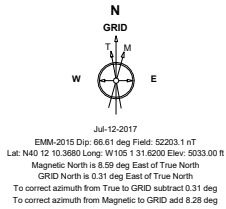


Cub Creek Energy, LLC

Location Weld County, CO
Field WATTENBERG
Installation Olander Pad Rework 04-09-2019
Slot OLANDER 20
Well OLANDER 20
Wellbore OLANDER 20 (PWB)

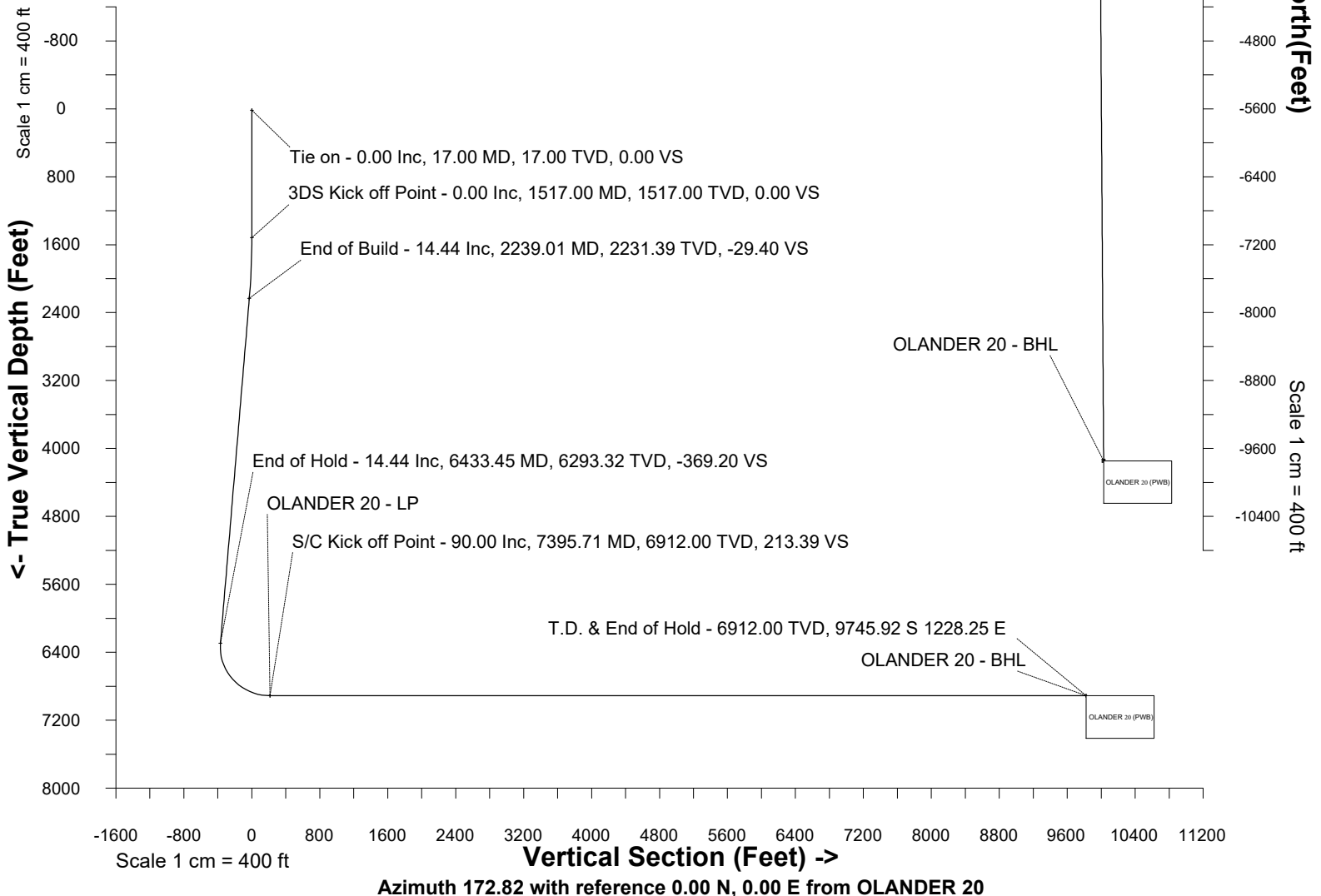


Created by sean.dolfinger
 Date plotted 11-Apr-2019
 Plot reference is OLANDER 20 (PWB).
 Ref wellpath is OLANDER 20 (PWP#1).
 Coordinates are in Feet reference OLANDER 20.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum. Rig
 Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5047.00 ft. Plot
 North is aligned to GRID North.

