

Petro Operating Company

Location Weld County, CO
Field Wattenberg
Installation Homestead

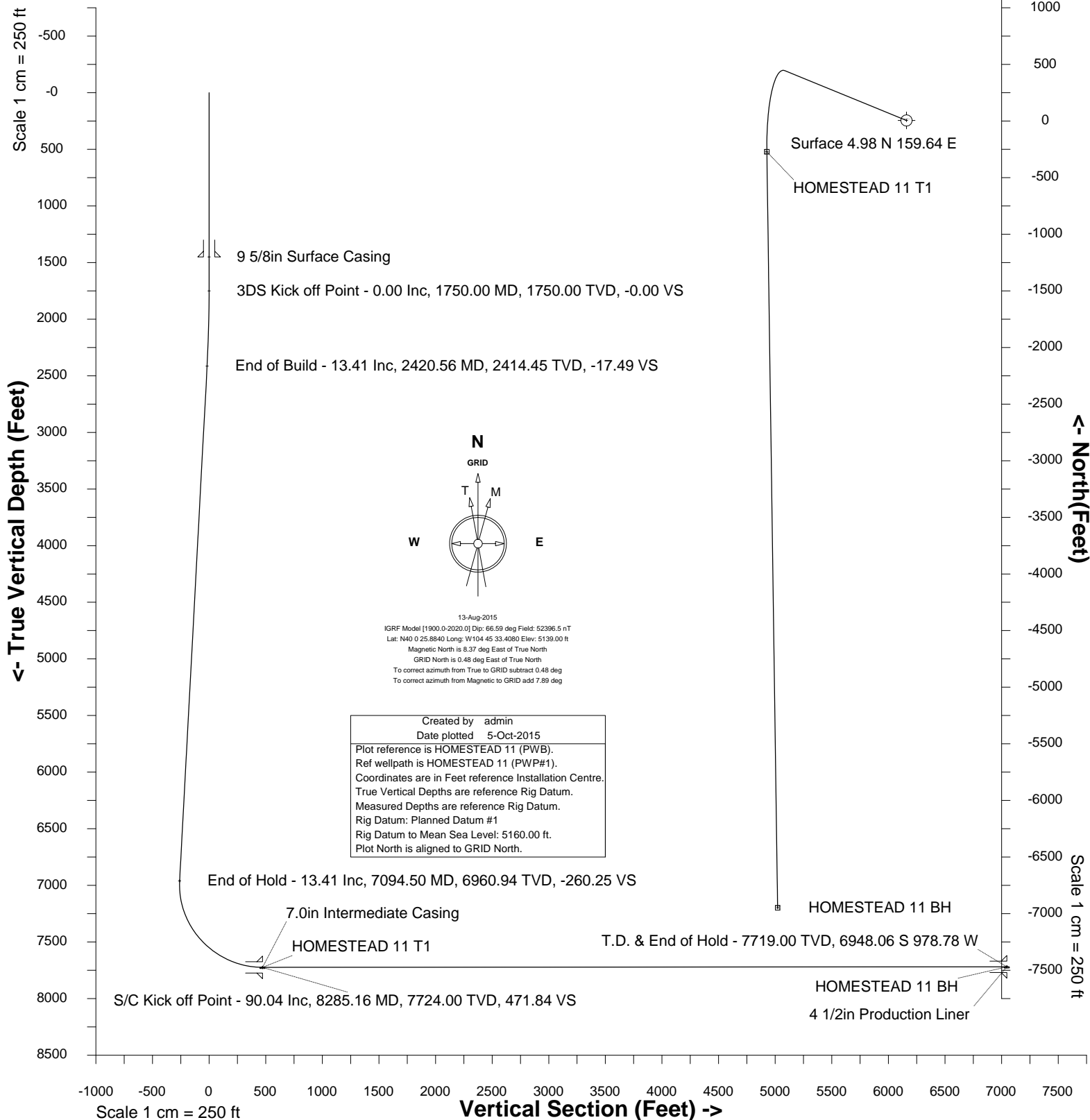
Slot HOMESTEAD 11
Well HOMESTEAD 11
Wellbore HOMESTEAD 11 (PWB)



