

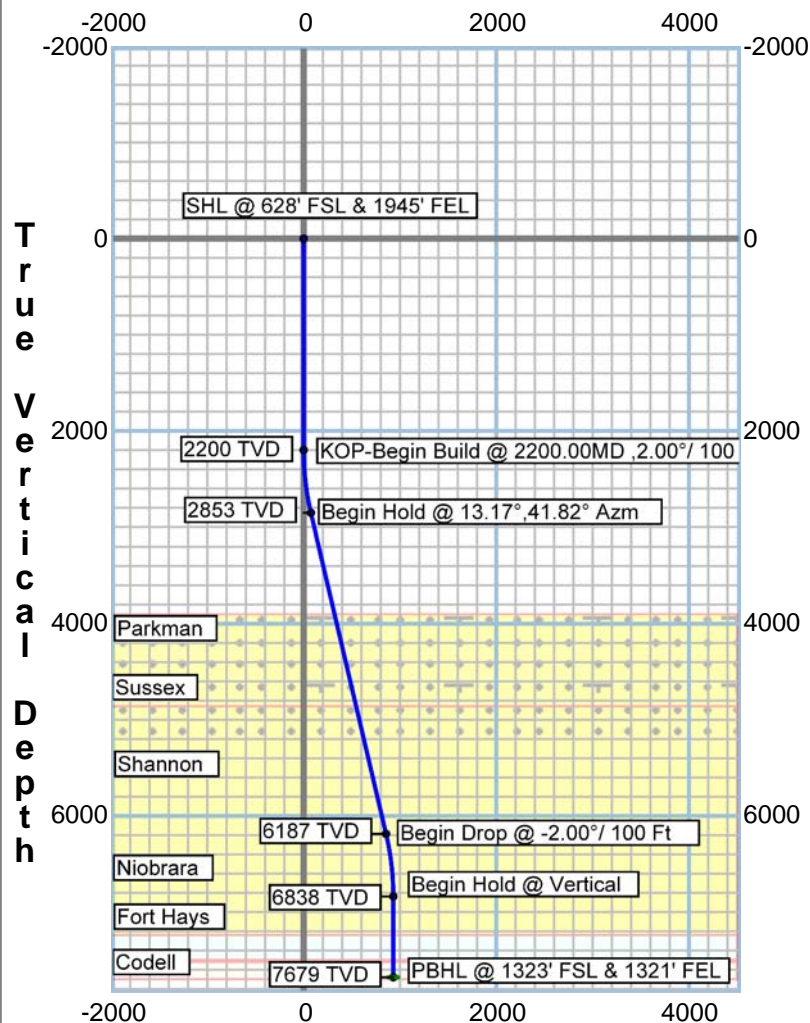


Job ID : Grant Brothers Pad  
Company : Sundance Energy, Inc.  
Lease/Well : Grant Bros 23-54  
Location : Sec 23 T2N R68W  
API JOB # : 05-123-xxxxx  
Rig Name : Cade 25  
State/Province : CO  
County/Parish : Weld  
Country : USA

Latitude : 40°7'7.0824" N  
Longitude : -104°58'4.3932" W  
Northing : 1286508.87  
Easting : 3148810.43  
System Zone : US State Plane 1983  
Projection Type : LAMBERT  
Elevation (To MSL) : 4920 ft  
RKB : 14 ft  
Comment : Plan 2