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

-800 0 800 1600 2400

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	63.86	1517.00	S 0.00	W 0.00	0.00	0.00
End of Build	2239.01	14.44	63.86	2231.39	N 39.87	E 81.25	2.00	-29.40
End of Hold	6433.45	14.44	63.86	6293.32	N 500.70	E 1020.22	0.00	-369.20
Target OLANDER 20 - LP	7395.71	90.00	179.64	6912.00	S 67.97	E 1167.27	10.00	213.39
T.D. & Target OLA...BHL	17073.86	90.00	179.64	6912.00	S 9745.92	E 1228.25	0.00	9823.02



SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 20 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
OLANDER 20	40.20288000	-105.02503000	1317106.9016	3132668.0599	0.63N	117.32E	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	-5030.00	0.00N	0.00E		0.00
1517.00	0.00	63.86	1517.00	-3530.00	0.00N	0.00E	==>	0.00
2239.01	14.44	63.86	2231.39	-2815.61	39.87N	81.25E	2.00	-29.40
6433.45	14.44	63.86	6293.32	1246.32	500.70N	1020.22E	==>	-369.20
7395.71	90.00	179.64	6912.00	1865.00	67.97S	1167.27E	10.00	213.39
17073.86	90.00	179.64	6912.00	1865.00	9745.92S	1228.25E	==>	9823.02

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	-105.02503000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1517.00	0.00	63.86	1517.00	0.00N	0.00E	==>	0.00	40.20288000	-105.02503000
1600.00	1.66	63.86	1599.99	0.53N	1.08E	2.00	-0.39	40.20288144	-105.02502613
1700.00	3.66	63.86	1699.88	2.57N	5.25E	2.00	-1.90	40.20288699	-105.02501117
1800.00	5.66	63.86	1799.54	6.15N	12.54E	2.00	-4.54	40.20289671	-105.02498500
1900.00	7.66	63.86	1898.86	11.26N	22.95E	2.00	-8.30	40.20291058	-105.02494763
2000.00	9.66	63.86	1997.71	17.90N	36.47E	2.00	-13.20	40.20292859	-105.02489911
2100.00	11.66	63.86	2095.98	26.05N	53.07E	2.00	-19.21	40.20295071	-105.02483951
2200.00	13.66	63.86	2193.55	35.70N	72.74E	2.00	-26.32	40.20297693	-105.02476890
2239.01	14.44	63.86	2231.39	39.87N	81.25E	2.00	-29.40	40.20298826	-105.02473838
2300.00	14.44	63.86	2290.45	46.57N	94.90E	==>	-34.34	40.20300645	-105.02468937
2400.00	14.44	63.86	2387.29	57.56N	117.29E	==>	-42.44	40.20303628	-105.02460902
2500.00	14.44	63.86	2484.14	68.55N	139.67E	==>	-50.54	40.20306610	-105.02452867
2600.00	14.44	63.86	2580.98	79.53N	162.06E	==>	-58.65	40.20309593	-105.02444832
2700.00	14.44	63.86	2677.82	90.52N	184.44E	==>	-66.75	40.20312576	-105.02436797
2800.00	14.44	63.86	2774.66	101.51N	206.83E	==>	-74.85	40.20315559	-105.02428761