Scale 1 cm = 250 ft

East (Feet) ->

-1500 -1000 -500 0 500 1000



Azimuth 189.30 with reference 4.98 N, 159.64 E from Installation Centre



SYSDRILL
Well Design Combined Report
Wellbore: HOMESTEAD 11 (PWB)

Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
HOMESTEAD 11	40.00720000	-104.75871000	1246337.5504	3207650.7114	4.98N	159.64E	0.00

Declination		
Date	Source	Time
13-Aug-2015	IGRF Model [1900.0-2020.0]	08:38

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Homestead	40.00719000	-104.75928000	1246332.5735	3207491.0767	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
23.00	0.00	0.000	23.00	0.00N	0.00E		0.00	1246337.55	3207650.71
1750.00	0.00	292.240	1750.00	0.00N	0.00E	==>	0.00	1246337.55	3207650.71
2420.56	13.41	292.240	2414.45	29.57N	72.31W	2.00	-17.49	1246367.12	3207578.40
7094.50	13.41	292.240	6960.94	439.85N	1075.73W	==>	-260.25	1246777.38	3206575.02
8285.16	90.04	179.190	7724.00	276.22S	1233.14W	8.00	471.84	1246061.34	3206417.62
14962.65	90.04	179.190	7719.00	6953.04S	1138.42W	==>	7045.62	1239384.76	3206512.33

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Rig Datum Slot Datum
23.00	0.00	0.000	23.00	0.00N	0.00E	==>	0.00	
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	9 5/8in Surface Casing
1450.00	0.00	0.000	1450.00	0.00N	0.00E	==>	0.00	
1500.00	0.00	0.000	1500.00	0.00N	0.00E	==>	0.00	
1600.00	0.00	0.000	1600.00	0.00N	0.00E	==>	0.00	
1700.00	0.00	0.000	1700.00	0.00N	0.00E	==>	0.00	
1750.00	0.00	292.240	1750.00	0.00N	0.00E	==>	0.00	3DS Kick off Point
1800.00	1.00	292.240	1800.00	0.17N	0.40W	2.00	-0.10	
1900.00	3.00	292.240	1899.93	1.49N	3.63W	2.00	-0.88	
2000.00	5.00	292.240	1999.68	4.13N	10.09W	2.00	-2.44	
2100.00	7.00	292.240	2099.13	8.08N	19.77W	2.00	-4.78	
2200.00	9.00	292.240	2198.15	13.35N	32.65W	2.00	-7.90	End of Build
2300.00	11.00	292.240	2296.63	19.92N	48.72W	2.00	-11.79	
2400.00	13.00	292.240	2394.44	27.79N	67.96W	2.00	-16.44	
2420.56	13.41	292.240	2414.45	29.57N	72.31W	2.00	-17.49	
2500.00	13.41	292.240	2491.73	36.54N	89.36W	==>	-21.62	
2600.00	13.41	292.240	2589.00	45.32N	110.83W	==>	-26.81	
2700.00	13.41	292.240	2686.27	54.10N	132.30W	==>	-32.01	
2800.00	13.41	292.240	2783.55	62.87N	153.77W	==>	-37.20	
2900.00	13.41	292.240	2880.82	71.65N	175.24W	==>	-42.40	
3000.00	13.41	292.240	2978.09	80.43N	196.71W	==>	-47.59	

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 5160.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 189.300 degrees
Bottom hole distance is 7045.62 Feet on azimuth 189.30 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 5-Oct-2015



SYSDRILL
Well Design Combined Report
Wellbore: HOMESTEAD 11 (PWB)

