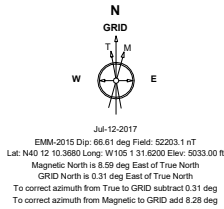


Cub Creek Energy, LLC

Location	Weld County, CO	Slot	OLANDER 17
Field	WATTENBERG	Well	OLANDER 17
Installation	Olander Pad Rework 04-09-2019	Wellbore	OLANDER 17 (PWB)

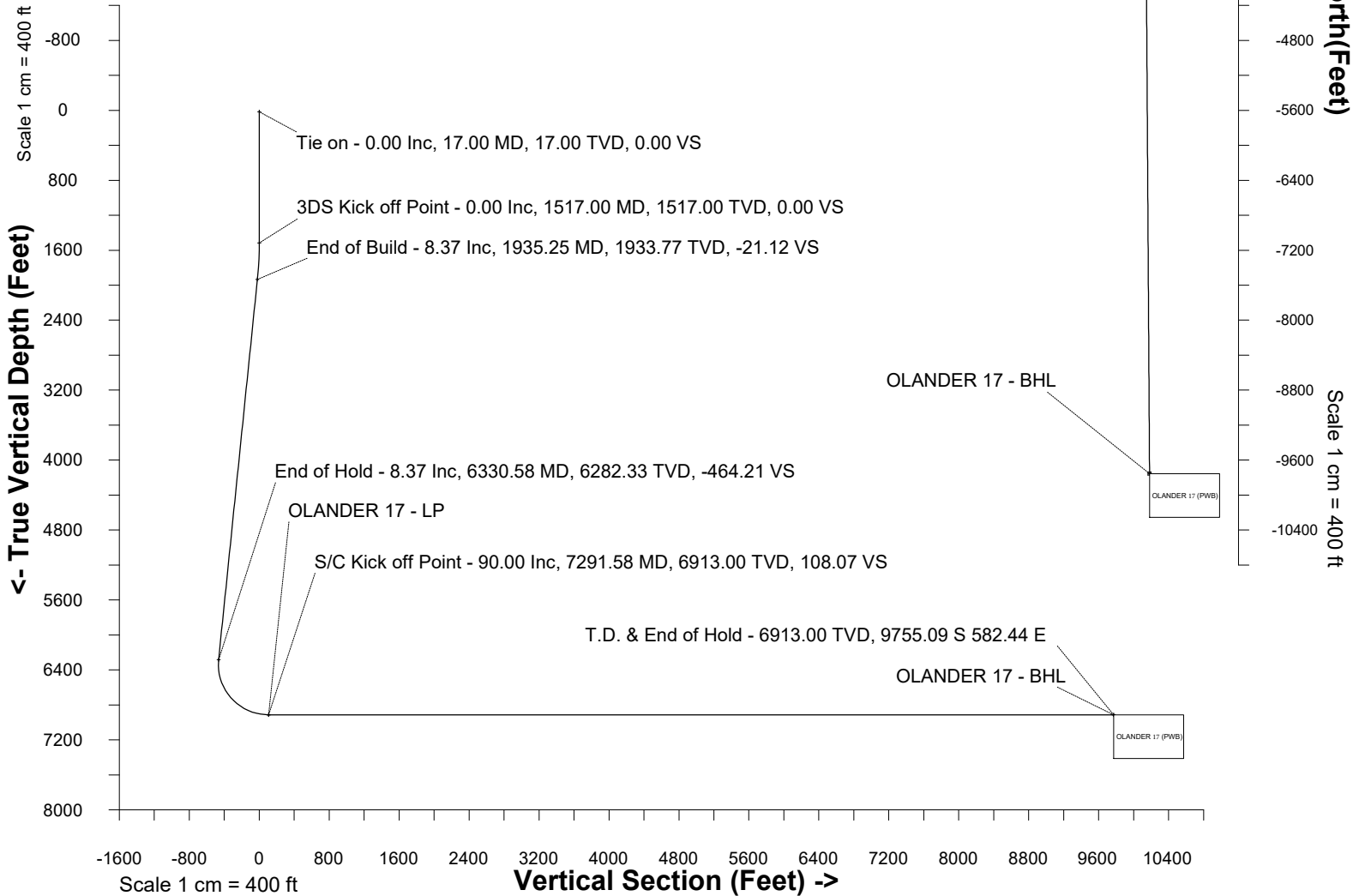


Created by sean.dolfinger
 Date plotted 11-Apr-2019
 Plot reference is OLANDER 17 (PWB).
 Ref wellpath is OLANDER 17 (PWP#1).
 Coordinates are in Feet reference OLANDER 17.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum. Rig
 Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5048.00 ft. Plot
 North is aligned to GRID North.