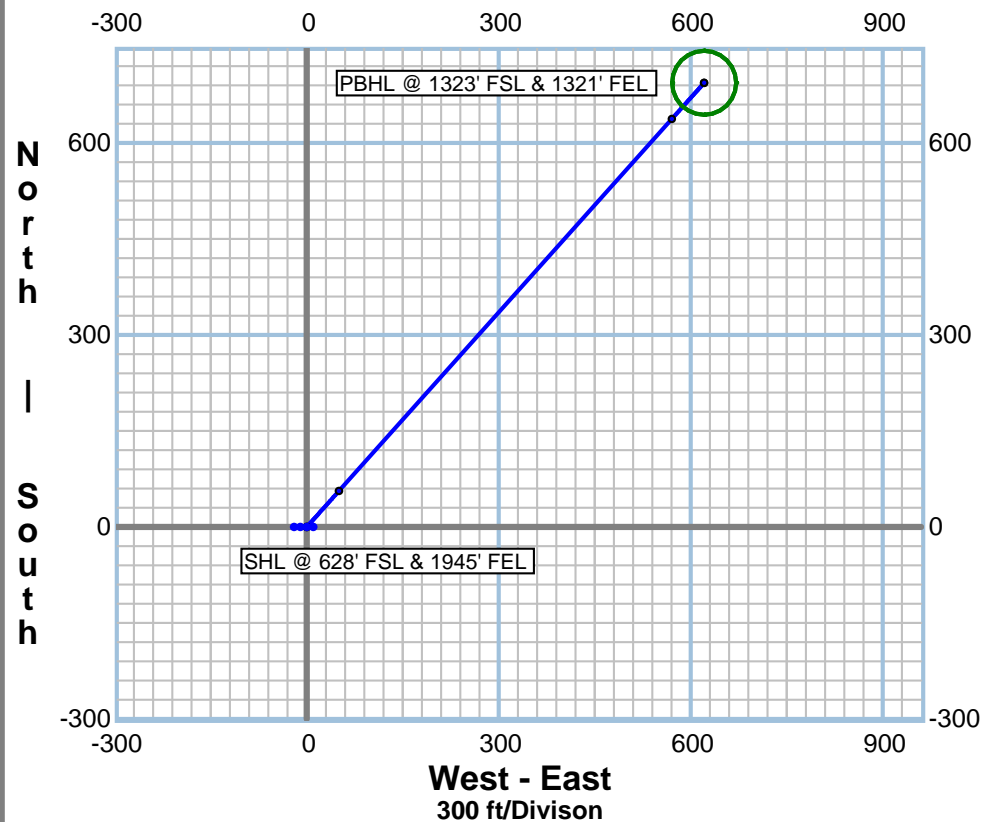


### Vertical Section Plot



Vertical Section (41.82°)  
2000 ft/Division

### Horizontal Plot



### CRITICAL POINTS - GRANT BROTHERS 23-54 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
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
2858.61	13.17	41.82	2852.82	50.26	56.17	75.38	75.38	41.82	0.00	1.99	1.99
6282.54	13.17	41.82	6186.70	570.43	637.55	855.49	855.49	41.82	0.00	0.00	0.00
6939.98	0.02	35.69	6838.35	620.66	693.71	930.84	930.84	41.82	-33.20	-2.00	2.00
7780.62	0.02	35.69	7679.00	620.85	693.96	931.15	931.15	41.82	0.00	0.00	0.00