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3100.00	13.41	292.240	3075.37	89.21N	218.18W	==>	-52.78	
3200.00	13.41	292.240	3172.64	97.99N	239.64W	==>	-57.98	
3300.00	13.41	292.240	3269.91	106.76N	261.11W	==>	-63.17	
3400.00	13.41	292.240	3367.18	115.54N	282.58W	==>	-68.37	
3500.00	13.41	292.240	3464.46	124.32N	304.05W	==>	-73.56	
3600.00	13.41	292.240	3561.73	133.10N	325.52W	==>	-78.75	
3700.00	13.41	292.240	3659.00	141.88N	346.99W	==>	-83.95	
3800.00	13.41	292.240	3756.28	150.65N	368.46W	==>	-89.14	
3900.00	13.41	292.240	3853.55	159.43N	389.92W	==>	-94.33	
4000.00	13.41	292.240	3950.82	168.21N	411.39W	==>	-99.53	
4100.00	13.41	292.240	4048.10	176.99N	432.86W	==>	-104.72	
4200.00	13.41	292.240	4145.37	185.77N	454.33W	==>	-109.92	
4300.00	13.41	292.240	4242.64	194.55N	475.80W	==>	-115.11	
4400.00	13.41	292.240	4339.92	203.32N	497.27W	==>	-120.30	
4500.00	13.41	292.240	4437.19	212.10N	518.73W	==>	-125.50	
4600.00	13.41	292.240	4534.46	220.88N	540.20W	==>	-130.69	
4700.00	13.41	292.240	4631.73	229.66N	561.67W	==>	-135.89	
4800.00	13.41	292.240	4729.01	238.44N	583.14W	==>	-141.08	
4900.00	13.41	292.240	4826.28	247.21N	604.61W	==>	-146.27	
5000.00	13.41	292.240	4923.55	255.99N	626.08W	==>	-151.47	
5100.00	13.41	292.240	5020.83	264.77N	647.55W	==>	-156.66	
5200.00	13.41	292.240	5118.10	273.55N	669.01W	==>	-161.86	
5300.00	13.41	292.240	5215.37	282.33N	690.48W	==>	-167.05	
5400.00	13.41	292.240	5312.65	291.10N	711.95W	==>	-172.24	
5500.00	13.41	292.240	5409.92	299.88N	733.42W	==>	-177.44	
5600.00	13.41	292.240	5507.19	308.66N	754.89W	==>	-182.63	
5700.00	13.41	292.240	5604.47	317.44N	776.36W	==>	-187.82	
5800.00	13.41	292.240	5701.74	326.22N	797.82W	==>	-193.02	
5900.00	13.41	292.240	5799.01	334.99N	819.29W	==>	-198.21	
6000.00	13.41	292.240	5896.28	343.77N	840.76W	==>	-203.41	
6100.00	13.41	292.240	5993.56	352.55N	862.23W	==>	-208.60	
6200.00	13.41	292.240	6090.83	361.33N	883.70W	==>	-213.79	
6300.00	13.41	292.240	6188.10	370.11N	905.17W	==>	-218.99	
6400.00	13.41	292.240	6285.38	378.89N	926.64W	==>	-224.18	
6500.00	13.41	292.240	6382.65	387.66N	948.10W	==>	-229.38	
6600.00	13.41	292.240	6479.92	396.44N	969.57W	==>	-234.57	
6700.00	13.41	292.240	6577.20	405.22N	991.04W	==>	-239.76	
6800.00	13.41	292.240	6674.47	414.00N	1012.51W	==>	-244.96	
6900.00	13.41	292.240	6771.74	422.78N	1033.98W	==>	-250.15	
7000.00	13.41	292.240	6869.02	431.55N	1055.45W	==>	-255.35	
7094.50	13.41	292.240	6960.94	439.85N	1075.73W	==>	-260.25	End of Hold
7100.00	13.25	290.460	6966.29	440.31N	1076.92W	8.00	-260.52	
7200.00	12.78	254.440	7063.88	441.35N	1098.34W	8.00	-258.08	
7300.00	16.65	226.380	7160.70	428.48N	1119.41W	8.00	-241.97	
7400.00	22.74	210.760	7254.87	401.94N	1139.70W	8.00	-212.51	
7500.00	29.71	201.810	7344.55	362.25N	1158.83W	8.00	-170.25	7.0in Intermediate Casing S/C Kick off Point/Target, HOMESTEAD 11 T1
7600.00	37.07	196.080	7428.00	310.20N	1176.41W	8.00	-116.04	
7700.00	44.63	192.040	7503.60	246.77N	1192.11W	8.00	-50.91	
7800.00	52.29	188.960	7569.88	173.23N	1205.62W	8.00	23.85	
7900.00	60.02	186.470	7625.53	90.98N	1216.68W	8.00	106.80	
8000.00	67.79	184.340	7669.49	1.65N	1225.07W	8.00	196.32	
8100.00	75.58	182.430	7700.89	93.05S	1230.64W	8.00	290.67	
8200.00	83.39	180.650	7719.12	191.25S	1233.26W	8.00	388.01	
8285.00	90.03	179.190	7724.00	276.06S	1233.14W	8.00	471.68	
8285.16	90.04	179.190	7724.00	276.22S	1233.14W	8.00	471.84	
8300.00	90.04	179.190	7723.99	291.06S	1232.93W	==>	486.45	
8400.00	90.04	179.190	7723.91	391.05S	1231.51W	==>	584.90	
8500.00	90.04	179.190	7723.84	491.04S	1230.09W	==>	683.34	
8600.00	90.04	179.190	7723.76	591.03S	1228.67W	==>	781.79	
8700.00	90.04	179.190	7723.69	691.02S	1227.25W	==>	880.24	
8800.00	90.04	179.190	7723.61	791.01S	1225.84W	==>	978.68	