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5047.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 172.82 degrees
Bottom hole distance is 9823.02 Feet on azimuth 172.82 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 20 (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	14.44	63.86	2871.50	112.49N	229.22E	==>	-82.95	40.20318542	-105.02420726
3000.00	14.44	63.86	2968.34	123.48N	251.60E	==>	-91.05	40.20321524	-105.02412691
3100.00	14.44	63.86	3065.18	134.47N	273.99E	==>	-99.15	40.20324507	-105.02404656
3200.00	14.44	63.86	3162.02	145.45N	296.38E	==>	-107.25	40.20327490	-105.02396620
3300.00	14.44	63.86	3258.86	156.44N	318.76E	==>	-115.35	40.20330473	-105.02388585
3400.00	14.44	63.86	3355.70	167.43N	341.15E	==>	-123.46	40.20333455	-105.02380550
3500.00	14.44	63.86	3452.54	178.41N	363.54E	==>	-131.56	40.20336438	-105.02372515
3600.00	14.44	63.86	3549.38	189.40N	385.92E	==>	-139.66	40.20339421	-105.02364479
3700.00	14.44	63.86	3646.23	200.39N	408.31E	==>	-147.76	40.20342404	-105.02356444
3800.00	14.44	63.86	3743.07	211.37N	430.69E	==>	-155.86	40.20345386	-105.02348409
3900.00	14.44	63.86	3839.91	222.36N	453.08E	==>	-163.96	40.20348369	-105.02340374
4000.00	14.44	63.86	3936.75	233.35N	475.47E	==>	-172.06	40.20351352	-105.02332338
4100.00	14.44	63.86	4033.59	244.33N	497.85E	==>	-180.16	40.20354335	-105.02324303
4200.00	14.44	63.86	4130.43	255.32N	520.24E	==>	-188.27	40.20357317	-105.02316268
4300.00	14.44	63.86	4227.27	266.31N	542.63E	==>	-196.37	40.20360300	-105.02308232
4400.00	14.44	63.86	4324.11	277.29N	565.01E	==>	-204.47	40.20363283	-105.02300197
4500.00	14.44	63.86	4420.95	288.28N	587.40E	==>	-212.57	40.20366265	-105.02292162
4600.00	14.44	63.86	4517.79	299.26N	609.78E	==>	-220.67	40.20369248	-105.02284126
4700.00	14.44	63.86	4614.63	310.25N	632.17E	==>	-228.77	40.20372231	-105.02276091
4800.00	14.44	63.86	4711.48	321.24N	654.56E	==>	-236.87	40.20375214	-105.02268056
4900.00	14.44	63.86	4808.32	332.22N	676.94E	==>	-244.97	40.20378196	-105.02260020
5000.00	14.44	63.86	4905.16	343.21N	699.33E	==>	-253.07	40.20381179	-105.02251985
5100.00	14.44	63.86	5002.00	354.20N	721.72E	==>	-261.18	40.20384162	-105.02243949
5200.00	14.44	63.86	5098.84	365.18N	744.10E	==>	-269.28	40.20387144	-105.02235914
5300.00	14.44	63.86	5195.68	376.17N	766.49E	==>	-277.38	40.20390127	-105.02227879
5400.00	14.44	63.86	5292.52	387.16N	788.87E	==>	-285.48	40.20393110	-105.02219843
5500.00	14.44	63.86	5389.36	398.14N	811.26E	==>	-293.58	40.20396092	-105.02211808
5600.00	14.44	63.86	5486.20	409.13N	833.65E	==>	-301.68	40.20399075	-105.02203772
5700.00	14.44	63.86	5583.04	420.12N	856.03E	==>	-309.78	40.20402057	-105.02195737
5800.00	14.44	63.86	5679.88	431.10N	878.42E	==>	-317.88	40.20405040	-105.02187702
5900.00	14.44	63.86	5776.72	442.09N	900.81E	==>	-325.99	40.20408023	-105.02179666
6000.00	14.44	63.86	5873.57	453.08N	923.19E	==>	-334.09	40.20411005	-105.02171631
6100.00	14.44	63.86	5970.41	464.06N	945.58E	==>	-342.19	40.20413988	-105.02163595
6200.00	14.44	63.86	6067.25	475.05N	967.96E	==>	-350.29	40.20416971	-105.02155560
6300.00	14.44	63.86	6164.09	486.04N	990.35E	==>	-358.39	40.20419953	-105.02147524
6400.00	14.44	63.86	6260.93	497.02N	1012.74E	==>	-366.49	40.20422936	-105.02139489
6433.45	14.44	63.86	6293.32	500.70N	1020.22E	==>	-369.20	40.20423933	-105.02136801
6500.00	13.06	91.54	6358.03	504.16N	1035.21E	10.00	-370.76	40.20424860	-105.02131430
6600.00	16.65	128.81	6454.89	494.85N	1057.73E	10.00	-358.71	40.20422272	-105.02123387
6700.00	24.09	148.40	6548.67	468.41N	1079.64E	10.00	-329.74	40.20414984	-105.02115593
6800.00	32.86	158.60	6636.54	425.66N	1100.28E	10.00	-284.74	40.20403217	-105.02108285
6900.00	42.14	164.79	6715.82	367.88N	1119.03E	10.00	-225.07	40.20387329	-105.02101686
7000.00	51.64	169.07	6784.09	296.83N	1135.31E	10.00	-152.54	40.20367802	-105.02095995
7100.00	61.27	172.34	6839.30	214.68N	1148.63E	10.00	-69.37	40.20345231	-105.02091386
7200.00	70.95	175.05	6879.76	123.91N	1158.58E	10.00	21.93	40.20320301	-105.02087998
7300.00	80.68	177.46	6904.23	27.28N	1164.87E	10.00	118.58	40.20293769	-105.02085936
7395.71	90.00	179.64	6912.00	67.97S	1167.27E	10.00	213.39	40.20267620	-105.02085260
7400.00	90.00	179.64	6912.00	72.26S	1167.30E	==>	217.65	40.20266442	-105.02085259
7500.00	90.00	179.64	6912.00	172.26S	1167.93E	==>	316.94	40.20238992	-105.02085226
7600.00	90.00	179.64	6912.00	272.25S	1168.56E	==>	416.23	40.20211542	-105.02085194
7700.00	90.00	179.64	6912.00	372.25S	1169.19E	==>	515.52	40.20184092	-105.02085162
7800.00	90.00	179.64	6912.00	472.25S	1169.82E	==>	614.82	40.20156642	-105.02085130
7900.00	90.00	179.64	6912.00	572.25S	1170.45E	==>	714.11	40.20129192	-105.02085098
8000.00	90.00	179.64	6912.00	672.25S	1171.08E	==>	813.40	40.20101742	-105.02085066
8100.00	90.00	179.64	6912.00	772.24S	1171.71E	==>	912.69	40.20074292	-105.02085034
8200.00	90.00	179.64	6912.00	872.24S	1172.34E	==>	1011.98	40.20046842	-105.02085001
8300.00	90.00	179.64	6912.00	972.24S	1172.97E	==>	1111.28	40.20019392	-105.02084969
8400.00	90.00	179.64	6912.00	1072.24S	1173.60E	==>	1210.57	40.19991942	-105.02084937

