

WARD PETROLEUM

Location	ADAMS COUNTY, CO	Slot	Slot #5
Field	West Brighton	Well	Schaefer 24-3-5HC
Installation	Schaefer	Wellbore	Schaefer 24-3-5HC (PWB)

Tie on - 0.00 Inc, 15.00 MD, 15.00 TVD, 0.00 VS

9 5/8in Surface Casing

3DS Kick off Point - 0.00 Inc, 1400.00 MD, 1400.00 TVD, 0.00 VS

End of Build - 5.76 Inc, 1687.80 MD, 1687.31 TVD, -13.43 VS

WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00
KOP	1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00
End of Build	1687.80	5.76	160.82	1687.31	-13.64	4.75	2.00	-13.43
End of Hold	7162.14	5.76	160.82	7134.05	-532.19	185.13	0.00	-523.79
Target Schaefer 24-3-5	8119.97	90.34	359.80	7761.00	41.67	203.79	10.00	50.34
T.D. & Target Schaefer	12484.13	90.34	359.80	7735.00	4405.73	188.43	0.00	4409.75

Created by admin
 Date plotted 13-Feb-2014
 Plot reference is Schaefer 24-3-5HC (PWB).
 Ref wellpath is Schaefer 24-3-5HC (PWP#1).
 Coordinates are in feet reference Slot #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: 5037.00 ft.
 Plot North is aligned to GRID North.