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Vertical Section is from 0.00N 0.00E on azimuth 189.300 degrees
Bottom hole distance is 7045.62 Feet on azimuth 189.30 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 5-Oct-2015



SYSDRILL
Well Design Combined Report
Wellbore: HOMESTEAD 11 (PWB)

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
8900.00	90.04	179.190	7723.54	891.00S	1224.42W	==>	1077.13	
9000.00	90.04	179.190	7723.46	990.99S	1223.00W	==>	1175.58	
9100.00	90.04	179.190	7723.39	1090.98S	1221.58W	==>	1274.03	
9200.00	90.04	179.190	7723.31	1190.97S	1220.16W	==>	1372.47	
9300.00	90.04	179.190	7723.24	1290.96S	1218.74W	==>	1470.92	
9400.00	90.04	179.190	7723.17	1390.95S	1217.33W	==>	1569.37	
9500.00	90.04	179.190	7723.09	1490.94S	1215.91W	==>	1667.81	
9600.00	90.04	179.190	7723.02	1590.93S	1214.49W	==>	1766.26	
9700.00	90.04	179.190	7722.94	1690.92S	1213.07W	==>	1864.71	
9800.00	90.04	179.190	7722.87	1790.91S	1211.65W	==>	1963.15	
9900.00	90.04	179.190	7722.79	1890.90S	1210.23W	==>	2061.60	
10000.00	90.04	179.190	7722.72	1990.89S	1208.81W	==>	2160.05	
10100.00	90.04	179.190	7722.64	2090.88S	1207.40W	==>	2258.49	
10200.00	90.04	179.190	7722.57	2190.87S	1205.98W	==>	2356.94	
10300.00	90.04	179.190	7722.49	2290.86S	1204.56W	==>	2455.39	
10400.00	90.04	179.190	7722.42	2390.85S	1203.14W	==>	2553.83	
10500.00	90.04	179.190	7722.34	2490.84S	1201.72W	==>	2652.28	
10600.00	90.04	179.190	7722.27	2590.83S	1200.30W	==>	2750.73	
10700.00	90.04	179.190	7722.19	2690.82S	1198.89W	==>	2849.17	
10800.00	90.04	179.190	7722.12	2790.81S	1197.47W	==>	2947.62	
10900.00	90.04	179.190	7722.04	2890.80S	1196.05W	==>	3046.07	
11000.00	90.04	179.190	7721.97	2990.79S	1194.63W	==>	3144.51	
11100.00	90.04	179.190	7721.89	3090.78S	1193.21W	==>	3242.96	
11200.00	90.04	179.190	7721.82	3190.77S	1191.79W	==>	3341.41	
11300.00	90.04	179.190	7721.74	3290.76S	1190.38W	==>	3439.86	
11400.00	90.04	179.190	7721.67	3390.75S	1188.96W	==>	3538.30	
11500.00	90.04	179.190	7721.59	3490.74S	1187.54W	==>	3636.75	
11600.00	90.04	179.190	7721.52	3590.73S	1186.12W	==>	3735.20	
11700.00	90.04	179.190	7721.44	3690.72S	1184.70W	==>	3833.64	
11800.00	90.04	179.190	7721.37	3790.71S	1183.28W	==>	3932.09	
11900.00	90.04	179.190	7721.29	3890.70S	1181.86W	==>	4030.54	
12000.00	90.04	179.190	7721.22	3990.69S	1180.45W	==>	4128.98	
12100.00	90.04	179.190	7721.14	4090.68S	1179.03W	==>	4227.43	
12200.00	90.04	179.190	7721.07	4190.67S	1177.61W	==>	4325.88	
12300.00	90.04	179.190	7720.99	4290.66S	1176.19W	==>	4424.32	
12400.00	90.04	179.190	7720.92	4390.65S	1174.77W	==>	4522.77	
12500.00	90.04	179.190	7720.84	4490.64S	1173.35W	==>	4621.22	
12600.00	90.04	179.190	7720.77	4590.63S	1171.94W	==>	4719.66	
12700.00	90.04	179.190	7720.69	4690.62S	1170.52W	==>	4818.11	
12800.00	90.04	179.190	7720.62	4790.61S	1169.10W	==>	4916.56	
12900.00	90.04	179.190	7720.54	4890.60S	1167.68W	==>	5015.00	
