

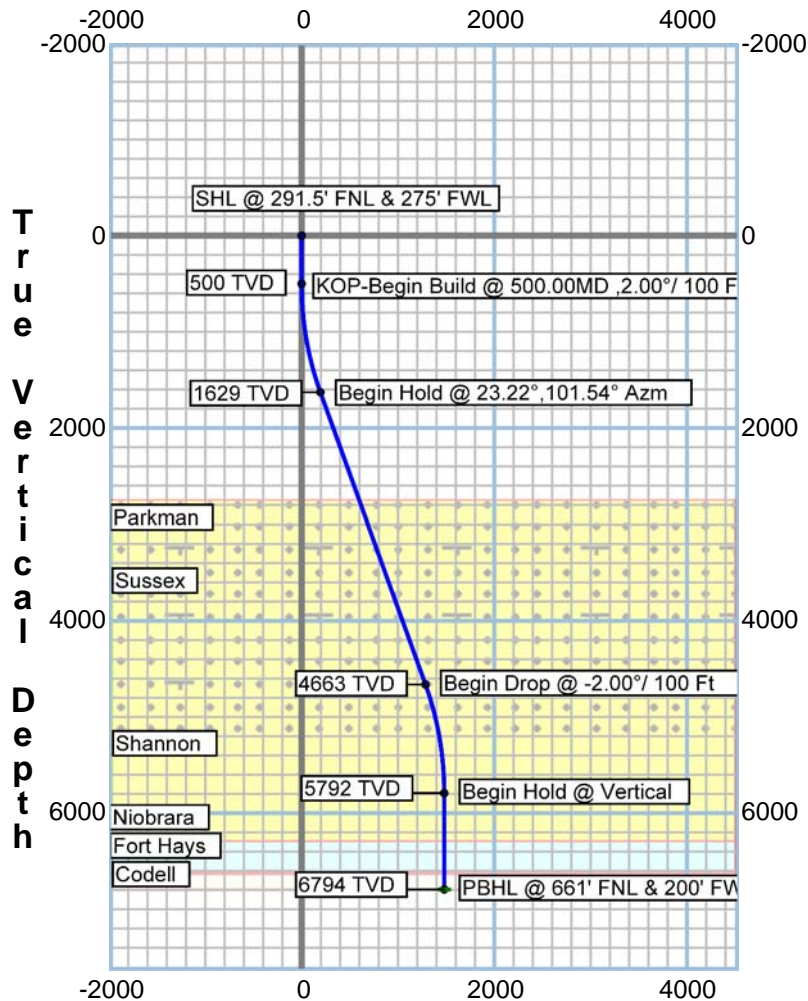


Job ID : Hornung Pad  
 Company : Sundance Energy  
 Lease/Well : Hornung 21-28  
 Location : SEC 28 T4N R68W  
 API JOB # : 521-123-xxxxx  
 Rig Name : Cade 25  
 State/Province : CO  
 County/Parish : Weld  
 Country : USA

Latitude : 40°17'26.1600" N  
 Longitude : -105°1'0.5160" W  
 Northing : 1349074  
 Easting : 3134787.2  
 System Zone : US State Plane 1983  
 Projection Type : LAMBERT  
 Elevation (To MSL) : 4902 ft  
 RKB : 14 ft  
 Comment : Plan 4