End of Hold - 5.76 Inc, 7162.14 MD, 7134.05 TVD, -523.79 VS

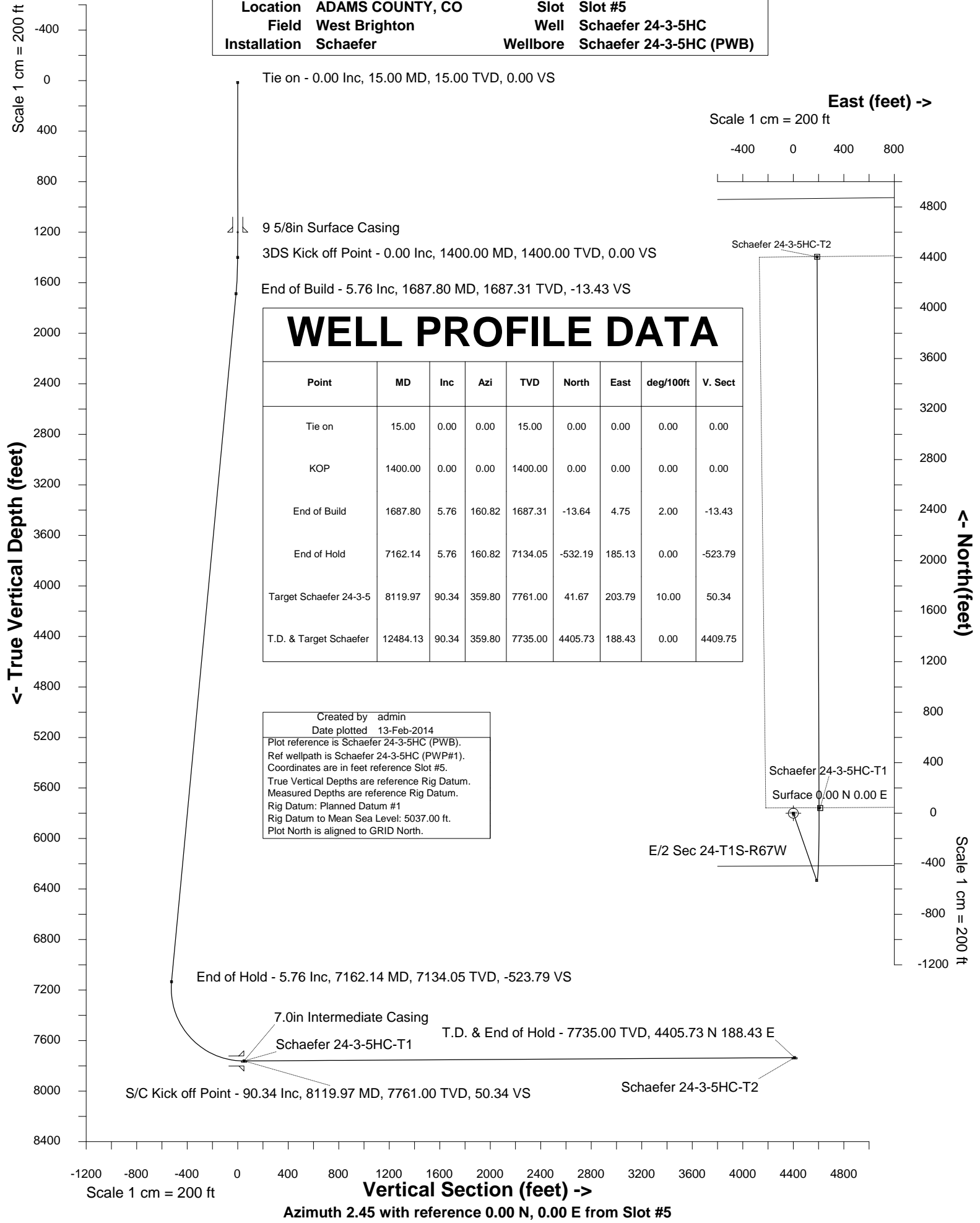
7.0in Intermediate Casing

Schaefer 24-3-5HC-T1

T.D. & End of Hold - 7735.00 TVD, 4405.73 N 188.43 E

S/C Kick off Point - 90.34 Inc, 8119.97 MD, 7761.00 TVD, 50.34 VS

Schaefer 24-3-5HC-T2



E/2 Sec 24-T1S-R67W

Schaefer 24-3-5HC-T1
 Surface 0.00 N 0.00 E

Scale 1 cm = 200 ft

Azimuth 2.45 with reference 0.00 N, 0.00 E from Slot #5



INTEGRATED PETROLEUM TECHNOLOGIES, INC
 SYSDRILL
 Well Design Combined Report
 Wellbore: Schaefer 24-3-5HC (PWB)

Wellhead Details							
Name	Northing	Easting	Latitude	Longitude	North	East	Elevation Above Inst.
Slot #5	1223318.1604	3186488.5355	39.94447000	-104.83487000	0.44S	58.88W	-0.00

Declination			
Date	Source	Time	
10-Feb-2014	IGRF Model [1900.0-2015.0]		13:06

Site Details				
Name	Northing	Easting	Coord System Name	North Alignment
Schaefer	1223318.6021	3186547.4140	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
15.00	0.00	0.000	15.00	0.00N	0.00E		0.00	1223318.16	3186488.54
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1687.80	5.76	160.820	1687.31	13.64S	4.75E	2.00	-13.43	1223304.52	3186493.28
7162.14	5.76	160.820	7134.05	532.19S	185.13E	==>	-523.79	1222785.99	3186673.66
8119.97	90.34	359.800	7761.00	41.67N	203.79E	10.00	50.34	1223359.83	3186692.32
12484.13	90.34	359.800	7735.00	4405.73N	188.43E	==>	4409.75	1227723.75	3186676.96