13000.00	90.04	179.190	7720.47	4990.59S	1166.26W	==>	5113.45	
13100.00	90.04	179.190	7720.39	5090.58S	1164.84W	==>	5211.90	
13200.00	90.04	179.190	7720.32	5190.57S	1163.42W	==>	5310.35	
13300.00	90.04	179.190	7720.24	5290.56S	1162.01W	==>	5408.79	
13400.00	90.04	179.190	7720.17	5390.55S	1160.59W	==>	5507.24	
13500.00	90.04	179.190	7720.10	5490.54S	1159.17W	==>	5605.69	
13600.00	90.04	179.190	7720.02	5590.53S	1157.75W	==>	5704.13	
13700.00	90.04	179.190	7719.95	5690.52S	1156.33W	==>	5802.58	
13800.00	90.04	179.190	7719.87	5790.51S	1154.91W	==>	5901.03	
13900.00	90.04	179.190	7719.80	5890.49S	1153.50W	==>	5999.47	
14000.00	90.04	179.190	7719.72	5990.48S	1152.08W	==>	6097.92	
14100.00	90.04	179.190	7719.65	6090.47S	1150.66W	==>	6196.37	
14200.00	90.04	179.190	7719.57	6190.46S	1149.24W	==>	6294.81	
14300.00	90.04	179.190	7719.50	6290.45S	1147.82W	==>	6393.26	
14400.00	90.04	179.190	7719.42	6390.44S	1146.40W	==>	6491.71	
14500.00	90.04	179.190	7719.35	6490.43S	1144.99W	==>	6590.15	
14600.00	90.04	179.190	7719.27	6590.42S	1143.57W	==>	6688.60	
14700.00	90.04	179.190	7719.20	6690.41S	1142.15W	==>	6787.05	
14800.00	90.04	179.190	7719.12	6790.40S	1140.73W	==>	6885.49	
14900.00	90.04	179.190	7719.05	6890.39S	1139.31W	==>	6983.94	
14962.65	90.04	179.190	7719.00	6953.04S	1138.42W	==>	7045.62	End of Hold/Target, 4 1/2in Production Liner,

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5160.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 189.300 degrees
Bottom hole distance is 7045.62 Feet on azimuth 189.30 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 5-Oct-2015

[illegible]



SYSDRILL
Well Design Combined Report
Wellbore: HOMESTEAD 11 (PWB)

Hole Sections								
Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13 1/2	23.00	23.00	0.00N	0.00E	1450.00	1450.00	0.00N	0.00E
8 3/4	1450.00	1450.00	0.00N	0.00E	8285.00	7724.00	276.06S	1233.14W
6 1/8	8285.00	7724.00	276.06S	1233.14W	14962.65	7719.00	6953.04S	1138.42W

Casings								
Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Surface Casing	23.00	23.00	0.00N	0.00E	1450.00	1450.00	0.00N	0.00E
7.0in Intermediate Casing	23.00	23.00	0.00N	0.00E	8285.00	7724.00	276.06S	1233.14W
4 1/2in Production Liner	7165.00	7029.71	442.57N	1090.86W	14962.65	7719.00	6953.04S	1138.42W

Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
HOMESTEAD 11 BH	6953.04S	1138.42W	7719.00	39.98814000	-104.76298000	1239384.76	3206512.33
HOMESTEAD 11 T1	276.22S	1233.14W	7724.00	40.00647000	-104.76312000	1246061.34	3206417.62

Survey Tool Program					
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
400617	Planned	14962.65	7719.00	ISCWSA MWD	Rev 3 + Fixed Rig + Rotating

Notes



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: HOMESTEAD 11 (PWB)

Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance
Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.