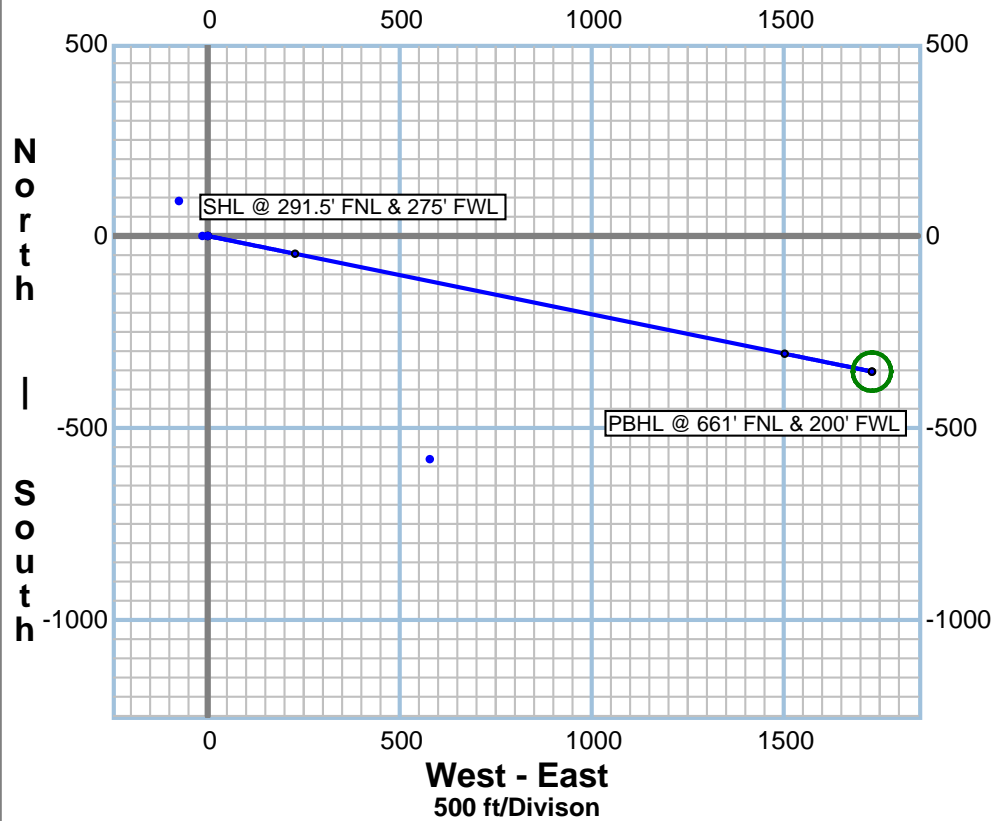


### Vertical Section Plot



**Vertical Section (133.27°)**  
 2000 ft/Division

### Horizontal Plot



### CRITICAL POINTS - HORNING 21-28 PROPOSAL

MD	Inc	Azm	TVD	EW	NS	VS	CI	Cldir	WR	BR	DLS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1660.97	23.22	101.54	1629.45	227.35	-46.42	194.54	232.04	101.54	0.00	2.06	2.06
4961.39	23.22	101.54	4662.53	1502.28	-306.73	1285.51	1533.27	101.54	0.00	0.00	0.00
6122.51	0.01	214.39	5792.13	1729.63	-353.21	1480.09	1765.33	101.54	8655.71	-1.30	2.00
7124.38	0.01	214.39	6794.00	1729.57	-353.30	1480.11	1765.29	101.55	0.00	0.00	0.00

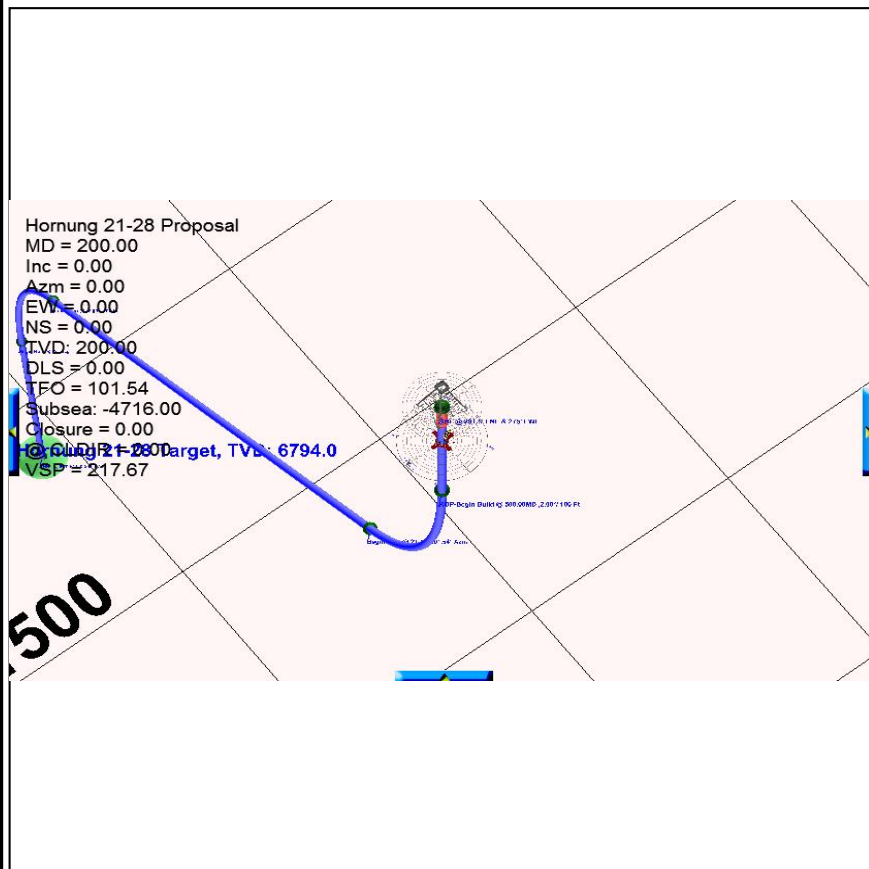


Job ID : Hornung Pad  
 Company : Sundance Energy  
 Lease/Well : Hornung 21-28  
 Location : SEC 28 T4N R68W  
 API JOB # : 521-123-xxxxx  
 Rig Name : Cade 25  
 State/Province : CO  
 County/Parish : Weld  
 Country : USA

