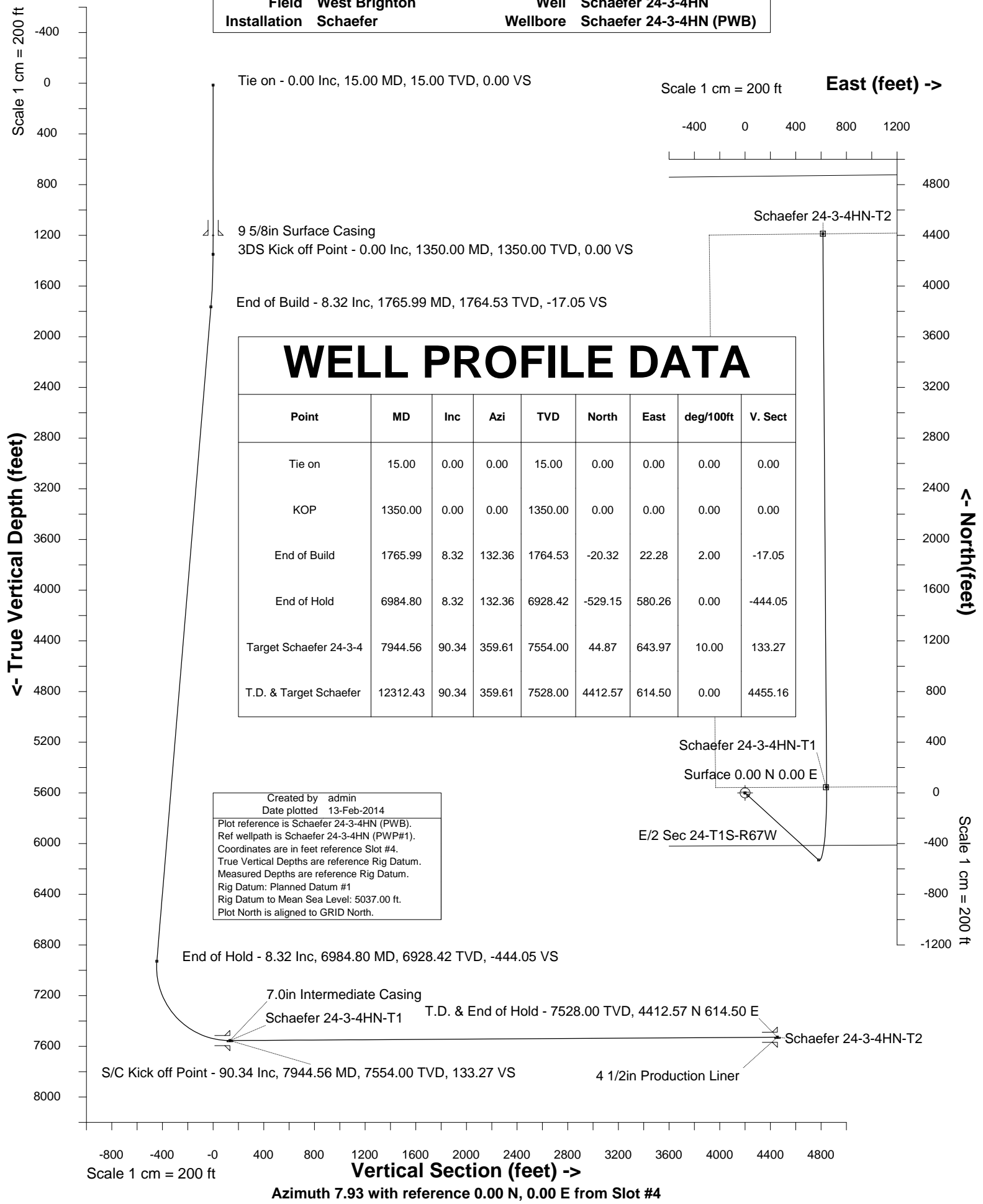


WARD PETROLEUM

| | | | |
|--------------|------------------|----------|-------------------------|
| Location | ADAMS COUNTY, CO | Slot | Slot #4 |
| Field | West Brighton | Well | Schaefer 24-3-4HN |
| Installation | Schaefer | Wellbore | Schaefer 24-3-4HN (PWB) |





INTEGRATED PETROLEUM TECHNOLOGIES, INC
SYSDRILL
Well Design Combined Report
Wellbore: Schaefer 24-3-4HN (PWB)

| Wellhead Details | | | | | | | |
|------------------|--------------|--------------|-------------|---------------|-------|--------|-----------------------|
| Name | Northing | Easting | Latitude | Longitude | North | East | Elevation Above Inst. |
| Slot #4 | 1223318.2656 | 3186502.5542 | 39.94447000 | -104.83482000 | 0.34S | 44.86W | -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 | 1223318.27 | 3186502.55 |
| 1350.00 | 0.00 | 0.000 | 1350.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1765.99 | 8.32 | 132.360 | 1764.53 | 20.32S | 22.28E | 2.00 | -17.05 | 1223297.95 | 3186524.83 |
| 6984.80 | 8.32 | 132.360 | 6928.42 | 529.15S | 580.26E | ==> | -444.05 | 1222789.13 | 3187082.79 |
| 7944.56 | 90.34 | 359.610 | 7554.00 | 44.87N | 643.97E | 10.00 | 133.27 | 1223363.14 | 3187146.50 |
| 12312.43 | 90.34 | 359.610 | 7528.00 | 4412.57N | 614.50E | ==> | 4455.16 | 1227730.70 | 3187117.04 |

| 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 | 1223318.27 | 3186502.55 |
| 15.00 | 0.00 | 0.000 | 15.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 100.00 | 0.00 | 0.000 | 100.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 200.00 | 0.00 | 0.000 | 200.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 300.00 | 0.00 | 0.000 | 300.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 400.00 | 0.00 | 0.000 | 400.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 500.00 | 0.00 | 0.000 | 500.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 600.00 | 0.00 | 0.000 | 600.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 700.00 | 0.00 | 0.000 | 700.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 800.00 | 0.00 | 0.000 | 800.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 900.00 | 0.00 | 0.000 | 900.