Wellbore		
Name	Created	Last Revised
HOMESTEAD 11 (PWB)	18-Aug-2015	5-Oct-2015

Well		
Name	Government ID	Last Revised
HOMESTEAD 11		18-Aug-2015

Slot						
Name	Latitude	Longitude	Grid Northing	Grid Easting	North	East
HOMESTEAD 11	40.00720000	-104.75871000	1246337.5504	3207650.7114	4.98N	159.64E

Installation						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Easting	Northing	Coord System Name	North Alignment
Homestead	40.00719000	-104.75928000	3207491.0767	1246332.5735	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary								
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]	
HOMESTEAD 10	16.81	1725.00	1725.00	6.13	1750.00	1.13	14962.65	
HOMESTEAD 12	16.81	1750.00	14962.65	-33.73	14962.65	0.88	14962.65	
HOMESTEAD 9	33.62	1700.00	1700.00	23.05	1723.00	1.20	14962.65	
HOMESTEAD 8	47.62	1650.00	1650.00	37.40	1663.42	1.54	14962.65	
HOMESTEAD 7	64.43	1625.00	1625.00	54.34	1647.02	2.22	14962.65	
HOMESTEAD 6	81.24	1600.00	1600.00	71.26	1623.00	2.63	14962.65	
HOMESTEAD 5	95.25	1549.00	1549.00	85.61	1549.00	3.09	14962.65	
HOMESTEAD 4	112.05	1524.00	1524.00	102.55	1548.59	3.67	14962.65	
HOMESTEAD 3	128.86	1499.38	1499.38	119.48	1523.00	4.13	14962.65	
HOMESTEAD 2	145.72	1473.00	14962.65	136.44	1433.76	4.62	14962.65	
HOMESTEAD 1	159.72	1448.00	1448.00	150.36	1448.00	5.17	14962.65	
HOMESTEAD 13	185.10	2335.99	14962.65	126.80	14962.65	1.42	14962.65	
HOMESTEAD 14	218.39	2237.57	14962.65	171.83	14962.65	1.49	14962.65	
HOMESTEAD 15	241.20	2188.35	14962.65	227.68	2204.76	2.05	14962.65	
HOMESTEAD 16	267.94	2106.33	14962.65	254.88	2123.00	2.57	14962.65	
HOMESTEAD 17	294.12	2007.91	14962.65	281.65	2024.31	2.84	14962.65	
HOMESTEAD 18	314.85	1958.70	14962.65	302.75	1975.10	3.37	14962.65	
HOMESTEAD 19	337.11	1876.67	14962.65	325.46	1893.08	3.86	14962.65	
HOMESTEAD 20	357.03	1794.65	14962.65	345.90	1811.06	4.20	14962.65	
HOMESTEAD 21	372.58	1532.19	14962.65	362.68	1663.42	4.70	14962.65	
HOMESTEAD 22	389.39	1506.00	14962.65	379.93	1532.19	5.19	14962.65	
HOMESTEAD 23	406.19	1481.00	14962.65	396.89	1515.78	5.55	14962.65	
HOMESTEAD 24	420.20	1456.00	14962.65	410.95	1433.76	6.04	14962.65	

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 5160.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 189.300 degrees
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 5-Oct-2015

