.48	-4.91	0.88	1352454.24	3250087.51	N 40 17 50.70 W	104 36 12.22
	14301.00	89.93	1.16	7003.39	7625.47	7625.47	-4.08	1.39	1352543.23	3250088.35	N 40 17 51.58 W	104 36 12.20
	14391.00	90.00	0.53	7003.44	7715.46	7715.46	-2.75	0.70	1352633.21	3250089.68	N 40 17 52.47 W	104 36 12.17
	14481.00	90.45	0.93	7003.09	7805.45	7805.46	-1.60	0.67	1352723.20	3250090.82	N 40 17 53.36 W	104 36 12.14
	14571.00	90.24	0.79	7002.55	7895.44	7895.44	-0.25	0.28	1352813.18	3250092.17	N 40 17 54.25 W	104 36 12.11
	14660.00	90.93	1.65	7001.64	7984.41	7984.42	1.64	1.24	1352902.15	3250094.07	N 40 17 55.12 W	104 36 12.08
	14750.00	89.97	359.26	7000.93	8074.40	8074.40	2.36	2.86	1352992.14	3250094.78	N 40 17 56.01 W	104 36 12.06
	14840.00	89.97	358.72	7000.98	8164.38	8164.39	0.77	0.60	1353082.12	3250093.20	N 40 17 56.90 W	104 36 12.06
	14930.00	89.21	358.86	7001.62	8254.36	8254.37	-1.13	0.86	1353172.09	3250091.30	N 40 17 57.79 W	104 36 12.08
	15019.00	89.42	359.42	7002.69	8343.35	8343.35	-2.46	0.67	1353261.07	3250089.96	N 40 17 58.67 W	104 36 12.08
	15109.00	89.42	358.83	7003.60	8433.33	8433.33	-3.84	0.66	1353351.05	3250088.59	N 40 17 59.56 W	104 36 12.09
	15199.00	89.24	358.63	7004.65	8523.31	8523.31	-5.83	0.30	1353441.02	3250086.59	N 40 18 0.45 W	104 36 12.10
	15288.00	88.83	358.32	7006.15	8612.27	8612.26	-8.20	0.58	1353529.97	3250084.22	N 40 18 1.33 W	104 3

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		1	328.000	680.000	1/98.425	13.750	9.625	SLB_EMS-STD			Original Hole / Heartland G25-72-1HN MWD+IFR 0' to 16939'	
Intermediate		1	680.000	7354.000	Act Stns	13.750	9.625	SLB_MWD-STD			Original Hole / Heartland G25-72-1HN MWD+IFR 0' to 16939'	
* Lateral		1	7354.000	16897.000	Act Stns	6.125	4.500	SLB_MWD+IFR+DMAG			Original Hole / Heartland G25-72-1HN MWD+IFR 0' to 16939'	
Bit Projection		1	16897.000	16939.000	Act Stns	6.125	4.500	SLB_BLIND+TREND			Original Hole / Heartland G25-72-1HN MWD+IFR 0' to 16939'	

\* SLB\_MWD+IFR+DMAG =  
MWD+IFR1+MS\_WY