

Cub Creek Energy, LLC

Location	Weld County, CO	Slot	OLANDER 5
Field	WATTENBERG	Well	OLANDER 5
Installation	Olander Pad Rework 04-09-2019	Wellbore	OLANDER 5 (PWB)

N
GRID

 Jul-12-2017
 EMM-2015 Dip: 66.61 deg Field: 52203.1 mT
 Lat: N40 12 10.3080 Long: W105 1 31.6200 Elev: 5033.00 ft
 Magnetic North is 8.59 deg East of True North
 GRID North is 0.31 deg East of True North
 To correct azimuth from True to GRID subtract 0.31 deg
 To correct azimuth from Magnetic to GRID add 8.28 deg

Created by sean.dolfinger
 Date plotted 11-Apr-2019
 Plot reference is OLANDER 5 (PWB).
 Ref wellpath is OLANDER 5 (PWP#1).
 Coordinates are in Feet reference OLANDER 5.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum.
 Rig Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5050.00 ft.
 Plot North is aligned to GRID North.

Scale 1 cm = 400 ft

East (Feet) ->

-3200 -2400 -1600 -800 -0 800

1600

800

0

-800

-1600

-2400

-3200

-4000

-4800

-5600

-6400

-7200

-8000

-8800

-9600

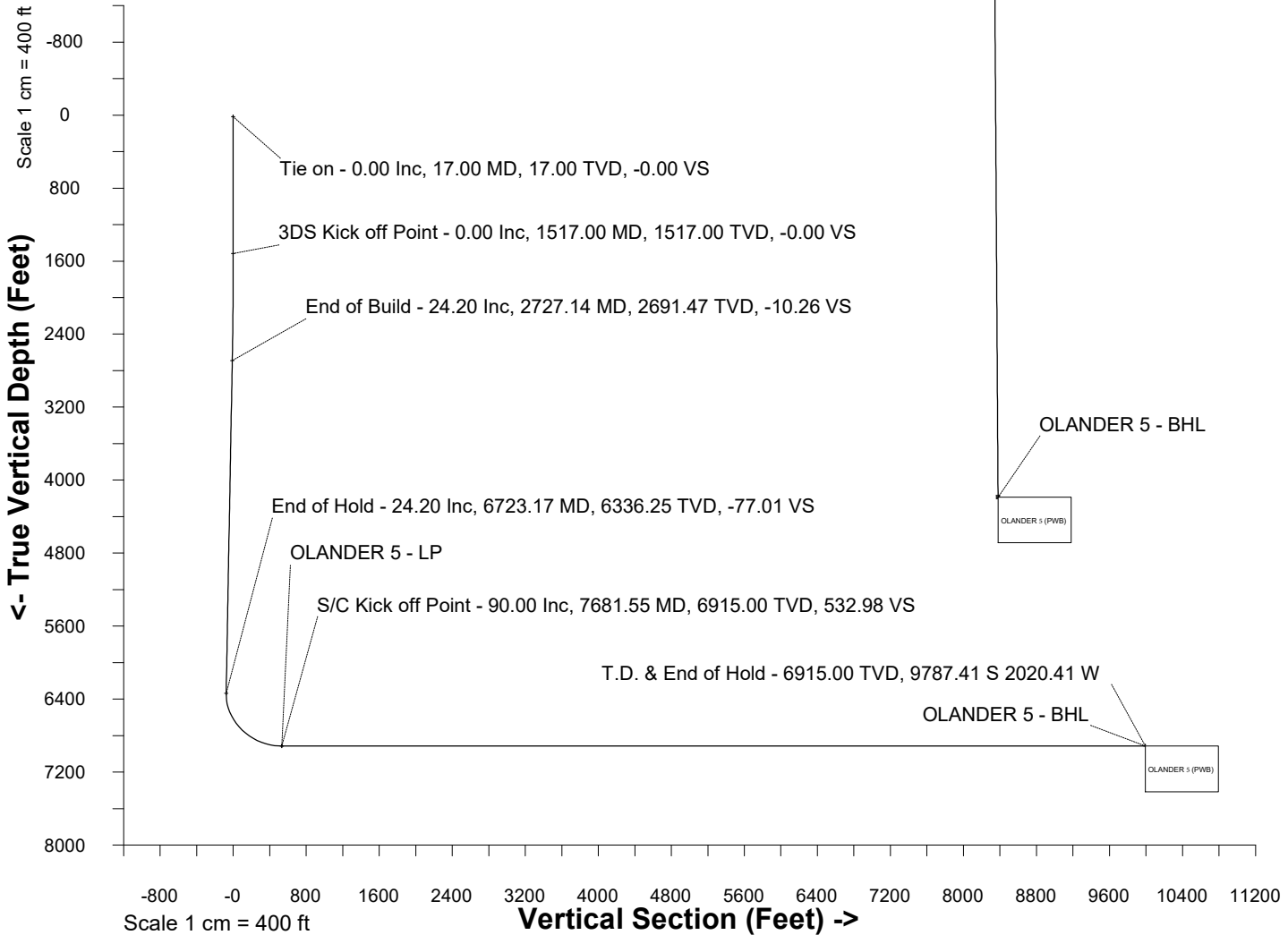
-10400

<- North(Feet)

Scale 1 cm = 400 ft

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	284.00	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2727.14	24.20	284.00	2691.47	N 60.91	W 244.33	2.00	-10.26
End of Hold	6723.17	24.20	284.00	6336.25	N 457.21	W 1833.92	0.00	-77.01
Target OLANDER 5 - LP	7681.55	90.00	179.63	6915.00	S 114.37	W 2082.27	10.00	532.98
T.D. & Target OLA...BHL	17354.78	90.00	179.63	6915.00	S 9787.41	W 2020.41	0.00	9993.77



SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 5 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
OLANDER 5	40.20288000	-105.02540000	1317106.3483	3132564.7129	0.07N	13.97E	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	-5033.00	0.00N	0.00E		0.00