Latitude : 40°17'26.1600" N  
 Longitude : -105°1'0.5160" W  
 Northing : 1349074  
 Easting : 3134787.2  
 System Zone : US State Plane 1983  
 Projection Type : LAMBERT  
 Elevation (To MSL) : 4902 ft  
 RKB : 14 ft  
 Comment : Plan 4



TARGETS					LITHOLOGY						
SHAPE	NAME	Easting	Northing	Subsea TVD	EW	Name	Subsea Top	Subsea Bottom	Description	Dip_Angle	Dip_Direction
CIRCLE	Way Point _ 6397.67	3134619.20	1349189.99	-2416.00	-167.37	Parkman	-2168.00	-1518.00	Parkman	0.00	0.00
CIRCLE	Hornung #1 Target	3135368.37	1348495.76	-763.00	578.01	Sussex	-1518.00	-1118.00	Sussex	0.00	0.00
CIRCLE	Way Point 2 11-28	3135185.30	1348711.88	884.00	396.12	Shannon	-1118.00	1376.00	Shannon	0.00	0.00
CIRCLE	Hornung 52-28 Target	3135858.39	1348063.48	1878.00	1065.67	Niobrara	1376.00	1696.00	Niobrara	0.00	0.00
CIRCLE	Hornung 21-28 Target	3136518.67	1348730.13	1878.00	1729.57	Fort Hays	1696.00	1718.00	Fort Hays	0.00	0.00
CIRCLE	Hornung 11-28 Target	3135185.30	1348711.88	1878.00	396.12	Codell	1718.00	1878.00	Codell	0.00	0.00



MAGNETICS INFORMATION :  
 Magnetic Model: C:\HawkEye\IGRF2005.MIF  
 Date for Magnetics: 07/26/2013  
 Latitude: 40°17'26.1600" N  
 Longitude: -105°01'0.5159" W  
 Magnetic Declination: 8.65  
 Total Correction(Mag to Grid): 8.33  
 Field Strength (nt): 52902  
 B-X Component (nt): 20555  
 B-Y Component (nt): 3126  
 B-Z Component (nt): 48645  
 B-Horz Component (nt): 20791  
 Dip Angle: 66.86

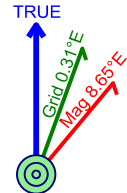
METHODS OF CORRECTIONS:  
 \* To correct from Magnetic North to True North use:  
 8.65°E --> TN = MN + 8.65  
 \* To correct from True North to Grid North use:  
 0.31°E --> GN = TN - 0.31 : True to Grid  
 \* To Correct from Magnetic North to Grid North use:  
 8.33°E --> GN = MN + 8.33 : Magnetic to Grid



**Job Number:** Hornung Pad  
**Company:** Sundance Energy  
**Lease/Well:** Hornung 21-28  
**Location:** SEC 28 T4N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 521-123-xxxx

**Elevation :** 4902.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.65°  
**Grid Convergence:** 0.31220 E  
**Date:** Friday, July 26, 2013