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	1223318.16	3186488.54
15.00	0.00	0.000	15.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1385.00	0.00	0.000	1385.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	1223318.16	3186488.54
1485.00	1.70	160.820	1484.99	1.19S	0.41E	2.00	-1.17	1223316.97	3186488.95
1585.00	3.70	160.820	1584.87	5.64S	1.96E	2.00	-5.55	1223312.52	3186490.50
1685.00	5.70	160.820	1684.53	13.38S	4.65E	2.00	-13.17	1223304.78	3186493.19
1687.80	5.76	160.820	1687.31	13.64S	4.75E	2.00	-13.43	1223304.52	3186493.28
1700.00	5.76	160.820	1699.45	14.80S	5.15E	==>	-14.56	1223303.36	3186493.68
1800.00	5.76	160.820	1798.95	24.27S	8.44E	==>	-23.89	1223293.89	3186496.98
1900.00	5.76	160.820	1898.45	33.74S	11.74E	==>	-33.21	1223284.42	3186500.27
2000.00	5.76	160.820	1997.94	43.21S	15.03E	==>	-42.53	1223274.95	3186503.57
2100.00	5.76	160.820	2097.44	52.69S	18.33E	==>	-51.86	1223265.48	3186506.86
2200.00	5.76	160.820	2196.93	62.16S	21.62E	==>	-61.18	1223256.00	3186510.16
2300.00	5.76	160.820	2296.43	71.63S	24.92E	==>	-70.50	1223246.53	3186513.45
2400.00	5.76	160.820	2395.93	81.10S	28.21E	==>	-79.82	1223237.06	3186516.75
2500.00	5.76	160.820	2495.42	90.58S	31.51E	==>	-89.15	1223227.59	3186520.04
2600.00	5.76	160.820	2594.92	100.05S	34.80E	==>	-98.47	1223218.12	3186523.34
2700.00	5.76	160.820	2694.41	109.52S	38.10E	==>	-107.79	1223208.64	3186526.63
2800.00	5.76	160.820	2793.91	118.99S	41.39E	==>	-117.12	1223199.17	3186529.93
2900.00	5.76	160.820	2893.40	128.47S	44.69E	==>	-126.44	1223189.70	3186533.22
3000.00	5.76	160.820	2992.90	137.94S	47.98E	==>	-135.76	1223180.23	3186536.52
3100.00	5.76	160.820	3092.40	147.41S	51.28E	==>	-145.08	1223170.76	3186539.81
3200.00	5.76	160.820	3191.89	156.88S	54.57E	==>	-154.41	1223161.28	3186543.11
3300.00	5.76	160.820	3291.39	166.35S	57.87E	==>	-163.73	1223151.81	3186546.40

All data is in Feet unless otherwise stated
 Coordinates are from Slot MD's are from Rig (Planned Datum #1 5037.0ft above Mean Sea Level)
 Vertical Section is from 0.00N 0.00E on azimuth 2.450 degrees
 Bottom hole distance is 4409.75 Feet on azimuth 2.45 degrees from Wellhead
 Calculation method uses Minimum Curvature method
 Prepared by Integrated Petroleum Technologies, Inc.
 Date Printed: 13-Feb-2014



INTEGRATED PETROLEUM TECHNOLOGIES, INC
SYSDRILL
 Well Design Combined Report
 Wellbore: Schaefer 24-3-5HC (PWB)