1517.00	0.00	284.00	1517.00	-3533.00	0.00N	0.00E	==>	0.00
2727.14	24.20	284.00	2691.47	-2358.53	60.91N	244.33W	2.00	-10.26
6723.17	24.20	284.00	6336.25	1286.25	457.21N	1833.92W	==>	-77.01
7681.55	90.00	179.63	6915.00	1865.00	114.37S	2082.27W	10.00	532.98
17354.78	90.00	179.63	6915.00	1865.00	9787.41S	2020.41W	==>	9993.77

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	-105.02540000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1517.00	0.00	284.00	1517.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02540000
1600.00	1.66	284.00	1599.99	0.29N	1.17W	2.00	-0.05	40.20288082	-105.02540417
1700.00	3.66	284.00	1699.88	1.41N	5.67W	2.00	-0.24	40.20288396	-105.02542027
1800.00	5.66	284.00	1799.54	3.38N	13.55W	2.00	-0.57	40.20288947	-105.02544845
1900.00	7.66	284.00	1898.86	6.18N	24.80W	2.00	-1.04	40.20289734	-105.02548868
2000.00	9.66	284.00	1997.71	9.83N	39.41W	2.00	-1.66	40.20290755	-105.02554091
2100.00	11.66	284.00	2095.98	14.30N	57.36W	2.00	-2.41	40.20292010	-105.02560508
2200.00	13.66	284.00	2193.55	19.60N	78.63W	2.00	-3.30	40.20293496	-105.02568110
2300.00	15.66	284.00	2290.29	25.72N	103.18W	2.00	-4.33	40.20295213	-105.02576889
2400.00	17.66	284.00	2386.09	32.66N	131.00W	2.00	-5.50	40.20297157	-105.02586833
2500.00	19.66	284.00	2480.82	40.40N	162.04W	2.00	-6.80	40.20299327	-105.02597932
2600.00	21.66	284.00	2574.39	48.93N	196.27W	2.00	-8.24	40.20301720	-105.02610171
2700.00	23.66	284.00	2666.66	58.25N	233.65W	2.00	-9.81	40.20304333	-105.02623535
2727.14	24.20	284.00	2691.47	60.91N	244.33W	2.00	-10.26	40.20305079	-105.02627353
2800.00	24.20	284.00	2757.93	68.14N	273.32W	==>	-11.48	40.20307105	-105.02637715