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1000.00 | 0.00 | 0.000 | 1000.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1100.00 | 0.00 | 0.000 | 1100.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1200.00 | 0.00 | 0.000 | 1200.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1300.00 | 0.00 | 0.000 | 1300.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1335.00 | 0.00 | 0.000 | 1335.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1350.00 | 0.00 | 0.000 | 1350.00 | 0.00N | 0.00E | ==> | 0.00 | 1223318.27 | 3186502.55 |
| 1435.00 | 1.70 | 132.360 | 1434.99 | 0.85S | 0.93E | 2.00 | -0.71 | 1223317.42 | 3186503.49 |
| 1535.00 | 3.70 | 132.360 | 1534.87 | 4.02S | 4.41E | 2.00 | -3.38 | 1223314.24 | 3186506.97 |
| 1635.00 | 5.70 | 132.360 | 1634.53 | 9.54S | 10.47E | 2.00 | -8.01 | 1223308.72 | 3186513.02 |
| 1735.00 | 7.70 | 132.360 | 1733.84 | 17.41S | 19.09E | 2.00 | -14.61 | 1223300.86 | 3186521.64 |
| 1765.99 | 8.32 | 132.360 | 1764.53 | 20.32S | 22.28E | 2.00 | -17.05 | 1223297.95 | 3186524.83 |
| 1800.00 | 8.32 | 132.360 | 1798.18 | 23.63S | 25.91E | ==> | -19.83 | 1223294.64 | 3186528.47 |
| 1900.00 | 8.32 | 132.360 | 1897.13 | 33.38S | 36.61E | ==> | -28.01 | 1223284.89 | 3186539.16 |
| 2000.00 | 8.32 | 132.360 | 1996.08 | 43.13S | 47.30E | ==> | -36.20 | 1223275.14 | 3186549.85 |
| 2100.00 | 8.32 | 132.360 | 2095.02 | 52.88S | 57.99E | ==> | -44.38 | 1223265.39 | 3186560.54 |
| 2200.00 | 8.32 | 132.360 | 2193.97 | 62.63S | 68.68E | ==> | -52.56 | 1223255.64 | 3186571.23 |
| 2300.00 | 8.32 | 132.360 | 2292.92 | 72.38S | 79.37E | ==> | -60.74 | 1223245.89 | 3186581.92 |
| 2400.00 | 8.32 | 132.360 | 2391.87 | 82.13S | 90.06E | ==> | -68.92 | 1223236.14 | 3186592.62 |
| 2500.00 | 8.32 | 132.360 | 2490.81 | 91.88S | 100.76E | ==> | -77.11 | 1223226.39 | 3186603.31 |
| 2600.00 | 8.32 | 132.360 | 2589.76 | 101.63S | 111.45E | ==> | -85.29 | 1223216.64 | 3186614.00 |
| 2700.00 | 8.32 | 132.360 | 2688.71 | 111.38S | 122.14E | ==> | -93.47 | 1223206.89 | 3186624.69 |
| 2800.00 | 8.32 | 132.360 | 2787.66 | 121.13S | 132.83E | ==> | -101.65 | 1223197.14 | 3186635.38 |
| 2900.00 | 8.32 | 132.360 | 2886.61 | 130.88S | 143.52E | ==> | -109.83 | 1223187.39 | 3186646.07 |