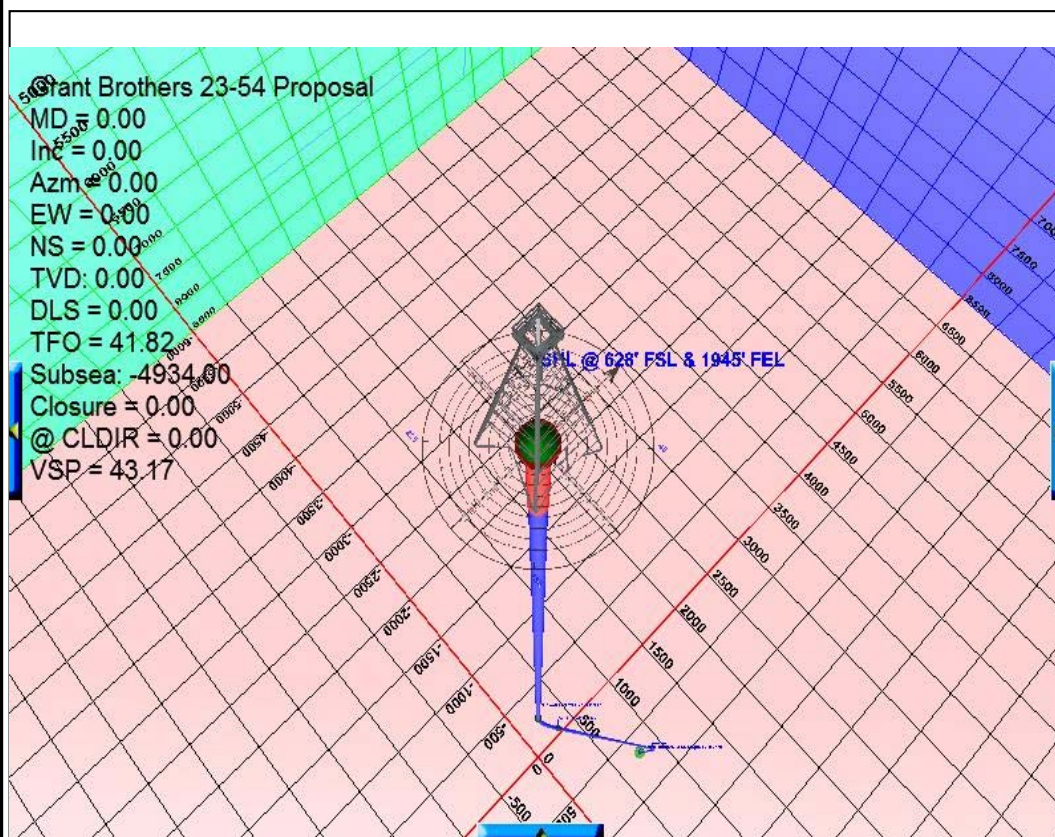


Job ID : Grant Brothers Pad  
Company : Sundance Energy, Inc.  
Lease/Well : Grant Bros 23-54  
Location : Sec 23 T2N R68W  
API JOB # : 05-123-xxxx  
Rig Name : Cade 25  
State/Province : CO  
County/Parish : Weld  
Country : USA

Latitude : 40°7'7.0824" N  
Longitude : -104°58'4.3932" W  
Northing : 1286508.87  
Easting : 3148810.43  
System Zone : US State Plane 1983  
Projection Type : LAMBERT  
Elevation (To MSL) : 4920 ft  
RKB : 14 ft  
Comment : Plan 2



TARGETS						LITHOLOGY					
SHAPE	NAME	Easting	Northing	Subsea TVD	EW	Name	Subsea Top	Subsea Bottom	Description	Dip_Angle	Dip_Direction
CIRCLE	Grant Brothers 23-54 Target	3149427.10	1287206.54	2745.00	620.85	Parkman	-1033.00	-533.00	Parkman	0.00	0.00
CIRCLE	Grant Brothers 23-4 Ae Target	3148106.00	1287200.80	2750.00	-700.27	Sussex	-533.00	-75.00	Sussex	0.00	0.00
CIRCLE	Grant Brothers 23-2 Ae Target	3149412.97	1288529.54	2759.00	614.65	Shannon	-75.00	2305.00	Shannon	0.00	0.00
CIRCLE	Grant Brothers 23-43 Target	3150081.13	1287870.58	2765.00	1278.85	Niobrara	2305.00	2565.00	Niobrara	0.00	0.00
						Fort Hays	2565.00	2585.00	Fort Hays	0.00	0.00
						Codell	2585.00	2765.00	Codell	0.00	0.00



MAGNETICS INFORMATION :  
Magnetic Model: C:\HawkEye\IGRF2005.MIF  
Date for Magnetics: 05/30/2013  
Latitude: 40°07'7.0824" N  
Longitude: -104°58'4.3932" W  
Magnetic Declination: 8.63  
Total Correction(Mag to Grid): 8.28  
Field Strength (nt): 52833  
B-X Component (nt): 20634  
B-Y Component (nt): 3131  
B-Z Component (nt): 48536  
B-Horz Component (nt): 20870  
Dip Angle: 66.73

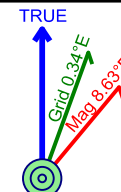
METHODS OF CORRECTIONS:  
\* To correct from Magnetic North to True North use:  
8.63°E --> TN = MN + 8.63  
\* To correct from True North to Grid North use:  
0.34°E --> GN = TN - 0.34 : True to Grid  
\* To Correct from Magnetic North to Grid North use:  
8.28°E --> GN = MN + 8.28 : Magnetic to Grid