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5050.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 191.66 degrees
Bottom hole distance is 9993.77 Feet on azimuth 191.66 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 5 (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	24.20	284.00	2849.14	78.06N	313.10W	==>	-13.15	40.20309886	-105.02651937
3000.00	24.20	284.00	2940.35	87.98N	352.88W	==>	-14.82	40.20312667	-105.02666159
3100.00	24.20	284.00	3031.56	97.89N	392.66W	==>	-16.49	40.20315447	-105.02680380
3200.00	24.20	284.00	3122.77	107.81N	432.44W	==>	-18.16	40.20318228	-105.02694602
3300.00	24.20	284.00	3213.98	117.73N	472.21W	==>	-19.83	40.20321008	-105.02708824
3400.00	24.20	284.00	3305.19	127.64N	511.99W	==>	-21.50	40.20323789	-105.02723045
3500.00	24.20	284.00	3396.40	137.56N	551.77W	==>	-23.17	40.20326569	-105.02737267
3600.00	24.20	284.00	3487.61	147.48N	591.55W	==>	-24.84	40.20329349	-105.02751489
3700.00	24.20	284.00	3578.82	157.40N	631.33W	==>	-26.51	40.20332130	-105.02765711
3800.00	24.20	284.00	3670.03	167.31N	671.11W	==>	-28.18	40.20334910	-105.02779932
3900.00	24.20	284.00	3761.24	177.23N	710.89W	==>	-29.85	40.20337691	-105.02794154
4000.00	24.20	284.00	3852.45	187.15N	750.67W	==>	-31.52	40.20340471	-105.02808376
4100.00	24.20	284.00	3943.66	197.07N	790.45W	==>	-33.19	40.20343251	-105.02822598
4200.00	24.20	284.00	4034.87	206.98N	830.23W	==>	-34.86	40.20346032	-105.02836819
4300.00	24.20	284.00	4126.08	216.90N	870.01W	==>	-36.53	40.20348812	-105.02851041
4400.00	24.20	284.00	4217.29	226.82N	909.78W	==>	-38.21	40.20351592	-105.02865263
4500.00	24.20	284.00	4308.50	236.73N	949.56W	==>	-39.88	40.20354373	-105.02879485
4600.00	24.20	284.00	4399.71	246.65N	989.34W	==>	-41.55	40.20357153	-105.02893707
4700.00	24.20	284.00	4490.92	256.57N	1029.12W	==>	-43.22	40.20359933	-105.02907929
4800.00	24.20	284.00	4582.13	266.49N	1068.90W	==>	-44.89	40.20362713	-105.02922150
4900.00	24.20	284.00	4673.34	276.40N	1108.68W	==>	-46.56	40.20365494	-105.02936372
5000.00	24.20	284.00	4764.55	286.32N	1148.46W	==>	-48.23	40.20368274	-105.02950594
5100.00	24.20	284.00	4855.76	296.24N	1188.24W	==>	-49.90	40.20371054	-105.02964816
5200.00	24.20	284.00	4946.97	306.16N	1228.02W	==>	-51.57	40.20373834	-105.02979038
5300.00	24.20	284.00	5038.18	316.07N	1267.80W	==>	-53.24	40.20376614	-105.02993260
5400.00	24.20	284.00	5129.39	325.99N	1307.58W	==>	-54.91	40.20379394	-105.03007482
5500.00	24.20	284.00	5220.60	335.91N	1347.35W	==>	-56.58	40.20382174	-105.03021704
5600.00	24.20	284.00	5311.81	345.82N	1387.13W	==>	-58.25	40.20384955	-105.03035926