| 3000.00 | 8.32 | 132.360 | 2985.55 | 140.63S | 154.21E | ==> | -118.02 | 1223177.64 | 3186656.76 |
| 3100.00 | 8.32 | 132.360 | 3084.50 | 150.38S | 164.91E | ==> | -126.20 | 1223167.89 | 3186667.45 |
| 3200.00 | 8.32 | 132.360 | 3183.45 | 160.13S | 175.60E | ==> | -134.38 | 1223158.14 | 3186678.15 |
| 3300.00 | 8.32 | 132.360 | 3282.40 | 169.88S | 186.29E | ==> | -142.56 | 1223148.39 | 3186688.84 |

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 7.930 degrees
Bottom hole distance is 4455.16 Feet on azimuth 7.93 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 24-3-4HN (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 | 8.32 | 132.360 | 3381.34 | 179.63S | 196.98E | ==> | -150.74 | 1223138.64 | 3186699.53 |
| 3500.00 | 8.32 | 132.360 | 3480.29 | 189.38S | 207.67E | ==> | -158.93 | 1223128.89 | 3186710.22 |
| 3600.00 | 8.32 | 132.360 | 3579.24 | 199.13S | 218.36E | ==> | -167.11 | 1223119.14 | 3186720.91 |
| 3700.00 | 8.32 | 132.360 | 3678.19 | 208.88S | 229.06E | ==> | -175.29 | 1223109.39 | 3186731.60 |
| 3800.00 | 8.32 | 132.360 | 3777.13 | 218.63S | 239.75E | ==> | -183.47 | 1223099.64 | 3186742.29 |
| 3900.00 | 8.32 | 132.360 | 3876.08 | 228.38S | 250.44E | ==> | -191.65 | 1223089.89 | 3186752.99 |
| 4000.00 | 8.32 | 132.360 | 3975.03 | 238.13S | 261.13E | ==> | -199.84 | 1223080.14 | 3186763.68 |
| 4100.00 | 8.32 | 132.360 | 4073.98 | 247.88S | 271.82E | ==> | -208.02 | 1223070.39 | 3186774.37 |
| 4200.00 | 8.32 | 132.360 | 4172.92 | 257.63S | 282.51E | ==> | -216.20 | 1223060.64 | 3186785.06 |
| 4300.00 | 8.32 | 132.360 | 4271.87 | 267.38S | 293.21E | ==> | -224.38 | 1223050.89 | 3186795.75 |
| 4400.00 | 8.32 | 132.360 | 4370.82 | 277.13S | 303.90E | ==> | -232.56 | 1223041.14 | 3186806.44 |
| 4500.00 | 8.32 | 132.360 | 4469.77 | 286.88S | 314.59E | ==> | -240.75 | 1223031.39 | 3186817.13 |
| 4600.00 | 8.32 | 132.360 | 4568.71 | 296.63S | 325.28E | ==> | -248.93 | 1223021.64 | 3186827.82 |
| 4700.00 | 8.32 | 132.360 | 4667.66 | 306.38S | 335.97E | ==> | -257.11 | 1223011.89 | 3186838.52 |
| 4800.00 | 8.32 | 132.360 | 4766.61 | 316.13S | 346.66E | ==> | -265.29 | 1223002.15 | 3186849.21 |
| 4900.00 | 8.32 | 132.360 | 4865.56 | 325.88S | 357.36E | ==> | -273.47 | 1222992.40 | 3186859.90 |