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Vertical Section is from 0.00N 0.00E on azimuth 172.82 degrees
Bottom hole distance is 9823.02 Feet on azimuth 172.82 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 20 (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	6912.00	1172.24S	1174.23E	==>	1309.86	40.19964492	-105.02084905
8600.00	90.00	179.64	6912.00	1272.23S	1174.86E	==>	1409.15	40.19937042	-105.02084873
8700.00	90.00	179.64	6912.00	1372.23S	1175.49E	==>	1508.44	40.19909593	-105.02084841
8800.00	90.00	179.64	6912.00	1472.23S	1176.12E	==>	1607.74	40.19882143	-105.02084809
8900.00	90.00	179.64	6912.00	1572.23S	1176.75E	==>	1707.03	40.19854693	-105.02084776
9000.00	90.00	179.64	6912.00	1672.23S	1177.38E	==>	1806.32	40.19827243	-105.02084744
9100.00	90.00	179.64	6912.00	1772.22S	1178.01E	==>	1905.61	40.19799793	-105.02084712
9200.00	90.00	179.64	6912.00	1872.22S	1178.64E	==>	2004.90	40.19772343	-105.02084680
9300.00	90.00	179.64	6912.00	1972.22S	1179.27E	==>	2104.20	40.19744893	-105.02084648
9400.00	90.00	179.64	6912.00	2072.22S	1179.90E	==>	2203.49	40.19717443	-105.02084616
9500.00	90.00	179.64	6912.00	2172.22S	1180.53E	==>	2302.78	40.19689993	-105.02084584
9600.00	90.00	179.64	6912.00	2272.21S	1181.16E	==>	2402.07	40.19662543	-105.02084551
9700.00	90.00	179.64	6912.00	2372.21S	1181.79E	==>	2501.36	40.19635093	-105.02084519
9800.00	90.00	179.64	6912.00	2472.21S	1182.42E	==>	2600.66	40.19607643	-105.02084487
9900.00	90.00	179.64	6912.00	2572.21S	1183.05E	==>	2699.95	40.19580193	-105.02084455
10000.00	90.00	179.64	6912.00	2672.21S	1183.68E	==>	2799.24	40.19552743	-105.02084423
10100.00	90.00	179.64	6912.00	2772.20S	1184.31E	==>	2898.53	40.19525293	-105.02084391
10200.00	90.00	179.64	6912.00	2872.20S	1184.94E	==>	2997.82	40.19497843	-105.02084359
10300.00	90.00	179.64	6912.00	2972.20S	1185.57E	==>	3097.12	40.19470393	-105.02084326
10400.00	90.00	179.64	6912.00	3072.20S	1186.20E	==>	3196.41	40.19442943	-105.02084294
10500.00	90.00	179.64	6912.00	3172.20S	1186.83E	==>	3295.70	40.19415493	-105.02084262
10600.00	90.00	179.64	6912.00	3272.19S	1187.46E	==>	3394.99	40.19388044	-105.02084230
10700.00	90.00	179.64	6912.00	3372.19S	1188.09E	==>	3494.28	40.19360594	-105.02084198
10800.00	90.00	179.64	6912.00	3472.19S	1188.72E	==>	3593.58	40.19333144	-105.02084166
10900.00	90.00	179.64	6912.00	3572.19S	1189.35E	==>	3692.87	40.19305694	-105.02084134
11000.00	90.00	179.64	6912.00	3672.19S	1189.98E	==>	3792.16	40.19278244	-105.02084102
11100.00	90.00	179.64	6912.00	3772.18S	1190.61E	==>	3891.45	40.19250794	-105.02084069
11200.00	90.00	179.64	6912.00	3872.18S	1191.24E	==>	3990.74	40.19223344	-105.02084037