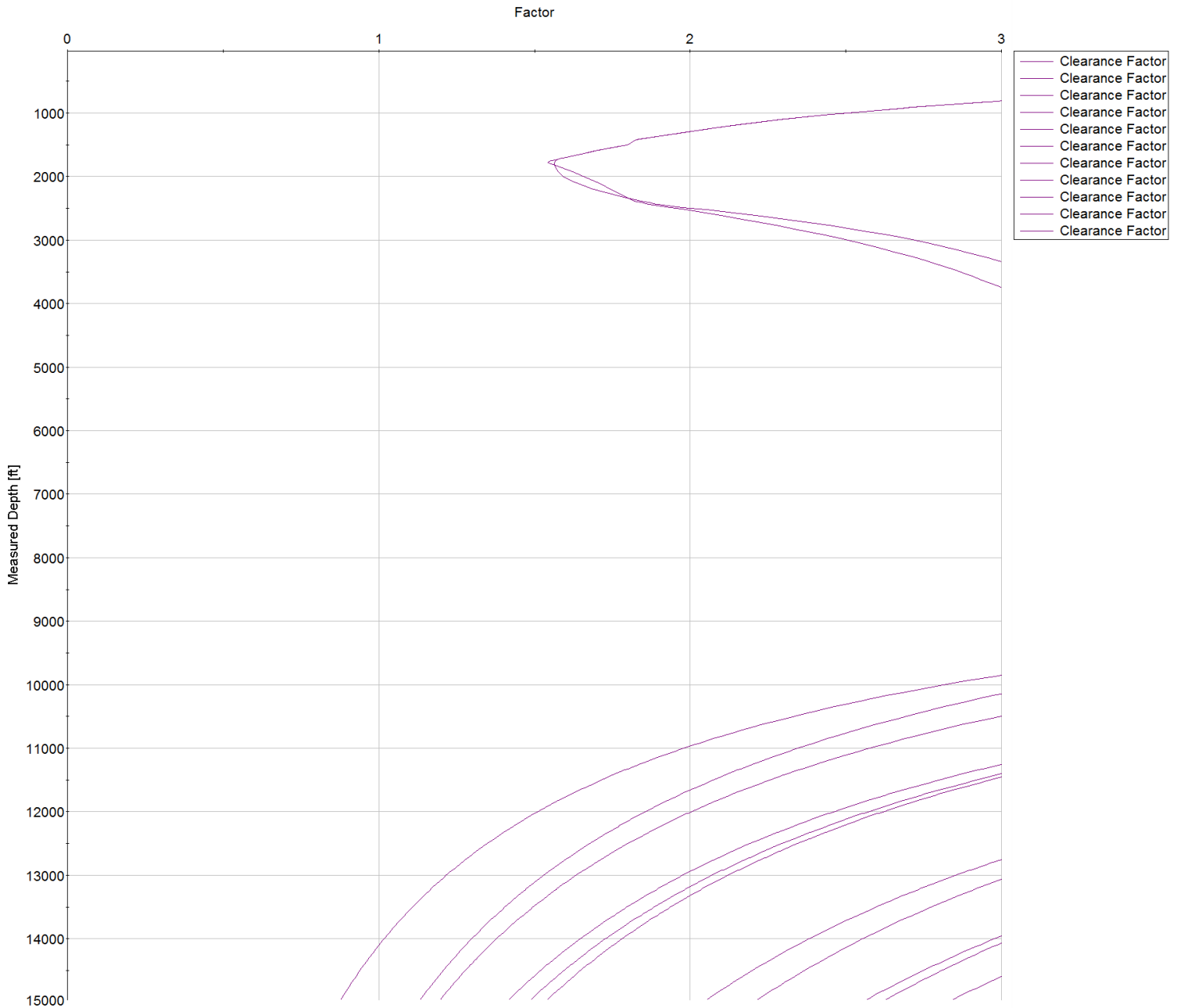


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Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
WILLARD, JOHN W. GAS UNIT #1	979.69	5289.82	5289.82	933.34	5436.39	18.06	7109.61
BERGMAN #2	1031.58	14078.63	14078.63	850.89	14123.00	5.62	14245.44
BERGMAN #1	2283.33	11161.81	11161.81	2174.78	11194.26	20.67	11489.54
BEN STEVENSON GAS UNIT #1	2495.06	14962.65	14962.65	2351.06	14962.65	17.33	14962.65
UPRR 50 PAN AM M #1	2747.95	1750.00	9466.92	2730.25	1761.85	43.69	11046.62
VISTA USX #WW33-08D	3484.02	7782.19	7782.19	3423.44	7782.19	48.25	10341.24
BRIGHTON COMPANY #1	4622.61	13802.53	13802.53	4449.37	13884.55	25.19	14962.65
SHAW A #1	6018.55	14962.65	14962.65	5858.10	14962.65	37.51	14962.65