5700.00	24.20	284.00	5403.02	355.74N	1426.91W	==>	-59.92	40.20387735	-105.03050148
5800.00	24.20	284.00	5494.23	365.66N	1466.69W	==>	-61.59	40.20390515	-105.03064370
5900.00	24.20	284.00	5585.44	375.58N	1506.47W	==>	-63.26	40.20393295	-105.03078592
6000.00	24.20	284.00	5676.65	385.49N	1546.25W	==>	-64.93	40.20396075	-105.03092814
6100.00	24.20	284.00	5767.86	395.41N	1586.03W	==>	-66.60	40.20398855	-105.03107036
6200.00	24.20	284.00	5859.07	405.33N	1625.81W	==>	-68.27	40.20401635	-105.03121258
6300.00	24.20	284.00	5950.28	415.25N	1665.59W	==>	-69.94	40.20404415	-105.03135480
6400.00	24.20	284.00	6041.49	425.16N	1705.37W	==>	-71.61	40.20407195	-105.03149702
6500.00	24.20	284.00	6132.70	435.08N	1745.15W	==>	-73.28	40.20409974	-105.03163924
6600.00	24.20	284.00	6223.91	445.00N	1784.92W	==>	-74.96	40.20412754	-105.03178146
6700.00	24.20	284.00	6315.12	454.91N	1824.70W	==>	-76.63	40.20415534	-105.03192368
6723.17	24.20	284.00	6336.25	457.21N	1833.92W	==>	-77.01	40.20416178	-105.03195663
6800.00	23.60	265.02	6406.60	459.69N	1864.57W	10.00	-73.24	40.20416903	-105.03206630
6900.00	26.19	241.92	6497.51	447.53N	1904.08W	10.00	-53.35	40.20413623	-105.03220798
7000.00	31.68	224.51	6585.15	418.35N	1942.05W	10.00	-17.09	40.20405667	-105.03234447
7100.00	38.85	212.36	6666.85	373.02N	1977.34W	10.00	34.44	40.20393276	-105.03247165
7200.00	46.92	203.66	6740.13	312.93N	2008.86W	10.00	99.66	40.20376826	-105.03258564
7300.00	55.50	197.05	6802.76	239.90N	2035.66W	10.00	176.60	40.20356818	-105.03268297
7400.00	64.37	191.69	6852.84	156.14N	2056.94W	10.00	262.92	40.20333859	-105.03276070
7500.00	73.40	187.09	6888.85	64.22N	2072.03W	10.00	356.00	40.20308648	-105.03281646
7600.00	82.53	182.91	6909.69	33.09S	2080.48W	10.00	453.01	40.20281949	-105.03284855
7681.55	90.00	179.63	6915.00	114.37S	2082.27W	10.00	532.98	40.20259640	-105.03285650
7700.00	90.00	179.63	6915.00	132.83S	2082.15W	==>	551.03	40.20254574	-105.03285643
7800.00	90.00	179.63	6915.00	232.83S	2081.51W	==>	648.83	40.20227124	-105.03285602
7900.00	90.00	179.63	6915.00	332.82S	2080.87W	==>	746.64	40.20199674	-105.03285562
8000.00	90.00	179.63	6915.00	432.82S	2080.23W	==>	844.44	40.20172224	-105.03285522
8100.00	90.00	179.63	6915.00	532.82S	2079.59W	==>	942.24	40.20144775	-105.03285481
8200.00	90.00	179.63	6915.00	632.82S	2078.96W	==>	1040.05	40.20117325	-105.03285441
8300.00	90.00	179.63	6915.00	732.82S	2078.32W	==>	1137.85	40.20089875	-105.03285401
8400.00	90.00	179.63	6915.00	832.81S	2077.68W	==>	1235.66	40.20062425	-105.03285360