**Job Number:** Grant Brothers Pad  
**Company:** Sundance Energy, Inc.  
**Lease/Well:** Grant Bros 23-54  
**Location:** Sec 23 T2N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 05-123-xxxx

**Elevation :** 4920.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.63°  
**Grid Convergence:** 0.34381 E  
**Date:** Monday, June 24, 2013

Calculated by HawkEye Software  
Minimum Curvature Method  
Vertical Section Plane 41.82°  
Northing (US ft): 1286508.87 Easting (US ft): 3148810.43  
Latitude: 40°07'7.0824" N Longitude: -104°58'4.3932" W  
Well Location: 647.09 FSL, 1946.25 FEL, Section 23, T2N, 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 @ 628' FSL &amp; 1945' FEL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9678870
<b>KOP-Begin Build @ 2200.00MD ,2.00°/ 100 Ft</b>											
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9678870
2220.00	0.40	41.81	2220.00	0.05	0.05	0.07	2.00	2.00	209.05	40.1186341	-104.9678868
2240.00	0.80	41.82	2240.00	0.21	0.19	0.28	2.00	2.00	0.02	40.1186346	-104.9678863
2260.00	1.20	41.82	2260.00	0.47	0.42	0.63	2.00	2.00	0.01	40.1186353	-104.9678855
2280.00	1.60	41.82	2279.99	0.83	0.74	1.12	2.00	2.00	0.00	40.1186363	-104.9678843
2300.00	2.00	41.82	2299.98	1.30	1.16	1.75	2.00	2.00	0.00	40.1186376	-104.9678828
2320.00	2.40	41.82	2319.96	1.87	1.68	2.51	2.00	2.00	0.00	40.1186391	-104.9678810
2340.00	2.80	41.82	2339.94	2.55	2.28	3.42	2.00	2.00	0.00	40.1186410	-104.9678788
2360.00	3.20	41.82	2359.92	3.33	2.98	4.47	2.00	2.00	0.00	40.1186431	-104.9678764
2380.00	3.60	41.82	2379.88	4.22	3.77	5.65	2.00	2.00	0.00	40.1186456	-104.9678735
2400.00	4.00	41.82	2399.84	5.20	4.65	6.98	2.00	2.00	0.00	40.1186483	-104.9678704
2420.00	4.40	41.82	2419.78	6.29	5.63	8.45	2.00	2.00	0.00	40.1186513	-104.9678669
2440.00	4.80	41.82	2439.72	7.49	6.70	10.05	2.00	2.00	0.00	40.1186546	-104.9678630
2460.00	5.20	41.82	2459.64	8.79	7.86	11.79	2.00	2.00	0.00	40.1186581	-104.9678589
2480.00	5.60	41.82	2479.55	10.19	9.12	13.67	2.00	2.00	0.00	40.1186620	-104.9678544
2500.00	6.00	41.82	2499.45	11.70	10.46	15.70	2.00	2.00	0.00	40.1186661	-104.9678496
2520.00	6.40	41.82	2519.33	13.31	11.90	17.86	2.00	2.00	0.00	40.1186705	-104.9678444
2540.00	6.80	41.82	2539.20	15.02	13.44	20.15	2.00	2.00	0.00	40.1186752	-104.9678390
2560.00	7.20	41.82	2559.05	16.84	15.06	22.59	2.00	2.00	0.00	40.1186802	-104.9678331
2580.00	7.60	41.82	2578.89	18.76	16.78	25.17	2.00	2.00	0.00	40.1186855	-104.9678270
2600.00	8.00	41.82	2598.70	20.78	18.59	27.88	2.00	2.00	0.00	40.1186910	-104.9678205
2620.00	8.40	41.82	2618.50	22.91	20.49	30.73	2.00	2.00	0.00	40.1186969	-104.9678137
2640.00	8.80	41.82	2638.27	25.13	22.49	33.73	2.00	2.00	0.00	40.1187030	-104.9678066
2660.00	9.20	41.82	2658.03	27.47	24.57	36.85	2.00	2.00	0.00	40.1187094	-104.9677991
2680.00	9.60	41.82	2677.76	29.90	26.75	40.12	2.00	2.00	0.00	40.1187161	-104.9677913