Scale 1 cm = 400 ft **East (Feet) ->**

-800 0 800 1600

WELL PROFILE DATA								
Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	17.00	0.00	0.00	17.00	S 0.00	W 0.00		0.00
KOP	1517.00	0.00	42.72	1517.00	S 0.00	W 0.00	0.00	0.00
End of Build	1935.25	8.37	42.72	1933.77	N 22.39	E 20.68	2.00	-21.12
End of Hold	6330.58	8.37	42.72	6282.33	N 492.17	E 454.47	0.00	-464.21
Target OLANDER 17 - LP	7291.58	90.00	179.64	6913.00	S 77.13	E 521.41	10.00	108.07
T.D. & Target OLA...BHL	16969.73	90.00	179.64	6913.00	S 9755.09	E 582.44	0.00	9772.46



Azimuth 176.58 with reference 0.00 N, 0.00 E from OLANDER 17

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 17 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
OLANDER 17	40.20288000	-105.02508000	1317106.8268	3132654.0941	0.55N	103.35E	0.00

Declination		
Date	Source	Time
Jul-12-2017	EMM-2015	14:01

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Olander Pad Rework 04-09-2019	40.20288000	-105.02545000	1317106.2735	3132550.7471	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
17.00	0.00	0.00	17.00	-5031.00	0.00N	0.00E		0.00
1517.00	0.00	42.72	1517.00	-3531.00	0.00N	0.00E	==>	0.00
1935.25	8.37	42.72	1933.77	-3114.23	22.39N	20.68E	2.00	-21.12
6330.58	8.37	42.72	6282.33	1234.33	492.17N	454.47E	==>	-464.21
7291.58	90.00	179.64	6913.00	1865.00	77.13S	521.41E	10.00	108.07
16969.73	90.00	179.64	6913.00	1865.00	9755.09S	582.44E	==>	9772.46

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	40.20288000	-105.02508000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1517.00	0.00	42.72	1517.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02508000
1600.00	1.66	42.72	1599.99	0.88N	0.82E	2.00	-0.83	40.20288241	-105.02507706
1700.00	3.66	42.72	1699.88	4.29N	3.96E	2.00	-4.05	40.20289173	-105.02506573
1800.00	5.66	42.72	1799.54	10.26N	9.48E	2.00	-9.68	40.20290803	-105.02504588
1900.00	7.66	42.72	1898.86	18.78N	17.34E	2.00	-17.71	40.20293130	-105.02501755
1935.25	8.37	42.72	1933.77	22.39N	20.68E	2.00	-21.12	40.20294116	-105.02500555
2000.00	8.37	42.72	1997.83	29.31N	27.07E	==>	-27.65	40.20296006	-105.02498254
2100.00	8.37	42.72	2096.76	40.00N	36.94E	==>	-37.73	40.20298926	-105.02494700
2200.00	8.37	42.72	2195.70	50.69N	46.81E	==>	-47.81	40.20301845	-105.02491147
2300.00	8.37	42.72	2294.64	61.38N	56.68E	==>	-57.89	40.20304764	-105.02487593
2400.00	8.37	42.72	2393.57	72.06N	66.54E	==>	-67.97	40.20307684	-105.02484039
2500.00	8.37	42.72	2492.51	82.75N	76.41E	==>	-78.05	40.20310603	-105.02480486
2600.00	8.37	42.72	2591.44	93.44N	86.28E	==>	-88.13	40.20313522	-105.02476932
2700.00	8.37	42.72	2690.38	104.13N	96.15E	==>	-98.21	40.20316442	-105.02473378
2800.00	8.37	42.72	2789.32	114.82N	106.02E	==>	-108.29	40.20319361	-105.02469825