11300.00	90.00	179.64	6912.00	3972.18S	1191.87E	==>	4090.04	40.19195894	-105.02084005
11400.00	90.00	179.64	6912.00	4072.18S	1192.50E	==>	4189.33	40.19168444	-105.02083973
11500.00	90.00	179.64	6912.00	4172.18S	1193.13E	==>	4288.62	40.19140994	-105.02083941
11600.00	90.00	179.64	6912.00	4272.18S	1193.76E	==>	4387.91	40.19113544	-105.02083909
11700.00	90.00	179.64	6912.00	4372.17S	1194.39E	==>	4487.20	40.19086094	-105.02083877
11800.00	90.00	179.64	6912.00	4472.17S	1195.02E	==>	4586.50	40.19058644	-105.02083844
11900.00	90.00	179.64	6912.00	4572.17S	1195.65E	==>	4685.79	40.19031194	-105.02083812
12000.00	90.00	179.64	6912.00	4672.17S	1196.28E	==>	4785.08	40.19003744	-105.02083780
12100.00	90.00	179.64	6912.00	4772.17S	1196.91E	==>	4884.37	40.18976294	-105.02083748
12200.00	90.00	179.64	6912.00	4872.16S	1197.54E	==>	4983.66	40.18948844	-105.02083716
12300.00	90.00	179.64	6912.00	4972.16S	1198.17E	==>	5082.96	40.18921394	-105.02083684
12400.00	90.00	179.64	6912.00	5072.16S	1198.80E	==>	5182.25	40.18893944	-105.02083652
12500.00	90.00	179.64	6912.00	5172.16S	1199.43E	==>	5281.54	40.18866494	-105.02083619
12600.00	90.00	179.64	6912.00	5272.16S	1200.06E	==>	5380.83	40.18839044	-105.02083587
12700.00	90.00	179.64	6912.00	5372.15S	1200.69E	==>	5480.12	40.18811594	-105.02083555
12800.00	90.00	179.64	6912.00	5472.15S	1201.32E	==>	5579.42	40.18784144	-105.02083523
12900.00	90.00	179.64	6912.00	5572.15S	1201.95E	==>	5678.71	40.18756694	-105.02083491
13000.00	90.00	179.64	6912.00	5672.15S	1202.58E	==>	5778.00	40.18729244	-105.02083459
13100.00	90.00	179.64	6912.00	5772.15S	1203.21E	==>	5877.29	40.18701794	-105.02083427
13200.00	90.00	179.64	6912.00	5872.14S	1203.84E	==>	5976.58	40.18674344	-105.02083395
13300.00	90.00	179.64	6912.00	5972.14S	1204.47E	==>	6075.88	40.18646894	-105.02083362
13400.00	90.00	179.64	6912.00	6072.14S	1205.10E	==>	6175.17	40.18619444	-105.02083330
13500.00	90.00	179.64	6912.00	6172.14S	1205.73E	==>	6274.46	40.18591994	-105.02083298
13600.00	90.00	179.64	6912.00	6272.14S	1206.36E	==>	6373.75	40.18564544	-105.02083266
13700.00	90.00	179.64	6912.00	6372.13S	1206.99E	==>	6473.04	40.18537094	-105.02083234
13800.00	90.00	179.64	6912.00	6472.13S	1207.62E	==>	6572.34	40.18509644	-105.02083202
13900.00	90.00	179.64	6912.00	6572.13S	1208.25E	==>	6671.63	40.18482194	-105.02083170
14000.00	90.00	179.64	6912.00	6672.13S	1208.88E	==>	6770.92	40.18454744	-105.02083137
14100.00	90.00	179.64	6912.00	6772.13S	1209.51E	==>	6870.21	40.18427294	-105.02083105
14200.00	90.00	179.64	6912.00	6872.12S	1210.14E	==>	6969.50	40.18399844	-105.02083073
14300.00	90.00	179.64	6912.00	6972.12S	1210.77E	==>	7068.80	40.18372394	-105.02083041