Calculated by HawkEye Software  
 Minimum Curvature Method  
 Vertical Section Plane 133.27°  
 Northing (US ft): 1349074.00 Easting (US ft): 3134787.20  
 Latitude: 40°17'26.1600" N Longitude: -105°01'0.5159" W  
 Well Location: 279.59 FNL, 263.59 FWL, Section 28, T4N, R68W, Meridian 06, Weld County, CO  
 Direction Reference: True North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
<b>SHL @ 291.5' FNL &amp; 275' FWL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.2906000	-105.0168100
<b>KOP-Begin Build @ 500.00MD ,2.00°/ 100 Ft</b>											
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	40.2906000	-105.0168100
<b>Begin Hold @ 23.22°,101.54° Azm</b>											
1660.97	23.22	101.54	1629.45	-46.42	227.35	197.36	2.06	2.06	0.00	40.2904726	-105.0159950
<b>Parkman</b>											
2878.11	23.22	101.54	2748.00	-142.42	697.52	605.50	0.00	0.00	0.00	40.2902090	-105.0143095
<b>Sussex</b>											
3585.40	23.22	101.54	3398.00	-198.21	970.75	842.68	0.00	0.00	0.00	40.2900559	-105.0133301
<b>Shannon</b>											
4020.66	23.22	101.54	3798.00	-232.54	1138.88	988.64	0.00	0.00	0.00	40.2899616	-105.0127274
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
4961.39	23.22	101.54	4662.53	-306.73	1502.28	1304.10	0.00	0.00	0.00	40.2897579	-105.0114248
<b>Begin Hold @ Vertical</b>											
6122.51	0.01	214.39	5792.13	-353.21	1729.63	1501.50	2.00	-1.30	8655.71	40.2896302	-105.0106098
<b>Niobrara</b>											
6622.38	0.01	214.39	6292.00	-353.26	1729.60	1501.50	0.00	0.00	0.00	40.2896301	-105.0106099
<b>Fort Hays</b>											
6942.38	0.01	214.39	6612.00	-353.29	1729.58	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100
<b>Codell</b>											
6964.38	0.01	214.39	6634.00	-353.29	1729.58	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100
<b>PBHL @ 661' FNL &amp; 200' FWL</b> ● Hornung 21-28 Target											
7124.38	0.01	214.39	6794.00	-353.30	1729.57	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100

**TARGET DATA**

Name	Shape	Easting (Ft)	Northing (Ft)	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)
Hornung 21-28 Target	CIRCLE	3136518.7	1348730.1	1878.0	6794.0	-353.3	1729.6	100.0	200.0	100.0

LITHOLOGY DATA

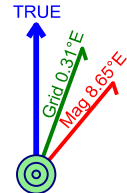
Name	Description	Pattern	TVD Top (Ft)	TVD Bottom (Ft)	Dip Angle (deg)	Dip Direction (deg)
Parkman	Parkman	SANDSTON	2748	3398	0.0	0.0
Sussex	Sussex	SANDSTON	3398	3798	0.0	0.0
Shannon	Shannon	SANDSTON	3798	6292	0.0	0.0
Niobrara	Niobrara	CHALK	6292	6612	0.0	0.0
Fort Hays	Fort Hays	LIMESTON	6612	6634	0.0	0.0
Codell	Codell	SANDSTON	6634	6794	0.0	0.0





**Job Number:** Hornung Pad  
**Company:** Sundance Energy  
**Lease/Well:** Hornung 21-28  
**Location:** SEC 28 T4N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 521-123-xxxx


**Elevation :** 4902.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.65°  
**Grid Convergence:** 0.31220 E  
**Date:** Friday, July 26, 2013





Calculated by HawkEye Software  