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
2700.00	10.00	41.82	2697.47	32.44	29.02	43.52	2.00	2.00	0.00	40.1187230	-104.9677832
2720.00	10.40	41.82	2717.15	35.08	31.38	47.07	2.00	2.00	0.00	40.1187303	-104.9677748
2740.00	10.80	41.82	2736.81	37.82	33.84	50.75	2.00	2.00	0.00	40.1187378	-104.9677660
2760.00	11.20	41.82	2756.44	40.66	36.38	54.56	2.00	2.00	0.00	40.1187456	-104.9677569
2780.00	11.60	41.82	2776.05	43.61	39.02	58.51	2.00	2.00	0.00	40.1187537	-104.9677475
2800.00	12.00	41.82	2795.62	46.66	41.74	62.60	2.00	2.00	0.00	40.1187621	-104.9677377
2820.00	12.40	41.82	2815.17	49.81	44.56	66.83	2.00	2.00	0.00	40.1187707	-104.9677277
2840.00	12.80	41.82	2834.69	53.06	47.47	71.19	2.00	2.00	0.00	40.1187797	-104.9677173
<b>Begin Hold @ 13.17°, 41.82° Azm</b>											
2858.61	13.17	41.82	2852.82	56.17	50.26	75.38	1.99	1.99	0.00	40.1187882	-104.9677073
 <b>Parkman</b>											
3935.10	13.17	41.82	3901.00	238.96	213.80	320.65	0.00	0.00	0.00	40.1192900	-104.9671225
 <b>Sussex</b>											
4448.61	13.17	41.82	4401.00	326.15	291.82	437.64	0.00	0.00	0.00	40.1195293	-104.9668435
 <b>Shannon</b>											
4918.98	13.17	41.82	4859.00	406.02	363.28	544.81	0.00	0.00	0.00	40.1197486	-104.9665880
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
6282.54	13.17	41.82	6186.70	637.55	570.43	855.49	0.00	0.00	0.00	40.1203841	-104.9658473
6302.54	12.77	41.82	6206.19	640.89	573.42	859.98	2.00	-2.00	0.00	40.1203933	-104.9658366
6322.54	12.37	41.82	6225.71	644.14	576.33	864.33	2.00	-2.00	0.00	40.1204022	-104.9658262
6342.54	11.97	41.82	6245.26	647.28	579.14	868.55	2.00	-2.00	0.00	40.1204109	-104.9658161
6362.54	11.57	41.82	6264.84	650.32	581.86	872.62	2.00	-2.00	0.00	40.1204192	-104.9658064
6382.54	11.17	41.82	6284.45	653.26	584.49	876.57	2.00	-2.00	0.00	40.1204273	-104.9657970
6402.54	10.77	41.82	6304.08	656.09	587.03	880.37	2.00	-2.00	0.00	40.1204351	-104.9657879
6422.54	10.37	41.82	6323.74	658.83	589.47	884.04	2.00	-2.00	0.00	40.1204426	-104.9657792
6442.54	9.97	41.82	6343.43	661.46	591.83	887.57	2.00	-2.00	0.00	40.1204498	-104.9657708
6462.54	9.57	41.82	6363.14	663.99	594.09	890.97	2.00	-2.00	0.00	40.1204567	-104.9657627
6482.54	9.17	41.82	6382.87	666.42	596.26	894.22	2.00	-2.00	0.00	40.1204634	-104.9657549
6502.54	8.77	41.81	6402.63	668.74	598.34	897.34	2.00	-2.00	0.00	40.1204698	-104.9657475
6522.54	8.37	41.81	6422.40	670.96	600.33	900.32	2.00	-2.00	0.00	40.1204759	-104.9657404
6542.54	7.97	41.81	6442.20	673.08	602.22	903.16	2.00	-2.00	0.00	40.1204817	-104.9657336
6562.54	7.57	41.81	6462.02	675.10	604.02	905.87	2.00	-2.00	0.00	40.1204872	-104.9657271
6582.54	7.17	41.81	6481.85	677.01	605.73	908.43	2.00	-2.00	0.00	40.1204925	-104.9657210
6602.54	6.77	41.81	6501.70	678.82	607.35	910.86	2.00	-2.00	-0.01	40.1204974	-104.9657152
6622.54	6.37	41.81	6521.57	680.52	608.88	913.15	2.00	-2.00	-0.01	40.1205021	-104.9657098
6642.54	5.97	41.81	6541.46	682.12	610.31	915.30	2.00	-2.00	-0.01	40.1205065	-104.9657047
6662.54	5.57	41.81	6561.35	683.62	611.65	917.31	2.00	-2.00	-0.01	40.1205106	-104.9656999
6682.54	5.17	41.80	6581.27	685.02	612.90	919.18	2.00	-2.00	-0.01	40.1205145	-104.9656954
6702.54	4.77	41.80	6601.19	686.31	614.05	920.91	2.00	-2.00	-0.01	40.1205180	-104.9656913
6722.54	4.37	41.80	6621.13	687.50	615.12	922.51	2.00	-2.00	-0.01	40.1205213	-104.9656875
6742.54	3.97	41.80	6641.07	688.58	616.09	923.96	2.00	-2.00	-0.02	40.1205242	-104.9656840
6762.54	3.57	41.79	6661.03	689.56	616.96	925.28	2.00	-2.00	-0.02	40.1205269	-104.9656809