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Prepared by
Date Printed: 11-Apr-2019

SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 20 (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	6912.00	7072.12S	1211.41E	==>	7168.09	40.18344944	-105.02083009
14500.00	90.00	179.64	6912.00	7172.12S	1212.04E	==>	7267.38	40.18317494	-105.02082977
14600.00	90.00	179.64	6912.00	7272.12S	1212.67E	==>	7366.67	40.18290044	-105.02082945
14700.00	90.00	179.64	6912.00	7372.11S	1213.30E	==>	7465.96	40.18262594	-105.02082913
14800.00	90.00	179.64	6912.00	7472.11S	1213.93E	==>	7565.26	40.18235144	-105.02082880
14900.00	90.00	179.64	6912.00	7572.11S	1214.56E	==>	7664.55	40.18207694	-105.02082848
15000.00	90.00	179.64	6912.00	7672.11S	1215.19E	==>	7763.84	40.18180244	-105.02082816
15100.00	90.00	179.64	6912.00	7772.11S	1215.82E	==>	7863.13	40.18152794	-105.02082784
15200.00	90.00	179.64	6912.00	7872.10S	1216.45E	==>	7962.42	40.18125344	-105.02082752
15300.00	90.00	179.64	6912.00	7972.10S	1217.08E	==>	8061.72	40.18097894	-105.02082720
15400.00	90.00	179.64	6912.00	8072.10S	1217.71E	==>	8161.01	40.18070444	-105.02082688
15500.00	90.00	179.64	6912.00	8172.10S	1218.34E	==>	8260.30	40.18042994	-105.02082656
15600.00	90.00	179.64	6912.00	8272.10S	1218.97E	==>	8359.59	40.18015544	-105.02082623
15700.00	90.00	179.64	6912.00	8372.09S	1219.60E	==>	8458.89	40.17988094	-105.02082591
15800.00	90.00	179.64	6912.00	8472.09S	1220.23E	==>	8558.18	40.17960644	-105.02082559
15900.00	90.00	179.64	6912.00	8572.09S	1220.86E	==>	8657.47	40.17933194	-105.02082527
16000.00	90.00	179.64	6912.00	8672.09S	1221.49E	==>	8756.76	40.17905744	-105.02082495
16100.00	90.00	179.64	6912.00	8772.09S	1222.12E	==>	8856.05	40.17878294	-105.02082463
16200.00	90.00	179.64	6912.00	8872.08S	1222.75E	==>	8955.35	40.17850844	-105.02082431
16300.00	90.00	179.64	6912.00	8972.08S	1223.38E	==>	9054.64	40.17823394	-105.02082399
16400.00	90.00	179.64	6912.00	9072.08S	1224.01E	==>	9153.93	40.17795944	-105.02082366
16500.00	90.00	179.64	6912.00	9172.08S	1224.64E	==>	9253.22	40.17768494	-105.02082334
16600.00	90.00	179.64	6912.00	9272.08S	1225.27E	==>	9352.51	40.17741044	-105.02082302
16700.00	90.00	179.64	6912.00	9372.07S	1225.90E	==>	9451.81	40.17713594	-105.02082270
16800.00	90.00	179.64	6912.00	9472.07S	1226.53E	==>	9551.10	40.17686144	-105.02082238
16900.00	90.00	179.64	6912.00	9572.07S	1227.16E	==>	9650.39	40.17658694	-105.02082206
17000.00	90.00	179.64	6912.00	9672.07S	1227.79E	==>	9749.68	40.17631244	-105.02082174
17073.86	90.00	179.64	6912.00	9745.92S	1228.25E	==>	9823.02	40.17610970	-105.02082150

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SYSDRILL
Well Design Combined Report
Wellbore: OLANDER 20 (PWB)



Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
OLANDER 20 - LP	67.97S	1167.27E	6912.00	40.20267620	-105.02085260	1317038.94	3133835.28
OLANDER 20 - BHL	9745.92S	1228.25E	6912.00	40.17610970	-105.02082150	1307361.41	3133896.26

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
791089	Planned	1500.00	1500.00	WdW Rate Gyro	Standard
791088	Planned	17073.86	6912.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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