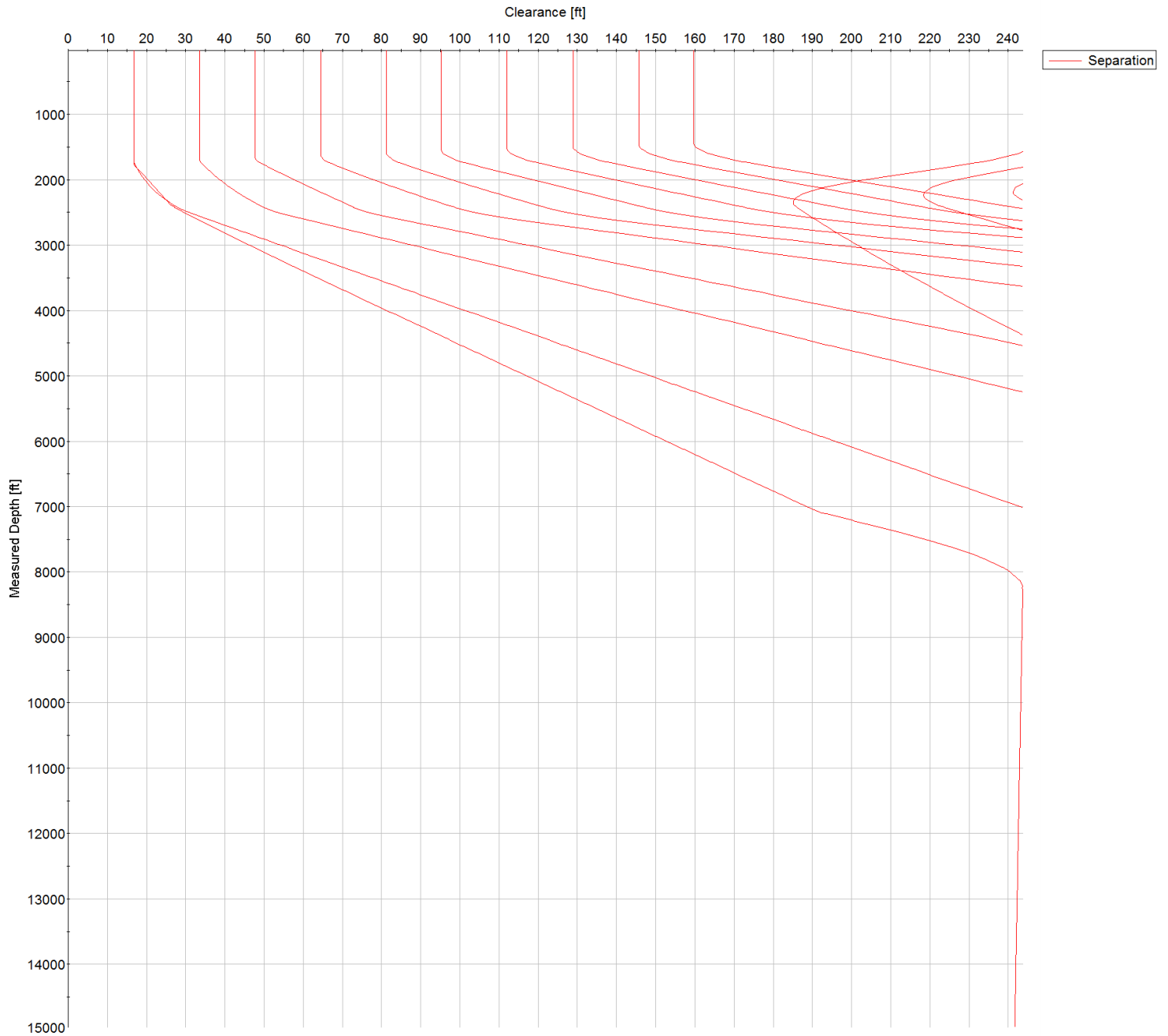


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