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
6782.54	3.17	41.79	6681.00	690.44	617.74	926.45	2.00	-2.00	-0.02	40.1205293	-104.9656781
6802.54	2.77	41.78	6700.97	691.21	618.44	927.49	2.00	-2.00	-0.03	40.1205315	-104.9656756
6822.54	2.37	41.77	6720.95	691.88	619.03	928.39	2.00	-2.00	-0.04	40.1205333	-104.9656735
6842.54	1.97	41.76	6740.93	692.45	619.54	929.14	2.00	-2.00	-0.06	40.1205348	-104.9656717
6862.54	1.57	41.75	6760.93	692.91	619.95	929.76	2.00	-2.00	-0.08	40.1205361	-104.9656702
6882.54	1.17	41.72	6780.92	693.26	620.27	930.24	2.00	-2.00	-0.14	40.1205371	-104.9656691
6902.54	0.77	41.66	6800.92	693.52	620.49	930.58	2.00	-2.00	-0.29	40.1205378	-104.9656683
6922.54	0.37	41.47	6820.92	693.66	620.62	930.78	2.00	-2.00	-0.92	40.1205382	-104.9656678
Begin Hold @ Vertical											
6939.98	0.02	35.69	6838.35	693.71	620.66	930.84	2.00	-2.00	-33.20	40.1205383	-104.9656676
<div><div></div>Niobrara</div>											
7340.63	0.02	35.69	7239.00	693.83	620.75	930.99	0.00	0.00	0.00	40.1205386	-104.9656673
<div><div></div>Fort Hays</div>											
7600.63	0.02	35.69	7499.00	693.91	620.81	931.08	0.00	0.00	0.00	40.1205389	-104.9656671
<div><div></div>Codell</div>											
7620.63	0.02	35.69	7519.00	693.92	620.81	931.09	0.00	0.00	0.00	40.1205389	-104.9656671
PBHL @ 1323' FSL & 1321' FEL <div><div></div>Grant Brothers 23-54 Target</div>											
7780.62	0.02	35.69	7679.00	693.96	620.85	931.15	0.00	0.00	0.00	40.1205390	-104.9656670
TARGET DATA											
Name		Shape	Easting (Ft)	Northing (Ft)	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)
Grant Brothers 23-54 Target		CIRCLE	3149427.1	1287206.5	2745.0	7679.0	694.0	620.8	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	3901	4401	0.0	0.0				
Sussex		Sussex	SANDSTON	4401	4859	0.0	0.0				
Shannon		Shannon	SANDSTON	4859	7239	0.0	0.0				
Niobrara		Niobrara	CHALK	7239	7499	0.0	0.0				
Fort Hays		Fort Hays	LIMESTON	7499	7519	0.0	0.0				
Codell		Codell	SANDSTON	7519	7699	0.0	0.0				