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
3400.00	5.76	160.820	3390.88	175.83S	61.17E	==>	-173.05	1223142.34	3186549.70
3500.00	5.76	160.820	3490.38	185.30S	64.46E	==>	-182.38	1223132.87	3186552.99
3600.00	5.76	160.820	3589.88	194.77S	67.76E	==>	-191.70	1223123.40	3186556.29
3700.00	5.76	160.820	3689.37	204.24S	71.05E	==>	-201.02	1223113.92	3186559.58
3800.00	5.76	160.820	3788.87	213.72S	74.35E	==>	-210.34	1223104.45	3186562.88
3900.00	5.76	160.820	3888.36	223.19S	77.64E	==>	-219.67	1223094.98	3186566.17
4000.00	5.76	160.820	3987.86	232.66S	80.94E	==>	-228.99	1223085.51	3186569.47
4100.00	5.76	160.820	4087.35	242.13S	84.23E	==>	-238.31	1223076.04	3186572.76
4200.00	5.76	160.820	4186.85	251.60S	87.53E	==>	-247.64	1223066.56	3186576.06
4300.00	5.76	160.820	4286.35	261.08S	90.82E	==>	-256.96	1223057.09	3186579.35
4400.00	5.76	160.820	4385.84	270.55S	94.12E	==>	-266.28	1223047.62	3186582.65
4500.00	5.76	160.820	4485.34	280.02S	97.41E	==>	-275.60	1223038.15	3186585.94
4600.00	5.76	160.820	4584.83	289.49S	100.71E	==>	-284.93	1223028.68	3186589.24
4700.00	5.76	160.820	4684.33	298.97S	104.00E	==>	-294.25	1223019.20	3186592.53
4800.00	5.76	160.820	4783.83	308.44S	107.30E	==>	-303.57	1223009.73	3186595.83
4900.00	5.76	160.820	4883.32	317.91S	110.59E	==>	-312.89	1223000.26	3186599.12
5000.00	5.76	160.820	4982.82	327.38S	113.89E	==>	-322.22	1222990.79	3186602.42
5100.00	5.76	160.820	5082.31	336.86S	117.18E	==>	-331.54	1222981.32	3186605.71
5200.00	5.76	160.820	5181.81	346.33S	120.48E	==>	-340.86	1222971.84	3186609.01
5300.00	5.76	160.820	5281.30	355.80S	123.77E	==>	-350.19	1222962.37	3186612.30
5400.00	5.76	160.820	5380.80	365.27S	127.07E	==>	-359.51	1222952.90	3186615.60
5500.00	5.76	160.820	5480.30	374.74S	130.36E	==>	-368.83	1222943.43	3186618.89
5600.00	5.76	160.820	5579.79	384.22S	133.66E	==>	-378.15	1222933.96	3186622.19
5700.00	5.76	160.820	5679.29	393.69S	136.95E	==>	-387.48	1222924.48	3186625.48
5800.00	5.76	160.820	5778.78	403.16S	140.25E	==>	-396.80	1222915.01	3186628.78
5900.00	5.76	160.820	5878.28	412.63S	143.54E	==>	-406.12	1222905.54	3186632.07
6000.00	5.76	160.820	5977.77	422.11S	146.84E	==>	-415.45	1222896.07	3186635.37
6100.00	5.76	160.820	6077.27	431.58S	150.13E	==>	-424.77	1222886.60	3186638.66
6200.00	5.76	160.820	6176.77	441.05S	153.43E	==>	-434.09	1222877.12	3186641.96
6300.00	5.76	160.820	6276.26	450.52S	156.72E	==>	-443.41	1222867.65	3186645.25
6400.00	5.76	160.820	6375.76	459.99S	160.02E	==>	-452.74	1222858.18	3186648.55
6500.00	5.76	160.820	6475.25	469.47S	163.31E	==>	-462.06	1222848.71	3186651.84
6600.00	5.76	160.820	6574.75	478.94S	166.61E	==>	-471.38	1222839.24	3186655.14
6700.00	5.76	160.820	6674.25	488.41S	169.90E	==>	-480.71	1222829.76	3186658.43
6800.00	5.76	160.820	6773.74	497.88S	173.20E	==>	-490.03	1222820.29	3186661.73
6900.00	5.76	160.820	6873.24	507.36S	176.49E	==>	-499.35	1222810.82	3186665.02
7000.00	5.76	160.820	6972.73	516.83S	179.79E	==>	-508.67	1222801.35	3186668.32
7100.00	5.76	160.820	7072.23	526.30S	183.09E	==>	-518.00	1222791.88	3186671.61
7162.14	5.76	160.820	7134.05	532.19S	185.13E	==>	-523.79	1222785.99	3186673.66
7200.00	2.50	131.210	7171.82	534.53S	186.38E	10.00	-526.07	1222783.65	3186674.91
7300.00	8.55	12.410	7271.47	528.69S	189.63E	10.00	-520.10	1222789.49	3186678.16
7400.00	18.44	5.460	7368.59	505.63S	192.74E	10.00	-496.93	1222812.55	3186681.27
7500.00	28.40	3.290	7460.24	466.04S	195.61E	10.00	-457.26	1222852.13	3186684.14
7600.00	38.38	2.180	7543.63	411.14S	198.16E	10.00	-402.29	1222907.04	3186686.69
7700.00	48.37	1.480	7616.22	342.58S	200.32E	10.00	-333.70	1222975.59	3186688.85
7800.00	58.36	0.970	7675.81	262.45S	202.01E	10.00	-253.58	1223055.72	3186690.54
7900.00	68.36	0.560	7720.59	173.19S	203.18E	10.00	-164.35	1223144.98	3186691.71
8000.00	78.35	0.200	7749.20	77.50S	203.80E	10.00	-68.72	1223240.66	3186692.33
8100.00	88.35	359.860	7760.77	21.70N	203.85E	10.00	30.39	1223339.86	3186692.38
8119.97	90.34	359.800	7761.00	41.67N	203.79E	10.00	50.34	1223359.83	3186692.32
8200.00	90.34	359.800	7760.52	121.70N	203.51E	==>	130.28	1223439.85	3186692.04
8300.00	90.34	359.800	7759.93	221.69N	203.16E	==>	230.17	1223539.85	3186691.69
8400.00	90.34	359.800	7759.33	321.69N	202.80E	==>	330.06	1223639.84	3186691.33
8500.00	90.34	359.800	7758.74	421.69N	202.45E	==>	429.95	1223739.84	3186690.98
8600.00	90.34	359.800	7758.14	521.69N	202.10E	==>	529.85	1223839.83	3186690.63
8700.00	90.34	359.800	7757.54	621.68N	201.75E	==>	629.74	1223939.83	3186690.28
8800.00	90.34	359.800	7756.95	721.68N	201.40E	==>	729.63	1224039.82	3186689.93
8900.00	90.34	359.800	7756.35	821.68N	201.04E	==>	829.52	1224139.81	3186689.57
9000.00	90.34	359.800	7755.76	921.68N	200.69E	==>	929.41	1224239.81	3186689.22
9100.00	90.34	359.800	7755.16	1021.67N	200.34E	==>	1029.30	1224339.80	3186688.87
9200.00	90.34	359.800	7754.57	1121.67N	199.99E	==>	1129.19	1224439.80	3186688.52