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5048.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 176.58 degrees
Bottom hole distance is 9772.46 Feet on azimuth 176.58 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 17 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
2900.00	8.37	42.72	2888.25	125.51N	115.89E	==>	-118.38	40.20322280	-105.02466271
3000.00	8.37	42.72	2987.19	136.19N	125.76E	==>	-128.46	40.20325200	-105.02462717
3100.00	8.37	42.72	3086.12	146.88N	135.63E	==>	-138.54	40.20328119	-105.02459163
3200.00	8.37	42.72	3185.06	157.57N	145.50E	==>	-148.62	40.20331038	-105.02455610
3300.00	8.37	42.72	3284.00	168.26N	155.37E	==>	-158.70	40.20333958	-105.02452056
3400.00	8.37	42.72	3382.93	178.95N	165.24E	==>	-168.78	40.20336877	-105.02448502
3500.00	8.37	42.72	3481.87	189.63N	175.11E	==>	-178.86	40.20339796	-105.02444949
3600.00	8.37	42.72	3580.80	200.32N	184.98E	==>	-188.94	40.20342716	-105.02441395
3700.00	8.37	42.72	3679.74	211.01N	194.85E	==>	-199.02	40.20345635	-105.02437841
3800.00	8.37	42.72	3778.68	221.70N	204.72E	==>	-209.10	40.20348554	-105.02434287
3900.00	8.37	42.72	3877.61	232.39N	214.59E	==>	-219.19	40.20351474	-105.02430734
4000.00	8.37	42.72	3976.55	243.08N	224.46E	==>	-229.27	40.20354393	-105.02427180
4100.00	8.37	42.72	4075.49	253.76N	234.33E	==>	-239.35	40.20357312	-105.02423626
4200.00	8.37	42.72	4174.42	264.45N	244.20E	==>	-249.43	40.20360232	-105.02420072
4300.00	8.37	42.72	4273.36	275.14N	254.06E	==>	-259.51	40.20363151	-105.02416519
4400.00	8.37	42.72	4372.29	285.83N	263.93E	==>	-269.59	40.20366070	-105.02412965
4500.00	8.37	42.72	4471.23	296.52N	273.80E	==>	-279.67	40.20368990	-105.02409411
4600.00	8.37	42.72	4570.17	307.21N	283.67E	==>	-289.75	40.20371909	-105.02405857
4700.00	8.37	42.72	4669.10	317.89N	293.54E	==>	-299.83	40.20374828	-105.02402303
4800.00	8.37	42.72	4768.04	328.58N	303.41E	==>	-309.91	40.20377748	-105.02398750
4900.00	8.37	42.72	4866.97	339.27N	313.28E	==>	-319.99	40.20380667	-105.02395196
5000.00	8.37	42.72	4965.91	349.96N	323.15E	==>	-330.08	40.20383586	-105.02391642
5100.00	8.37	42.72	5064.85	360.65N	333.02E	==>	-340.16	40.20386505	-105.02388088
5200.00	8.37	42.72	5163.78	371.33N	342.89E	==>	-350.24	40.20389425	-105.02384535
5300.00	8.37	42.72	5262.72	382.02N	352.76E	==>	-360.32	40.20392344	-105.02380981
5400.00	8.37	42.72	5361.65	392.71N	362.63E	==>	-370.40	40.20395263	-105.02377427
5500.00	8.37	42.72	5460.59	403.40N	372.50E	==>	-380.48	40.20398183	-105.02373873
5600.00	8.37	42.72	5559.53	414.09N	382.37E	==>	-390.56	40.20401102	-105.02370319
5700.00	8.37	42.72	5658.46	424.78N	392.24E	==>	-400.64	40.20404021	-105.02366766
5800.00	8.37	42.72	5757.40	435.46N	402.11E	==>	-410.72	40.20406941	-105.02363212
5900.00	8.37	42.72	5856.34	446.15N	411.98E	==>	-420.80	40.20409860	-105.02359658
6000.00	8.37	42.72	5955.27	456.84N	421.85E	==>	-430.89	40.20412779	-105.02356104
6100.00	8.37	42.72	6054.21	467.53N	431.72E	==>	-440.97	40.20415699	-105.02352550
6200.00	8.37	42.72	6153.14	478.22N	441.59E	==>	-451.05	40.20418618	-105.02348997
6300.00	8.37	42.72	6252.08	488.90N	451.46E	==>	-461.13	40.20421537	-105.02345443
6330.58	8.37	42.72	6282.33	492.17N	454.47E	==>	-464.21	40.20422430	-105.02344356
6400.00	5.80	98.01	6351.29	495.40N	461.38E	10.00	-467.02	40.20423305	-105.02341878
6500.00	12.25	152.08	6450.15	485.29N	471.37E	10.00	-456.34	40.20420517	-105.02338320
6600.00	21.58	164.93	6545.75	458.09N	481.14E	10.00	-428.60	40.20413035	-105.02334873
6700.00	31.32	170.14	6635.18	414.61N	490.40E	10.00	-384.65	40.20401087	-105.02331643
6800.00	41.17	173.04	6715.74	356.18N	498.86E	10.00	-325.82	40.20385036	-105.02328727
6900.00	51.08	174.99	6784.96	284.58N	506.26E	10.00	-253.90	40.20365370	-105.02326214
7000.00	61.00	176.45	6840.76	201.97N	512.39E	10.00	-171.07	40.20342685	-105.02324180
7100.00	70.94	177.65	6881.43	110.87N	517.05E	10.00	-79.86	40.20317672	-105.02322688
7200.00	80.89	178.72	6905.73	14.05N	520.10E	10.00	16.97	40.20291090	-105.02321782
7291.58	90.00	179.64	6913.00	77.13S	521.41E	10.00	108.07	40.20266060	-105.02321490
7300.00	90.00	179.64	6913.00	85.55S	521.46E	==>	116.48	40.20263748	-105.02321487
7400.00	90.00	179.64	6913.00	185.55S	522.09E	==>	216.34	40.20236298	-105.02321454
7500.00	90.00	179.64	6913.00	285.55S	522.72E	==>	316.20	40.20208848	-105.02321421
7600.00	90.00	179.64	6913.00	385.55S	523.35E	==>	416.06	40.20181398	-105.02321387
7700.00	90.00	179.64	6913.00	485.55S	523.98E	==>	515.91	40.20153948	-105.02321354
7800.00	90.00	179.64	6913.00	585.54S	524.61E	==>	615.77	40.20126498	-105.02321321
7900.00	90.00	179.64	6913.00	685.54S	525.24E	==>	715.63	40.20099048	-105.02321287
8000.00	90.00	179.64	6913.00	785.54S	525.87E	==>	815.49	40.20071598	-105.02321254
8100.00	90.00	179.64	6913.00	885.54S	526.50E	==>	915.34	40.20044148	-105.02321221
8200.00	90.00	179.64	6913.00	985.54S	527.13E	==>	1015.20	40.20016698	-105.02321188
8300.00	90.00	179.64	6913.00	1085.53S	527.77E	==>	1115.06	40.19989248	-105.02321154
8400.00	90.00	179.64	6913.00	1185.53S	528.40E	==>	1214.92	40.19961798	-105.02321121