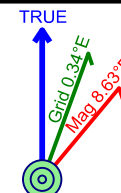




**Job Number:** Grant Brothers Pad  
**Company:** Sundance Energy, Inc.  
**Lease/Well:** Grant Bros 23-54  
**Location:** Sec 23 T2N R68W  
**Rig Name:** Cade 25  
**State/County:** CO/ Weld  
**Country:** USA  
**API Number:** 05-123-xxxx

**Elevation :** 4920.00 ft  
**RKB:** 14.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** Colorado Northern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 8.63°  
**Grid Convergence:** 0.34381 E  
**Date:** Monday, June 24, 2013

Calculated by HawkEye Software  
Minimum Curvature Method  
Vertical Section Plane 41.82°  
Northing (US ft): 1286508.87 Easting (US ft): 3148810.43  
Latitude: 40°07'7.0824" N Longitude: -104°58'4.3932" W  
Well Location: 647.09 FSL, 1946.25 FEL, Section 23, T2N, 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 @ 628' FSL &amp; 1945' FEL</b>											
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9678870
<b>KOP-Begin Build @ 2200.00MD ,2.00°/ 100 Ft</b>											
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	40.1186340	-104.9678870
<b>Begin Hold @ 13.17°,41.82° Azm</b>											
2858.61	13.17	41.82	2852.82	56.18	50.26	75.38	1.99	1.99	0.00	40.1187882	-104.9677073
<b> Parkman</b>											
3935.10	13.17	41.82	3901.00	238.96	213.80	320.65	0.00	0.00	0.00	40.1192900	-104.9671225
<b> Sussex</b>											
4448.61	13.17	41.82	4401.00	326.15	291.82	437.64	0.00	0.00	0.00	40.1195293	-104.9668435
<b> Shannon</b>											
4918.98	13.17	41.82	4859.00	406.02	363.28	544.81	0.00	0.00	0.00	40.1197486	-104.9665880
<b>Begin Drop @ -2.00°/ 100 Ft</b>											
6282.54	13.17	41.82	6186.70	637.55	570.43	855.49	0.00	0.00	0.00	40.1203841	-104.9658473
<b>Begin Hold @ Vertical</b>											
6939.98	0.02	35.69	6838.35	693.71	620.66	930.84	2.00	-2.00	-72.24	40.1205383	-104.9656676
<b> Niobrara</b>											
7340.63	0.02	35.69	7239.00	693.83	620.75	930.99	0.04	0.00	0.00	40.1205387	-104.9656673
<b> Fort Hays</b>											
7600.63	0.02	35.69	7499.00	693.91	620.81	931.08	0.00	0.00	0.00	40.1205389	-104.9656671
<b> Codell</b>											
7620.63	0.02	35.69	7519.00	693.92	620.81	931.09	0.00	0.00	0.00	40.1205389	-104.9656671
<b>PBHL @ 1323' FSL &amp; 1321' FEL  Grant Brothers 23-54 Target</b>											
7780.62	0.02	35.69	7679.00	693.97	620.85	931.15	0.00	0.00	0.00	40.1205390	-104.9656670

#### TARGET DATA

Name	Shape	Easting (Ft)	Northing (Ft)	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Dia. (Ft)
Grant Brothers 23-54 Target	CIRCLE	3149427.1	1287206.5	2745.0	7679.0	694.0	620.8	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	3901	4401	0.0	0.0
Sussex	Sussex	SANDSTON	4401	4859	0.0	0.0
Shannon	Shannon	SANDSTON	4859	7239	0.0	0.0
Niobrara	Niobrara	CHALK	7239	7499	0.0	0.0
Fort Hays	Fort Hays	LIMESTON	7499	7519	0.0	0.0
Codell	Codell	SANDSTON	7519	7699	0.0	0.0