| 5000.00 | 8.32 | 132.360 | 4964.50 | 335.63S | 368.05E | ==> | -281.66 | 1222982.65 | 3186870.59 |
| 5100.00 | 8.32 | 132.360 | 5063.45 | 345.38S | 378.74E | ==> | -289.84 | 1222972.90 | 3186881.28 |
| 5200.00 | 8.32 | 132.360 | 5162.40 | 355.13S | 389.43E | ==> | -298.02 | 1222963.15 | 3186891.97 |
| 5300.00 | 8.32 | 132.360 | 5261.35 | 364.88S | 400.12E | ==> | -306.20 | 1222953.40 | 3186902.66 |
| 5400.00 | 8.32 | 132.360 | 5360.30 | 374.63S | 410.81E | ==> | -314.39 | 1222943.65 | 3186913.36 |
| 5500.00 | 8.32 | 132.360 | 5459.24 | 384.38S | 421.51E | ==> | -322.57 | 1222933.90 | 3186924.05 |
| 5600.00 | 8.32 | 132.360 | 5558.19 | 394.13S | 432.20E | ==> | -330.75 | 1222924.15 | 3186934.74 |
| 5700.00 | 8.32 | 132.360 | 5657.14 | 403.88S | 442.89E | ==> | -338.93 | 1222914.40 | 3186945.43 |
| 5800.00 | 8.32 | 132.360 | 5756.09 | 413.63S | 453.58E | ==> | -347.11 | 1222904.65 | 3186956.12 |
| 5900.00 | 8.32 | 132.360 | 5855.03 | 423.38S | 464.27E | ==> | -355.30 | 1222894.90 | 3186966.81 |
| 6000.00 | 8.32 | 132.360 | 5953.98 | 433.13S | 474.96E | ==> | -363.48 | 1222885.15 | 3186977.50 |
| 6100.00 | 8.32 | 132.360 | 6052.93 | 442.88S | 485.66E | ==> | -371.66 | 1222875.40 | 3186988.19 |
| 6200.00 | 8.32 | 132.360 | 6151.88 | 452.63S | 496.35E | ==> | -379.84 | 1222865.65 | 3186998.89 |
| 6300.00 | 8.32 | 132.360 | 6250.82 | 462.38S | 507.04E | ==> | -388.02 | 1222855.90 | 3187009.58 |
| 6400.00 | 8.32 | 132.360 | 6349.77 | 472.13S | 517.73E | ==> | -396.21 | 1222846.15 | 3187020.27 |
| 6500.00 | 8.32 | 132.360 | 6448.72 | 481.88S | 528.42E | ==> | -404.39 | 1222836.40 | 3187030.96 |
| 6600.00 | 8.32 | 132.360 | 6547.67 | 491.63S | 539.11E | ==> | -412.57 | 1222826.65 | 3187041.65 |
| 6700.00 | 8.32 | 132.360 | 6646.61 | 501.38S | 549.81E | ==> | -420.75 | 1222816.90 | 3187052.34 |
| 6800.00 | 8.32 | 132.360 | 6745.56 | 511.13S | 560.50E | ==> | -428.93 | 1222807.15 | 3187063.03 |
| 6900.00 | 8.32 | 132.360 | 6844.51 | 520.88S | 571.19E | ==> | -437.12 | 1222797.40 | 3187073.73 |
| 6984.80 | 8.32 | 132.360 | 6928.42 | 529.15S | 580.26E | ==> | -444.05 | 1222789.13 | 3187082.79 |
| 7000.00 | 7.38 | 123.590 | 6943.47 | 530.43S | 581.88E | 10.00 | -445.10 | 1222787.85 | 3187084.42 |