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Vertical Section is from 0.00N 0.00E on azimuth 176.58 degrees
Bottom hole distance is 9772.46 Feet on azimuth 176.58 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 17 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
8500.00	90.00	179.64	6913.00	1285.53S	529.03E	==>	1314.78	40.19934348	-105.02321088
8600.00	90.00	179.64	6913.00	1385.53S	529.66E	==>	1414.63	40.19906898	-105.02321055
8700.00	90.00	179.64	6913.00	1485.53S	530.29E	==>	1514.49	40.19879449	-105.02321021
8800.00	90.00	179.64	6913.00	1585.52S	530.92E	==>	1614.35	40.19851999	-105.02320988
8900.00	90.00	179.64	6913.00	1685.52S	531.55E	==>	1714.21	40.19824549	-105.02320955
9000.00	90.00	179.64	6913.00	1785.52S	532.18E	==>	1814.06	40.19797099	-105.02320921
9100.00	90.00	179.64	6913.00	1885.52S	532.81E	==>	1913.92	40.19769649	-105.02320888
9200.00	90.00	179.64	6913.00	1985.52S	533.44E	==>	2013.78	40.19742199	-105.02320855
9300.00	90.00	179.64	6913.00	2085.51S	534.07E	==>	2113.64	40.19714749	-105.02320822
9400.00	90.00	179.64	6913.00	2185.51S	534.70E	==>	2213.50	40.19687299	-105.02320788
9500.00	90.00	179.64	6913.00	2285.51S	535.33E	==>	2313.35	40.19659849	-105.02320755
9600.00	90.00	179.64	6913.00	2385.51S	535.96E	==>	2413.21	40.19632399	-105.02320722
9700.00	90.00	179.64	6913.00	2485.51S	536.59E	==>	2513.07	40.19604949	-105.02320688
9800.00	90.00	179.64	6913.00	2585.51S	537.22E	==>	2612.93	40.19577499	-105.02320655
9900.00	90.00	179.64	6913.00	2685.50S	537.86E	==>	2712.79	40.19550049	-105.02320622
10000.00	90.00	179.64	6913.00	2785.50S	538.49E	==>	2812.64	40.19522599	-105.02320589
10100.00	90.00	179.64	6913.00	2885.50S	539.12E	==>	2912.50	40.19495149	-105.02320555
10200.00	90.00	179.64	6913.00	2985.50S	539.75E	==>	3012.36	40.19467699	-105.02320522
10300.00	90.00	179.64	6913.00	3085.50S	540.38E	==>	3112.22	40.19440249	-105.02320489
10400.00	90.00	179.64	6913.00	3185.49S	541.01E	==>	3212.07	40.19412799	-105.02320456
10500.00	90.00	179.64	6913.00	3285.49S	541.64E	==>	3311.93	40.19385349	-105.02320422
10600.00	90.00	179.64	6913.00	3385.49S	542.27E	==>	3411.79	40.19357900	-105.02320389
10700.00	90.00	179.64	6913.00	3485.49S	542.90E	==>	3511.65	40.19330450	-105.02320356
10800.00	90.00	179.64	6913.00	3585.49S	543.53E	==>	3611.51	40.19303000	-105.02320322
10900.00	90.00	179.64	6913.00	3685.48S	544.16E	==>	3711.36	40.19275550	-105.02320289
11000.00	90.00	179.64	6913.00	3785.48S	544.79E	==>	3811.22	40.19248100	-105.02320256
11100.00	90.00	179.64	6913.00	3885.48S	545.42E	==>	3911.08	40.19220650	-105.02320223
11200.00	90.00	179.64	6913.00	3985.48S	546.05E	==>	4010.94	40.19193200	-105.02320189