 Minimum Curvature Method  
 Vertical Section Plane 133.27°  
 Northing (US ft): 1349074.00 Easting (US ft): 3134787.20  
 Latitude: 40°17'26.1600" N Longitude: -105°01'0.5159" W  
 Well Location: 279.59 FNL, 263.59 FWL, Section 28, T4N, R68W, Meridian 06, Weld County, CO  
 Direction Reference: True North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
<b>SHL @ 291.5' FNL &amp; 275' FWL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.2906000	-105.0168100
<b>KOP-Begin Build @ 500.00MD ,2.00°/ 100 Ft</b>											
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	40.2906000	-105.0168100
520.00	0.40	101.53	520.00	-0.01	0.07	0.06	2.00	2.00	507.63	40.2906000	-105.0168097
540.00	0.80	101.53	540.00	-0.06	0.27	0.24	2.00	2.00	0.04	40.2905998	-105.0168090
560.00	1.20	101.54	560.00	-0.13	0.62	0.53	2.00	2.00	0.01	40.2905997	-105.0168078
580.00	1.60	101.54	579.99	-0.22	1.09	0.95	2.00	2.00	0.01	40.2905994	-105.0168061
600.00	2.00	101.54	599.98	-0.35	1.71	1.48	2.00	2.00	0.00	40.2905990	-105.0168039
620.00	2.40	101.54	619.96	-0.50	2.46	2.14	2.00	2.00	0.00	40.2905986	-105.0168012
640.00	2.80	101.54	639.94	-0.68	3.35	2.91	2.00	2.00	0.00	40.2905981	-105.0167980
660.00	3.20	101.54	659.92	-0.89	4.38	3.80	2.00	2.00	0.00	40.2905975	-105.0167943
680.00	3.60	101.54	679.88	-1.13	5.54	4.81	2.00	2.00	0.00	40.2905969	-105.0167901
700.00	4.00	101.54	699.84	-1.40	6.84	5.93	2.00	2.00	0.00	40.2905962	-105.0167855
720.00	4.40	101.54	719.78	-1.69	8.27	7.18	2.00	2.00	0.00	40.2905954	-105.0167803
740.00	4.80	101.54	739.72	-2.01	9.84	8.54	2.00	2.00	0.00	40.2905945	-105.0167747
760.00	5.20	101.54	759.64	-2.36	11.55	10.03	2.00	2.00	0.00	40.2905935	-105.0167686
780.00	5.60	101.54	779.55	-2.73	13.40	11.63	2.00	2.00	0.00	40.2905925	-105.0167620
800.00	6.00	101.54	799.45	-3.14	15.38	13.35	2.00	2.00	0.00	40.2905914	-105.0167549
820.00	6.40	101.54	819.33	-3.57	17.49	15.18	2.00	2.00	0.00	40.2905902	-105.0167473
840.00	6.80	101.54	839.20	-4.03	19.74	17.14	2.00	2.00	0.00	40.2905889	-105.0167392
860.00	7.20	101.54	859.05	-4.52	22.13	19.21	2.00	2.00	0.00	40.2905876	-105.0167306
880.00	7.60	101.54	878.89	-5.03	24.66	21.40	2.00	2.00	0.00	40.2905862	-105.0167216
900.00	8.00	101.54	898.70	-5.58	27.32	23.71	2.00	2.00	0.00	40.2905847	-105.0167121
920.00	8.40	101.54	918.50	-6.15	30.11	26.14	2.00	2.00	0.00	40.2905831	-105.0167020
940.00	8.80	101.54	938.27	-6.75	33.04	28.68	2.00	2.00	0.00	40.2905815	-105.0166915
960.00	9.20	101.54	958.03	-7.37	36.11	31.34	2.00	2.00	0.00	40.2905798	-105.0166805
980.00	9.60	101.54	977.76	-8.02	39.31	34.12	2.00	2.00	0.00	40.2905780	-105.0166691