| 7100.00 | 8.49 | 45.670 | 7042.76 | 528.82S | 592.54E | 10.00 | -442.03 | 1222789.46 | 3187095.08 |
| 7200.00 | 17.00 | 20.220 | 7140.28 | 509.89S | 602.90E | 10.00 | -421.86 | 1222808.39 | 3187105.44 |
| 7300.00 | 26.55 | 12.070 | 7233.05 | 474.22S | 612.65E | 10.00 | -385.19 | 1222844.06 | 3187115.19 |
| 7400.00 | 36.34 | 8.050 | 7318.27 | 422.90S | 621.50E | 10.00 | -333.13 | 1222895.38 | 3187124.03 |
| 7500.00 | 46.20 | 5.560 | 7393.34 | 357.47S | 629.16E | 10.00 | -267.28 | 1222960.80 | 3187131.70 |
| 7600.00 | 56.11 | 3.790 | 7455.99 | 279.94S | 635.42E | 10.00 | -189.62 | 1223038.33 | 3187137.96 |
| 7700.00 | 66.03 | 2.390 | 7504.30 | 192.66S | 640.08E | 10.00 | -102.53 | 1223125.61 | 3187142.62 |
| 7800.00 | 75.97 | 1.190 | 7536.82 | 98.27S | 643.00E | 10.00 | -8.64 | 1223220.00 | 3187145.53 |
| 7900.00 | 85.91 | 0.090 | 7552.54 | 0.35N | 644.09E | 10.00 | 89.19 | 1223318.62 | 3187146.62 |
| 7944.56 | 90.34 | 359.610 | 7554.00 | 44.87N | 643.97E | 10.00 | 133.27 | 1223363.14 | 3187146.50 |
| 8000.00 | 90.34 | 359.610 | 7553.67 | 100.31N | 643.60E | ==> | 188.13 | 1223418.58 | 3187146.13 |
| 8100.00 | 90.34 | 359.610 | 7553.07 | 200.31N | 642.92E | ==> | 287.07 | 1223518.57 | 3187145.46 |
| 8200.00 | 90.34 | 359.610 | 7552.48 | 300.31N | 642.25E | ==> | 386.02 | 1223618.56 | 3187144.78 |
| 8300.00 | 90.34 | 359.610 | 7551.88 | 400.30N | 641.57E | ==> | 484.97 | 1223718.55 | 3187144.11 |
| 8400.00 | 90.34 | 359.610 | 7551.29 | 500.30N | 640.90E | ==> | 583.92 | 1223818.55 | 3187143.43 |
| 8500.00 | 90.34 | 359.610 | 7550.69 | 600.29N | 640.22E | ==> | 682.86 | 1223918.54 | 3187142.76 |
| 8600.00 | 90.34 | 359.610 | 7550.10 | 700.29N | 639.55E | ==> | 781.81 | 1224018.53 | 3187142.08 |
| 8700.00 | 90.34 | 359.610 | 7549.50 | 800.29N | 638.87E | ==> | 880.76 | 1224118.53 | 3187141.41 |
| 8800.00 | 90.34 | 359.610 | 7548.91 | 900.28N | 638.20E | ==> | 979.70 | 1224218.52 | 3187140.73 |
| 8900.00 | 90.34 | 359.610 | 7548.31 | 1000.28N | 637.52E | ==> | 1078.65 | 1224318.51 | 3187140.06 |
| 9000.00 | 90.34 | 359.610 | 7547.72 | 1100.27N | 636.85E | ==> | 1177.60 | 1224418.50 | 3187139.38 |
| 9100.00 | 90.34 | 359.610 | 7547.12 | 1200.27N | 636.18E | ==> | 1276.55 | 1224518.50 | 3187138.71 |