11300.00	90.00	179.64	6913.00	4085.48S	546.68E	==>	4110.80	40.19165750	-105.02320156
11400.00	90.00	179.64	6913.00	4185.47S	547.32E	==>	4210.65	40.19138300	-105.02320123
11500.00	90.00	179.64	6913.00	4285.47S	547.95E	==>	4310.51	40.19110850	-105.02320090
11600.00	90.00	179.64	6913.00	4385.47S	548.58E	==>	4410.37	40.19083400	-105.02320056
11700.00	90.00	179.64	6913.00	4485.47S	549.21E	==>	4510.23	40.19055950	-105.02320023
11800.00	90.00	179.64	6913.00	4585.47S	549.84E	==>	4610.08	40.19028500	-105.02319990
11900.00	90.00	179.64	6913.00	4685.46S	550.47E	==>	4709.94	40.19001050	-105.02319956
12000.00	90.00	179.64	6913.00	4785.46S	551.10E	==>	4809.80	40.18973600	-105.02319923
12100.00	90.00	179.64	6913.00	4885.46S	551.73E	==>	4909.66	40.18946150	-105.02319890
12200.00	90.00	179.64	6913.00	4985.46S	552.36E	==>	5009.52	40.18918700	-105.02319857
12300.00	90.00	179.64	6913.00	5085.46S	552.99E	==>	5109.37	40.18891250	-105.02319823
12400.00	90.00	179.64	6913.00	5185.45S	553.62E	==>	5209.23	40.18863800	-105.02319790
12500.00	90.00	179.64	6913.00	5285.45S	554.25E	==>	5309.09	40.18836350	-105.02319757
12600.00	90.00	179.64	6913.00	5385.45S	554.88E	==>	5408.95	40.18808900	-105.02319724
12700.00	90.00	179.64	6913.00	5485.45S	555.51E	==>	5508.80	40.18781450	-105.02319690
12800.00	90.00	179.64	6913.00	5585.45S	556.14E	==>	5608.66	40.18754000	-105.02319657
12900.00	90.00	179.64	6913.00	5685.44S	556.77E	==>	5708.52	40.18726550	-105.02319624
13000.00	90.00	179.64	6913.00	5785.44S	557.41E	==>	5808.38	40.18699100	-105.02319590
13100.00	90.00	179.64	6913.00	5885.44S	558.04E	==>	5908.24	40.18671650	-105.02319557
13200.00	90.00	179.64	6913.00	5985.44S	558.67E	==>	6008.09	40.18644200	-105.02319524
13300.00	90.00	179.64	6913.00	6085.44S	559.30E	==>	6107.95	40.18616750	-105.02319491
13400.00	90.00	179.64	6913.00	6185.43S	559.93E	==>	6207.81	40.18589300	-105.02319457
13500.00	90.00	179.64	6913.00	6285.43S	560.56E	==>	6307.67	40.18561850	-105.02319424
13600.00	90.00	179.64	6913.00	6385.43S	561.19E	==>	6407.53	40.18534400	-105.02319391
13700.00	90.00	179.64	6913.00	6485.43S	561.82E	==>	6507.38	40.18506950	-105.02319358
13800.00	90.00	179.64	6913.00	6585.43S	562.45E	==>	6607.24	40.18479500	-105.02319324
13900.00	90.00	179.64	6913.00	6685.42S	563.08E	==>	6707.10	40.18452050	-105.02319291
14000.00	90.00	179.64	6913.00	6785.42S	563.71E	==>	6806.96	40.18424600	-105.02319258
14100.00	90.00	179.64	6913.00	6885.42S	564.34E	==>	6906.81	40.18397150	-105.02319225
14200.00	90.00	179.64	6913.00	6985.42S	564.97E	==>	7006.67	40.18369700	-105.02319191
14300.00	90.00	179.64	6913.00	7085.42S	565.60E	==>	7106.53	40.18342250	-105.02319158