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INTEGRATED PETROLEUM TECHNOLOGIES, INC
 SYSDRILL
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Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
9300.00	90.34	359.800	7753.97	1221.67N	199.64E	==>	1229.08	1224539.79	3186688.17
9400.00	90.34	359.800	7753.37	1321.67N	199.28E	==>	1328.98	1224639.79	3186687.81
9500.00	90.34	359.800	7752.78	1421.67N	198.93E	==>	1428.87	1224739.78	3186687.46
9600.00	90.34	359.800	7752.18	1521.66N	198.58E	==>	1528.76	1224839.78	3186687.11
9700.00	90.34	359.800	7751.59	1621.66N	198.23E	==>	1628.65	1224939.77	3186686.76
9800.00	90.34	359.800	7750.99	1721.66N	197.88E	==>	1728.54	1225039.77	3186686.41
9900.00	90.34	359.800	7750.40	1821.66N	197.52E	==>	1828.43	1225139.76	3186686.05
10000.00	90.34	359.800	7749.80	1921.65N	197.17E	==>	1928.32	1225239.75	3186685.70
10100.00	90.34	359.800	7749.20	2021.65N	196.82E	==>	2028.21	1225339.75	3186685.35
10200.00	90.34	359.800	7748.61	2121.65N	196.47E	==>	2128.11	1225439.74	3186685.00
10300.00	90.34	359.800	7748.01	2221.65N	196.12E	==>	2228.00	1225539.74	3186684.65
10400.00	90.34	359.800	7747.42	2321.64N	195.76E	==>	2327.89	1225639.73	3186684.29
10500.00	90.34	359.800	7746.82	2421.64N	195.41E	==>	2427.78	1225739.73	3186683.94
10600.00	90.34	359.800	7746.22	2521.64N	195.06E	==>	2527.67	1225839.72	3186683.59
10700.00	90.34	359.800	7745.63	2621.64N	194.71E	==>	2627.56	1225939.72	3186683.24
10800.00	90.34	359.800	7745.03	2721.63N	194.36E	==>	2727.45	1226039.71	3186682.89
10900.00	90.34	359.800	7744.44	2821.63N	194.00E	==>	2827.34	1226139.70	3186682.53
11000.00	90.34	359.800	7743.84	2921.63N	193.65E	==>	2927.24	1226239.70	3186682.18
11100.00	90.34	359.800	7743.25	3021.63N	193.30E	==>	3027.13	1226339.69	3186681.83
11200.00	90.34	359.800	7742.65	3121.62N	192.95E	==>	3127.02	1226439.69	3186681.48
11300.00	90.34	359.800	7742.05	3221.62N	192.60E	==>	3226.91	1226539.68	3186681.13
11400.00	90.34	359.800	7741.46	3321.62N	192.24E	==>	3326.80	1226639.68	3186680.77
11500.00	90.34	359.800	7740.86	3421.62N	191.89E	==>	3426.69	1226739.67	3186680.42
11600.00	90.34	359.800	7740.27	3521.61N	191.54E	==>	3526.58	1226839.67	3186680.07
11700.00	90.34	359.800	7739.67	3621.61N	191.19E	==>	3626.47	1226939.66	3186679.72
11800.00	90.34	359.800	7739.08	3721.61N	190.84E	==>	3726.37	1227039.66	3186679.37
11900.00	90.34	359.800	7738.48	3821.61N	190.48E	==>	3826.26	1227139.65	3186679.01
12000.00	90.34	359.800	7737.88	3921.61N	190.13E	==>	3926.15	1227239.64	3186678.66
12100.00	90.34	359.800	7737.29	4021.60N	189.78E	==>	4026.04	1227339.64	3186678.31
12200.00	90.34	359.800	7736.69	4121.60N	189.43E	==>	4125.93	1227439.63	3186677.96
12300.00	90.34	359.800	7736.10	4221.60N	189.08E	==>	4225.82	1227539.63	3186677.61
12400.00	90.34	359.800	7735.50	4321.60N	188.72E	==>	4325.71	1227639.62	3186677.25
12484.13	90.34	359.800	7735.00	4405.73N	188.43E	==>	4409.75	1227723.75	3186676.96