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
1000.00	10.00	101.54	997.47	-8.71	42.64	37.02	2.00	2.00	0.00	40.2905761	-105.0166571
1020.00	10.40	101.54	1017.15	-9.41	46.11	40.03	2.00	2.00	0.00	40.2905742	-105.0166447
1040.00	10.80	101.54	1036.81	-10.15	49.72	43.16	2.00	2.00	0.00	40.2905721	-105.0166318
1060.00	11.20	101.54	1056.44	-10.91	53.46	46.40	2.00	2.00	0.00	40.2905700	-105.0166184
1080.00	11.60	101.54	1076.05	-11.70	57.33	49.77	2.00	2.00	0.00	40.2905679	-105.0166045
1100.00	12.00	101.54	1095.62	-12.52	61.34	53.24	2.00	2.00	0.00	40.2905656	-105.0165901
1120.00	12.40	101.54	1115.17	-13.37	65.48	56.84	2.00	2.00	0.00	40.2905633	-105.0165753
1140.00	12.80	101.54	1134.69	-14.24	69.75	60.55	2.00	2.00	0.00	40.2905609	-105.0165599
1160.00	13.20	101.54	1154.18	-15.14	74.16	64.38	2.00	2.00	0.00	40.2905584	-105.0165441
1180.00	13.60	101.54	1173.63	-16.07	78.70	68.32	2.00	2.00	0.00	40.2905559	-105.0165279
1200.00	14.00	101.54	1193.06	-17.02	83.38	72.38	2.00	2.00	0.00	40.2905533	-105.0165111
1220.00	14.40	101.54	1212.44	-18.00	88.18	76.55	2.00	2.00	0.00	40.2905506	-105.0164939
1240.00	14.80	101.54	1231.80	-19.01	93.12	80.84	2.00	2.00	0.00	40.2905478	-105.0164762
1260.00	15.20	101.54	1251.12	-20.05	98.19	85.24	2.00	2.00	0.00	40.2905450	-105.0164580
1280.00	15.60	101.54	1270.40	-21.11	103.40	89.76	2.00	2.00	0.00	40.2905420	-105.0164393
1300.00	16.00	101.54	1289.64	-22.20	108.73	94.39	2.00	2.00	0.00	40.2905391	-105.0164202
1320.00	16.40	101.54	1308.85	-23.32	114.20	99.13	2.00	2.00	0.00	40.2905360	-105.0164006
1340.00	16.80	101.54	1328.02	-24.46	119.80	103.99	2.00	2.00	0.00	40.2905329	-105.0163805
1360.00	17.20	101.54	1347.14	-25.63	125.53	108.97	2.00	2.00	0.00	40.2905296	-105.0163600
1380.00	17.60	101.54	1366.23	-26.83	131.39	114.05	2.00	2.00	0.00	40.2905264	-105.0163390
1400.00	18.00	101.54	1385.27	-28.05	137.38	119.25	2.00	2.00	0.00	40.2905230	-105.0163175
1420.00	18.40	101.54	1404.27	-29.30	143.50	124.57	2.00	2.00	0.00	40.2905196	-105.0162956
1440.00	18.80	101.54	1423.22	-30.57	149.75	129.99	2.00	2.00	0.00	40.2905161	-105.0162732
1460.00	19.20	101.54	1442.13	-31.88	156.13	135.53	2.00	2.00	0.00	40.2905125	-105.0162503
1480.00	19.60	101.54	1461.00	-33.21	162.64	141.18	2.00	2.00	0.00	40.2905088	-105.0162270
1500.00	20.00	101.54	1479.82	-34.56	169.28	146.94	2.00	2.00	0.00	40.2905051	-105.0162032
1520.00	20.40	101.54	1498.59	-35.94	176.04	152.82	2.00	2.00	0.00	40.2905013	-105.0161789
1540.00	20.80	101.54	1517.31	-37.35	182.94	158.80	2.00	2.00	0.00	40.2904975	-105.0161542
1560.00	21.20	101.54	1535.98	-38.78	189.96	164.90	2.00	2.00	0.00	40.2904935	-105.0161290
1580.00	21.60	101.54	1554.60	-40.24	197.11	171.10	2.00	2.00	0.00	40.2904895	-105.0161034
1600.00	22.00	101.54	1573.17	-41.73	204.39	177.42	2.00	2.00	0.00	40.2904854	-105.0160773
1620.00	22.40	101.54	1591.69	-43.24	211.79	183.85	2.00	2.00	0.00	40.2904813	-105.0160508
1640.00	22.80	101.54	1610.15	-44.78	219.32	190.39	2.00	2.00	0.00	40.2904771	-105.0160238
1660.00	23.20	101.54	1628.56	-46.34	226.98	197.03	2.00	2.00	0.00	40.2904728	-105.0159963
<b>Begin Hold @ 23.22°,101.54° Azm</b>											
1660.97	23.22	101.54	1629.45	-46.42	227.35	197.36	2.06	2.06	0.00	40.2904726	-105.0159950
 <b>Parkman</b>											
2878.11	23.22	101.54	2748.00	-142.42	697.52	605.50	0.00	0.00	0.00	40.2902090	-105.0143095
 <b>Sussex</b>											
3585.40	23.22	101.54	3398.00	-198.21	970.75	842.68	0.00	0.00	0.00	40.2900559	-105.0133301