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Vertical Section is from 0.00N 0.00E on azimuth 191.66 degrees
Bottom hole distance is 9993.77 Feet on azimuth 191.66 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

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Well Design Combined Report
Wellbore: OLANDER 5 (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	179.63	6915.00	932.81S	2077.04W	==>	1333.46	40.20034975	-105.03285320
8600.00	90.00	179.63	6915.00	1032.81S	2076.40W	==>	1431.26	40.20007525	-105.03285280
8700.00	90.00	179.63	6915.00	1132.81S	2075.76W	==>	1529.07	40.19980075	-105.03285239
8800.00	90.00	179.63	6915.00	1232.81S	2075.12W	==>	1626.87	40.19952625	-105.03285199
8900.00	90.00	179.63	6915.00	1332.80S	2074.48W	==>	1724.67	40.19925175	-105.03285159
9000.00	90.00	179.63	6915.00	1432.80S	2073.84W	==>	1822.48	40.19897725	-105.03285118
9100.00	90.00	179.63	6915.00	1532.80S	2073.20W	==>	1920.28	40.19870275	-105.03285078
9200.00	90.00	179.63	6915.00	1632.80S	2072.56W	==>	2018.09	40.19842825	-105.03285038
9300.00	90.00	179.63	6915.00	1732.80S	2071.92W	==>	2115.89	40.19815375	-105.03284997
9400.00	90.00	179.63	6915.00	1832.79S	2071.28W	==>	2213.69	40.19787926	-105.03284957
9500.00	90.00	179.63	6915.00	1932.79S	2070.64W	==>	2311.50	40.19760476	-105.03284917
9600.00	90.00	179.63	6915.00	2032.79S	2070.00W	==>	2409.30	40.19733026	-105.03284876
9700.00	90.00	179.63	6915.00	2132.79S	2069.36W	==>	2507.10	40.19705576	-105.03284836
9800.00	90.00	179.63	6915.00	2232.79S	2068.72W	==>	2604.91	40.19678126	-105.03284796
9900.00	90.00	179.63	6915.00	2332.78S	2068.08W	==>	2702.71	40.19650676	-105.03284755
10000.00	90.00	179.63	6915.00	2432.78S	2067.44W	==>	2800.52	40.19623226	-105.03284715
10100.00	90.00	179.63	6915.00	2532.78S	2066.81W	==>	2898.32	40.19595776	-105.03284675
10200.00	90.00	179.63	6915.00	2632.78S	2066.17W	==>	2996.12	40.19568326	-105.03284634
10300.00	90.00	179.63	6915.00	2732.78S	2065.53W	==>	3093.93	40.19540876	-105.03284594
10400.00	90.00	179.63	6915.00	2832.77S	2064.89W	==>	3191.73	40.19513426	-105.03284554
10500.00	90.00	179.63	6915.00	2932.77S	2064.25W	==>	3289.54	40.19485976	-105.03284513
10600.00	90.00	179.63	6915.00	3032.77S	2063.61W	==>	3387.34	40.19458526	-105.03284473
10700.00	90.00	179.63	6915.00	3132.77S	2062.97W	==>	3485.14	40.19431076	-105.03284433
10800.00	90.00	179.63	6915.00	3232.76S	2062.33W	==>	3582.95	40.19403626	-105.03284392
10900.00	90.00	179.63	6915.00	3332.76S	2061.69W	==>	3680.75	40.19376176	-105.03284352
11000.00	90.00	179.63	6915.00	3432.76S	2061.05W	==>	3778.55	40.19348726	-105.03284312
11100.00	90.00	179.63	6915.00	3532.76S	2060.41W	==>	3876.36	40.19321276	-105.03284271