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 5037.0ft above Mean Sea Level)
 Vertical Section is from 0.00N 0.00E on azimuth 2.450 degrees
 Bottom hole distance is 4409.75 Feet on azimuth 2.45 degrees from Wellhead
 Calculation method uses Minimum Curvature method
 Prepared by Integrated Petroleum Technologies, Inc.
 Date Printed: 13-Feb-2014



INTEGRATED PETROLEUM TECHNOLOGIES, INC
 SYSDRILL
 Well Design Combined Report
 Wellbore: Schaefer 24-3-5HC (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	15.00	15.00	0.00N	0.00E	1200.00	1200.00	0.00N	0.00E
8 3/4	1200.00	1200.00	0.00N	0.00E	8119.00	7761.00	40.70N	203.79E
6 1/8	8119.00	7761.00	40.70N	203.79E	12484.17	7735.00	4405.77N	188.43E

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	15.00	15.00	0.00N	0.00E	1200.00	1200.00	0.00N	0.00E
7.0in Intermediate Casing	15.00	15.00	0.00N	0.00E	8119.00	7761.00	40.70N	203.79E
4 1/2in Production Liner	7919.00	7727.31	155.41S	203.34E	12484.17		4405.77N	188.43E

Targets								
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting	Last Revised
Schaefer 24-3-5HC-T1	41.67N	212.79E	7761.00	39.94458000	-104.83411000	1223359.83	3186701.32	11-Feb-2014
Schaefer 24-3-5HC-T2	4405.73N	188.43E	7735.00	39.95656000	-104.83408000	1227723.75	3186676.96	11-Feb-2014

Survey Tool Program					
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
153326	Planned	12484.13	7735.00	WdW Rate Gyro	Standard

Notes



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Schaefer 24-3-5HC (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
Proximities beyond 2500.00ft with expansion rate of 0.00ft/1000ft are not reported
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	
Schaefer 24-3-5HC (PWB)	11-Feb-2014	12-Feb-2014	

Well		
Name	Government ID	Last Revised
Schaefer 24-3-5HC		11-Feb-2014

Slot						
Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
Slot #5	1223318.1604	3186488.5355	39.94447000	-104.83487000	0.44S	58.88W