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS <sup>°</sup> /100Ft	Build Rate <sup>°</sup> /100Ft	Walk Rate <sup>°</sup> /100Ft	Latitude Dec. Deg	Longitude Dec. Deg
 Shannon											
4020.66	23.22	101.54	3798.00	-232.54	1138.88	988.64	0.00	0.00	0.00	40.2899616	-105.0127274
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
4961.39	23.22	101.54	4662.53	-306.73	1502.28	1304.10	0.00	0.00	0.00	40.2897579	-105.0114248
4981.39	22.82	101.54	4680.94	-308.30	1509.94	1310.75	2.00	-2.00	0.00	40.2897536	-105.0113973
5001.39	22.42	101.54	4699.40	-309.84	1517.48	1317.29	2.00	-2.00	0.00	40.2897493	-105.0113703
5021.39	22.02	101.54	4717.91	-311.35	1524.89	1323.72	2.00	-2.00	0.00	40.2897452	-105.0113437
5041.39	21.62	101.54	4736.48	-312.84	1532.17	1330.05	2.00	-2.00	0.00	40.2897411	-105.0113176
5061.39	21.22	101.54	4755.10	-314.30	1539.33	1336.26	2.00	-2.00	0.00	40.2897371	-105.0112919
5081.39	20.82	101.54	4773.77	-315.73	1546.36	1342.36	2.00	-2.00	0.00	40.2897332	-105.0112668
5101.39	20.42	101.54	4792.49	-317.14	1553.26	1348.35	2.00	-2.00	0.00	40.2897293	-105.0112420
5121.39	20.02	101.54	4811.25	-318.53	1560.03	1354.23	2.00	-2.00	0.00	40.2897255	-105.0112177
5141.39	19.62	101.54	4830.07	-319.88	1566.68	1360.00	2.00	-2.00	0.00	40.2897218	-105.0111939
5161.39	19.22	101.54	4848.93	-321.21	1573.19	1365.65	2.00	-2.00	0.00	40.2897181	-105.0111706
5181.39	18.82	101.54	4867.84	-322.52	1579.58	1371.20	2.00	-2.00	0.00	40.2897145	-105.0111477
5201.39	18.42	101.54	4886.79	-323.80	1585.83	1376.63	2.00	-2.00	0.00	40.2897110	-105.0111252
5221.39	18.02	101.54	4905.79	-325.05	1591.96	1381.95	2.00	-2.00	0.00	40.2897076	-105.0111033
5241.39	17.62	101.54	4924.83	-326.27	1597.96	1387.15	2.00	-2.00	0.00	40.2897042	-105.0110818
5261.39	17.22	101.55	4943.91	-327.47	1603.82	1392.25	2.00	-2.00	0.00	40.2897009	-105.0110608
5281.39	16.82	101.55	4963.04	-328.64	1609.56	1397.23	2.00	-2.00	0.00	40.2896977	-105.0110402
5301.39	16.42	101.55	4982.20	-329.79	1615.17	1402.09	2.00	-2.00	0.00	40.2896946	-105.0110201
5321.39	16.02	101.55	5001.41	-330.91	1620.64	1406.84	2.00	-2.00	0.00	40.2896915	-105.0110005
5341.39	15.62	101.55	5020.65	-332.00	1625.98	1411.48	2.00	-2.00	0.00	40.2896885	-105.0109813
5361.39	15.22	101.55	5039.93	-333.06	1631.19	1416.00	2.00	-2.00	0.00	40.2896856	-105.0109627
5381.39	14.82	101.55	5059.25	-334.10	1636.27	1420.41	2.00	-2.00	0.00	40.2896827	-105.0109445
5401.39	14.42	101.55	5078.60	-335.11	1641.21	1424.71	2.00	-2.00	0.00	40.2896799	-105.0109267
5421.39	14.02	101.55	5097.98	-336.09	1646.03	1428.89	2.00	-2.00	0.00	40.2896772	-105.0109095
5441.39	13.62	101.55	5117.41	-337.05	1650.71	1432.95	2.00	-2.00	0.00	40.2896746	-105.0108927
5461.39	13.22	101.55	5136.86	-337.98	1655.26	1436.90	2.00	-2.00	0.00	40.2896721	-105.0108764
5481.39	12.82	101.55	5156.35	-338.88	1659.67	1440.73	2.00	-2.00	0.00	40.2896696	-105.0108606
5501.39	12.42	101.55	5175.86	-339.76	1663.95	1444.45	2.00	-2.00	0.00	40.2896672	-105.0108452
5521.39	12.02	101.55	5195.41	-340.60	1668.10	1448.05	2.00	-2.00	0.00	40.2896649	-105.0108304
5541.39	11.62	101.55	5214.98	-341.42	1672.11	1451.53	2.00	-2.00	0.00	40.2896626	-105.0108160
5561.39	11.22	101.56	5234.59	-342.22	1675.99	1454.90	2.00	-2.00	0.01	40.2896604	-105.0108021
5581.39	10.82	101.56	5254.22	-342.98	1679.74	1458.15	2.00	-2.00	0.01	40.2896583	-105.0107886
5601.39	10.42	101.56	5273.88	-343.72	1683.35	1461.29	2.00	-2.00	0.01	40.2896563	-105.0107757
5621.39	10.02	101.56	5293.56	-344.43	1686.83	1464.31	2.00	-2.00	0.01	40.2896543	-105.0107632
5641.39	9.62	101.56	5313.27	-345.12	1690.17	1467.21	2.00	-2.00	0.01	40.2896525	-105.0107512
5661.39	9.22	101.56	5333.00	-345.77	1693.38	1470.00	2.00	-2.00	0.01	40.2896507	-105.0107397
5681.39	8.82	101.56	5352.75	-346.40	1696.45	1472.66	2.00	-2.00	0.01	40.2896489	-105.0107287
5701.39	8.42	101.57	5372.52	-347.00	1699.38	1475.21	2.00	-2.00	0.01	40.2896473	-105.0107182
5721.39	8.02	101.57	5392.32	-347.58	1702.19	1477.65	2.00	-2.00	0.01	40.2896457	-105.0107082