11200.00	90.00	179.63	6915.00	3632.76S	2059.77W	==>	3974.16	40.19293827	-105.03284231
11300.00	90.00	179.63	6915.00	3732.75S	2059.13W	==>	4071.97	40.19266377	-105.03284191
11400.00	90.00	179.63	6915.00	3832.75S	2058.49W	==>	4169.77	40.19238927	-105.03284150
11500.00	90.00	179.63	6915.00	3932.75S	2057.85W	==>	4267.57	40.19211477	-105.03284110
11600.00	90.00	179.63	6915.00	4032.75S	2057.21W	==>	4365.38	40.19184027	-105.03284070
11700.00	90.00	179.63	6915.00	4132.75S	2056.57W	==>	4463.18	40.19156577	-105.03284029
11800.00	90.00	179.63	6915.00	4232.74S	2055.93W	==>	4560.99	40.19129127	-105.03283989
11900.00	90.00	179.63	6915.00	4332.74S	2055.29W	==>	4658.79	40.19101677	-105.03283949
12000.00	90.00	179.63	6915.00	4432.74S	2054.66W	==>	4756.59	40.19074227	-105.03283909
12100.00	90.00	179.63	6915.00	4532.74S	2054.02W	==>	4854.40	40.19046777	-105.03283868
12200.00	90.00	179.63	6915.00	4632.74S	2053.38W	==>	4952.20	40.19019327	-105.03283828
12300.00	90.00	179.63	6915.00	4732.73S	2052.74W	==>	5050.00	40.18991877	-105.03283788
12400.00	90.00	179.63	6915.00	4832.73S	2052.10W	==>	5147.81	40.18964427	-105.03283747
12500.00	90.00	179.63	6915.00	4932.73S	2051.46W	==>	5245.61	40.18936977	-105.03283707
12600.00	90.00	179.63	6915.00	5032.73S	2050.82W	==>	5343.42	40.18909527	-105.03283667
12700.00	90.00	179.63	6915.00	5132.73S	2050.18W	==>	5441.22	40.18882077	-105.03283626
12800.00	90.00	179.63	6915.00	5232.72S	2049.54W	==>	5539.02	40.18854627	-105.03283586
12900.00	90.00	179.63	6915.00	5332.72S	2048.90W	==>	5636.83	40.18827177	-105.03283546
13000.00	90.00	179.63	6915.00	5432.72S	2048.26W	==>	5734.63	40.18799727	-105.03283505
13100.00	90.00	179.63	6915.00	5532.72S	2047.62W	==>	5832.43	40.18772277	-105.03283465
13200.00	90.00	179.63	6915.00	5632.72S	2046.98W	==>	5930.24	40.18744827	-105.03283425
13300.00	90.00	179.63	6915.00	5732.71S	2046.34W	==>	6028.04	40.18717377	-105.03283384
13400.00	90.00	179.63	6915.00	5832.71S	2045.70W	==>	6125.85	40.18689927	-105.03283344
13500.00	90.00	179.63	6915.00	5932.71S	2045.06W	==>	6223.65	40.18662477	-105.03283304
13600.00	90.00	179.63	6915.00	6032.71S	2044.42W	==>	6321.45	40.18635027	-105.03283263
13700.00	90.00	179.63	6915.00	6132.71S	2043.78W	==>	6419.26	40.18607577	-105.03283223
13800.00	90.00	179.63	6915.00	6232.70S	2043.15W	==>	6517.06	40.18580127	-105.03283183
13900.00	90.00	179.63	6915.00	6332.70S	2042.51W	==>	6614.87	40.18552677	-105.03283143
14000.00	90.00	179.63	6915.00	6432.70S	2041.87W	==>	6712.67	40.18525227	-105.03283102
14100.00	90.00	179.63	6915.00	6532.70S	2041.23W	==>	6810.47	40.18497777	-105.03283062
14200.00	90.00	179.63	6915.00	6632.70S	2040.59W	==>	6908.28	40.18470327	-105.03283022
14300.00	90.00	179.63	6915.00	6732.69S	2039.95W	==>	7006.08	40.18442877	-105.03282981