Installation				
Name	Easting	Northing	Coord System Name	North Alignment
Schaefer	3186547.4140	1223318.6021	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Field				
Name	Easting	Northing	Coord System Name	North Alignment
West Brighton	3178196.4983	1231661.3262	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
Schaefer 24-3-6HN	Schaefer 24-3-6HN (PWB)	Slot #6	Schaefer	14.02	1350.00	8123.06	11.15	1196.10	4.89	1196.10
Schaefer 24-3-4HN	Schaefer 24-3-4HN (PWB)	Slot #4	Schaefer	14.02	1350.00	12484.13	11.15	1196.10	4.89	1196.10
Schaefer 25-1-6HC	Schaefer 25-1-6HC (PWB)	Slot #14	Schaefer	15.70	1451.44	7571.04	12.72	1458.57	5.26	1474.97
Schaefer 25-1-5HN	Schaefer 25-1-5HN (PWB)	Slot #13	Schaefer	16.19	1500.00	7442.73	9.49	7442.73	1.61	7442.73
Schaefer 25-1-4HC	Schaefer 25-1-4HC (PWB)	Slot #12	Schaefer	26.75	1400.00	7589.61	23.86	1400.00	9.12	1458.57
Schaefer 25-1-7HN	Schaefer 25-1-7HN (PWB)	Slot #15	Schaefer	26.75	1265.00	1265.00	23.88	1196.10	9.33	1196.10
Schaefer 24-3-3HC	Schaefer 24-3-3HC (PWB)	Slot #3	Schaefer	30.84	1300.00	12484.13	27.98	1196.10	10.76	1196.10
Schaefer 24-3-7HC	Schaefer 24-3-7HC (PWB)	Slot #7	Schaefer	30.84	1300.00	1300.00	27.98	1196.10	10.76	1196.10
Shaefer 25-1-8HC	Shaefer 25-1-8HC (PWB)	Slot #16	Schaefer	39.26	1215.00	1215.00	36.39	1196.10	13.70	1196.10
Schaefer	Schaefer	Slot #11	Schaefer	39.26	1350.00	1350.00	36.39	1196.10	13.68	1425.76

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Prepared by Integrated Petroleum Technologies, Inc.
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SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Schaefer 24-3-5HC (PWB)

Clearance Summary										
Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
25-1-3HN	25-1-3HN (PWB)									
Schaefer 24-3-2HN	Schaefer 24-3-2HN (PWB)	Slot #2	Schaefer	44.86	1250.00	12484.13	42.00	1196.10	15.65	1196.10
Schaefer 24-3-8HN	Schaefer 24-3-8HN (PWB)	Slot #8	Schaefer	44.86	1250.00	1250.00	42.00	1196.10	15.65	1196.10
Schaefer 25-1-2HC	Schaefer 25-1-2HC (PWB)	Slot #10	Schaefer	55.23	1300.00	1300.00	52.36	1196.10	19.27	1196.10
Schaefer 24-3-1HC	Schaefer 24-3-1HC (PWB)	Slot #1	Schaefer	58.88	1200.00	12484.13	56.01	1200.00	20.50	1200.00
Schaefer 25-1-1HN	Schaefer 25-1-1HN (PWB)	Slot #9	Schaefer	68.85	1250.00	1250.00	65.99	1196.10	24.02	1196.10
W Letterly-Scott 1	W Letterly-Scott 1 (AWB)	Letterly-Scott 1	Offsets	603.11	11412.25	11412.25	546.84	11415.92	10.67	11465.13
Sharp #24-3-9HC	Sharp #24-3-9HC (PWB)	Slot #10	Sharp Pad	1768.79	8103.44	8103.44	1703.88	12484.13	21.78	12484.13
SHARP #24-3-9HC	SHARP #24-3-9HC (PWB)	Slot #7	Sharp Pad	1768.80	8102.27	8102.27	1703.87	12484.13	21.77	12484.13
Sharp #25-1-9HN	Sharp #25-1-9HN (PWB)	Slot #4	Sharp Pad	1771.57	7430.30	7430.30	1754.44	7430.30	103.46	7462.51
Sharp #24-3-10HN	Sharp #24-3-10HN (PWB)	Slot #9	Sharp Pad	2217.43	7996.37	8091.16	2153.01	12484.13	27.42	12484.13
Sharp #25-1-10HC	Sharp #25-1-10HC (PWB)	Slot #3	Sharp Pad	2221.12	7577.34	7577.34	2205.21	7577.34	139.38	7515.00