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100Ft	Build Rate °/100Ft	Walk Rate °/100Ft	Latitude Dec. Deg	Longitude Dec. Deg
5741.39	7.62	101.57	5412.13	-348.12	1704.85	1479.96	2.00	-2.00	0.01	40.2896442	-105.0106986
5761.39	7.22	101.57	5431.96	-348.64	1707.38	1482.16	2.00	-2.00	0.01	40.2896428	-105.0106895
5781.39	6.82	101.57	5451.81	-349.13	1709.78	1484.24	2.00	-2.00	0.01	40.2896414	-105.0106810
5801.39	6.42	101.58	5471.68	-349.59	1712.04	1486.20	2.00	-2.00	0.01	40.2896402	-105.0106729
5821.39	6.02	101.58	5491.56	-350.03	1714.16	1488.04	2.00	-2.00	0.02	40.2896390	-105.0106652
5841.39	5.62	101.58	5511.46	-350.43	1716.14	1489.77	2.00	-2.00	0.02	40.2896379	-105.0106581
5861.39	5.22	101.59	5531.37	-350.81	1718.00	1491.38	2.00	-2.00	0.02	40.2896368	-105.0106515
5881.39	4.82	101.59	5551.29	-351.17	1719.71	1492.87	2.00	-2.00	0.03	40.2896359	-105.0106453
5901.39	4.42	101.60	5571.23	-351.49	1721.29	1494.24	2.00	-2.00	0.03	40.2896350	-105.0106397
5921.39	4.02	101.61	5591.18	-351.79	1722.73	1495.49	2.00	-2.00	0.04	40.2896342	-105.0106345
5941.39	3.62	101.62	5611.13	-352.05	1724.03	1496.62	2.00	-2.00	0.04	40.2896334	-105.0106298
5961.39	3.22	101.63	5631.09	-352.29	1725.20	1497.64	2.00	-2.00	0.06	40.2896328	-105.0106257
5981.39	2.82	101.64	5651.07	-352.51	1726.24	1498.54	2.00	-2.00	0.07	40.2896322	-105.0106220
6001.39	2.42	101.66	5671.05	-352.69	1727.13	1499.32	2.00	-2.00	0.10	40.2896317	-105.0106187
6021.39	2.02	101.69	5691.03	-352.85	1727.89	1499.98	2.00	-2.00	0.13	40.2896312	-105.0106160
6041.39	1.62	101.73	5711.02	-352.98	1728.51	1500.52	2.00	-2.00	0.20	40.2896309	-105.0106138
6061.39	1.22	101.79	5731.01	-353.08	1729.00	1500.94	2.00	-2.00	0.33	40.2896306	-105.0106121
6081.39	0.82	101.92	5751.01	-353.15	1729.35	1501.24	2.00	-2.00	0.65	40.2896304	-105.0106108
6101.39	0.42	102.30	5771.01	-353.20	1729.56	1501.43	2.00	-2.00	1.90	40.2896303	-105.0106101
6121.39	0.02	117.44	5791.01	-353.21	1729.63	1501.49	2.00	-2.00	75.66	40.2896302	-105.0106098
<b>Begin Hold @ Vertical</b>											
6122.51	0.01	214.39	5792.13	-353.21	1729.63	1501.50	2.00	-1.30	8655.71	40.2896302	-105.0106098
 <b>Niobrara</b>											
6622.38	0.01	214.39	6292.00	-353.26	1729.60	1501.50	0.00	0.00	0.00	40.2896301	-105.0106099
 <b>Fort Hays</b>											
6942.38	0.01	214.39	6612.00	-353.29	1729.58	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100
 <b>Codell</b>											
6964.38	0.01	214.39	6634.00	-353.29	1729.58	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100
<b>PBHL @ 661' FNL &amp; 200' FWL</b>  <b>Hornung 21-28 Target</b>											
7124.38	0.01	214.39	6794.00	-353.30	1729.57	1501.51	0.00	0.00	0.00	40.2896300	-105.0106100
<b>TARGET DATA</b>											
Name	Shape	Easting (Ft)	Northing (Ft)	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)	
Hornung 21-28 Target	CIRCLE	3136518.7	1348730.1	1878.0	6794.0	-353.3	1729.6	100.0	200.0	100.0	
<b>LITHOLOGY DATA</b>											
Name	Description	Pattern	TVD Top (Ft)	TVD Bottom (Ft)	Dip Angle (deg)	Dip Direction (deg)					
Parkman	Parkman	SANDSTON	2748	3398	0.0	0.0					
Sussex	Sussex	SANDSTON	3398	3798	0.0	0.0					
Shannon	Shannon	SANDSTON	3798	6292	0.0	0.0					
Niobrara	Niobrara	CHALK	6292	6612	0.0	0.0					



LITHOLOGY DATA (cont.)

Name	Description	Pattern	TVD Top (Ft)	TVD Bottom (Ft)	Dip Angle (deg)	Dip Direction (deg)
Fort Hays	Fort Hays	LIMESTON	6612	6634	0.0	0.0
Codell	Codell	SANDSTON	6634	6794	0.0	0.0