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Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 5 (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	179.63	6915.00	6832.69S	2039.31W	==>	7103.88	40.18415427	-105.03282941
14500.00	90.00	179.63	6915.00	6932.69S	2038.67W	==>	7201.69	40.18387977	-105.03282901
14600.00	90.00	179.63	6915.00	7032.69S	2038.03W	==>	7299.49	40.18360527	-105.03282860
14700.00	90.00	179.63	6915.00	7132.69S	2037.39W	==>	7397.30	40.18333077	-105.03282820
14800.00	90.00	179.63	6915.00	7232.68S	2036.75W	==>	7495.10	40.18305627	-105.03282780
14900.00	90.00	179.63	6915.00	7332.68S	2036.11W	==>	7592.90	40.18278177	-105.03282739
15000.00	90.00	179.63	6915.00	7432.68S	2035.47W	==>	7690.71	40.18250727	-105.03282699
15100.00	90.00	179.63	6915.00	7532.68S	2034.83W	==>	7788.51	40.18223277	-105.03282659
15200.00	90.00	179.63	6915.00	7632.67S	2034.19W	==>	7886.31	40.18195827	-105.03282618
15300.00	90.00	179.63	6915.00	7732.67S	2033.55W	==>	7984.12	40.18168377	-105.03282578
15400.00	90.00	179.63	6915.00	7832.67S	2032.91W	==>	8081.92	40.18140927	-105.03282538
15500.00	90.00	179.63	6915.00	7932.67S	2032.27W	==>	8179.73	40.18113477	-105.03282498
15600.00	90.00	179.63	6915.00	8032.67S	2031.63W	==>	8277.53	40.18086027	-105.03282457
15700.00	90.00	179.63	6915.00	8132.66S	2031.00W	==>	8375.33	40.18058577	-105.03282417
15800.00	90.00	179.63	6915.00	8232.66S	2030.36W	==>	8473.14	40.18031127	-105.03282377
15900.00	90.00	179.63	6915.00	8332.66S	2029.72W	==>	8570.94	40.18003677	-105.03282336
16000.00	90.00	179.63	6915.00	8432.66S	2029.08W	==>	8668.75	40.17976227	-105.03282296
16100.00	90.00	179.63	6915.00	8532.66S	2028.44W	==>	8766.55	40.17948777	-105.03282256
16200.00	90.00	179.63	6915.00	8632.65S	2027.80W	==>	8864.35	40.17921327	-105.03282215
16300.00	90.00	179.63	6915.00	8732.65S	2027.16W	==>	8962.16	40.17893877	-105.03282175
16400.00	90.00	179.63	6915.00	8832.65S	2026.52W	==>	9059.96	40.17866427	-105.03282135
16500.00	90.00	179.63	6915.00	8932.65S	2025.88W	==>	9157.76	40.17838977	-105.03282095
16600.00	90.00	179.63	6915.00	9032.65S	2025.24W	==>	9255.57	40.17811527	-105.03282054
16700.00	90.00	179.63	6915.00	9132.64S	2024.60W	==>	9353.37	40.17784077	-105.03282014
16800.00	90.00	179.63	6915.00	9232.64S	2023.96W	==>	9451.18	40.17756627	-105.03281974
16900.00	90.00	179.63	6915.00	9332.64S	2023.32W	==>	9548.98	40.17729177	-105.03281933
17000.00	90.00	179.63	6915.00	9432.64S	2022.68W	==>	9646.78	40.17701727	-105.03281893
17100.00	90.00	179.63	6915.00	9532.64S	2022.04W	==>	9744.59	40.17674277	-105.03281853
17200.00	90.00	179.63	6915.00	9632.63S	2021.40W	==>	9842.39	40.17646827	-105.03281812
17300.00	90.00	179.63	6915.00	9732.63S	2020.76W	==>	9940.20	40.17619377	-105.03281772
17354.78	90.00	179.63	6915.00	9787.41S	2020.41W	==>	9993.77	40.17604340	-105.03281750

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Wellbore: OLANDER 5 (PWB)



Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
OLANDER 5 - LP	114.37S	2082.27W	6915.00	40.20259640	-105.03285650	1316991.98	3130482.54
OLANDER 5 - BHL	9787.41S	2020.41W	6915.00	40.17604340	-105.03281750	1307319.38	3130544.39

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
790908	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
790907	Planned	17354.78	6915.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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