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Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 17 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
14400.00	90.00	179.64	6913.00	7185.41S	566.23E	==>	7206.39	40.18314800	-105.02319125
14500.00	90.00	179.64	6913.00	7285.41S	566.87E	==>	7306.25	40.18287350	-105.02319091
14600.00	90.00	179.64	6913.00	7385.41S	567.50E	==>	7406.10	40.18259900	-105.02319058
14700.00	90.00	179.64	6913.00	7485.41S	568.13E	==>	7505.96	40.18232450	-105.02319025
14800.00	90.00	179.64	6913.00	7585.41S	568.76E	==>	7605.82	40.18205000	-105.02318992
14900.00	90.00	179.64	6913.00	7685.40S	569.39E	==>	7705.68	40.18177550	-105.02318958
15000.00	90.00	179.64	6913.00	7785.40S	570.02E	==>	7805.53	40.18150100	-105.02318925
15100.00	90.00	179.64	6913.00	7885.40S	570.65E	==>	7905.39	40.18122650	-105.02318892
15200.00	90.00	179.64	6913.00	7985.40S	571.28E	==>	8005.25	40.18095200	-105.02318859
15300.00	90.00	179.64	6913.00	8085.40S	571.91E	==>	8105.11	40.18067750	-105.02318825
15400.00	90.00	179.64	6913.00	8185.39S	572.54E	==>	8204.97	40.18040300	-105.02318792
15500.00	90.00	179.64	6913.00	8285.39S	573.17E	==>	8304.82	40.18012850	-105.02318759
15600.00	90.00	179.64	6913.00	8385.39S	573.80E	==>	8404.68	40.17985400	-105.02318726
15700.00	90.00	179.64	6913.00	8485.39S	574.43E	==>	8504.54	40.17957950	-105.02318692
15800.00	90.00	179.64	6913.00	8585.39S	575.06E	==>	8604.40	40.17930500	-105.02318659
15900.00	90.00	179.64	6913.00	8685.38S	575.69E	==>	8704.26	40.17903050	-105.02318626
16000.00	90.00	179.64	6913.00	8785.38S	576.33E	==>	8804.11	40.17875600	-105.02318593
16100.00	90.00	179.64	6913.00	8885.38S	576.96E	==>	8903.97	40.17848150	-105.02318559
16200.00	90.00	179.64	6913.00	8985.38S	577.59E	==>	9003.83	40.17820700	-105.02318526
16300.00	90.00	179.64	6913.00	9085.38S	578.22E	==>	9103.69	40.17793250	-105.02318493
16400.00	90.00	179.64	6913.00	9185.37S	578.85E	==>	9203.54	40.17765800	-105.02318459
16500.00	90.00	179.64	6913.00	9285.37S	579.48E	==>	9303.40	40.17738350	-105.02318426
16600.00	90.00	179.64	6913.00	9385.37S	580.11E	==>	9403.26	40.17710900	-105.02318393
16700.00	90.00	179.64	6913.00	9485.37S	580.74E	==>	9503.12	40.17683450	-105.02318360
16800.00	90.00	179.64	6913.00	9585.37S	581.37E	==>	9602.98	40.17656000	-105.02318326
16900.00	90.00	179.64	6913.00	9685.36S	582.00E	==>	9702.83	40.17628550	-105.02318293
16969.73	90.00	179.64	6913.00	9755.09S	582.44E	==>	9772.46	40.17609410	-105.02318270

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Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
OLANDER 17 - LP	77.13S	521.41E	6913.00	40.20266060	-105.02321490	1317029.70	3133175.48
OLANDER 17 - BHL	9755.09S	582.44E	6913.00	40.17609410	-105.02318270	1307352.18	3133236.51

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
791068	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
791067	Planned	16969.73	6913.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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