| 9200.00 | 90.34 | 359.610 | 7546.53 | 1300.27N | 635.50E | ==> | 1375.49 | 1224618.49 | 3187138.04 |

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 7.930 degrees
Bottom hole distance is 4455.16 Feet on azimuth 7.93 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 24-3-4HN (PWB)

| 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 | 359.610 | 7545.93 | 1400.26N | 634.83E | ==> | 1474.44 | 1224718.48 | 3187137.36 |
| 9400.00 | 90.34 | 359.610 | 7545.34 | 1500.26N | 634.15E | ==> | 1573.39 | 1224818.48 | 3187136.69 |
| 9500.00 | 90.34 | 359.610 | 7544.74 | 1600.25N | 633.48E | ==> | 1672.33 | 1224918.47 | 3187136.01 |
| 9600.00 | 90.34 | 359.610 | 7544.15 | 1700.25N | 632.80E | ==> | 1771.28 | 1225018.46 | 3187135.34 |
| 9700.00 | 90.34 | 359.610 | 7543.55 | 1800.24N | 632.13E | ==> | 1870.23 | 1225118.45 | 3187134.66 |
| 9800.00 | 90.34 | 359.610 | 7542.96 | 1900.24N | 631.45E | ==> | 1969.18 | 1225218.45 | 3187133.99 |
| 9900.00 | 90.34 | 359.610 | 7542.36 | 2000.24N | 630.78E | ==> | 2068.12 | 1225318.44 | 3187133.31 |
| 10000.00 | 90.34 | 359.610 | 7541.76 | 2100.23N | 630.10E | ==> | 2167.07 | 1225418.43 | 3187132.64 |
| 10100.00 | 90.34 | 359.610 | 7541.17 | 2200.23N | 629.43E | ==> | 2266.02 | 1225518.43 | 3187131.96 |
| 10200.00 | 90.34 | 359.610 | 7540.57 | 2300.22N | 628.76E | ==> | 2364.96 | 1225618.42 | 3187131.29 |
| 10300.00 | 90.34 | 359.610 | 7539.98 | 2400.22N | 628.08E | ==> | 2463.91 | 1225718.41 | 3187130.62 |
| 10400.00 | 90.34 | 359.610 | 7539.38 | 2500.22N | 627.41E | ==> | 2562.86 | 1225818.40 | 3187129.94 |
| 10500.00 | 90.34 | 359.610 | 7538.79 | 2600.21N | 626.73E | ==> | 2661.80 | 1225918.40 | 3187129.27 |
| 10600.00 | 90.34 | 359.610 | 7538.19 | 2700.21N | 626.06E | ==> | 2760.75 | 1226018.39 | 3187128.59 |
| 10700.00 | 90.34 | 359.610 | 7537.60 | 2800.20N | 625.38E | ==> | 2859.70 | 1226118.38 | 3187127.92 |
| 10800.00 | 90.34 | 359.610 | 7537.00 | 2900.20N | 624.71E | ==> | 2958.65 | 1226218.38 | 3187127.24 |
| 10900.00 | 90.34 | 359.610 | 7536.41 | 3000.20N | 624.03E | ==> | 3057.59 | 1226318.37 | 3187126.57 |
| 11000.00 | 90.34 | 359.610 | 7535.81 | 3100.19N | 623.36E | ==> | 3156.54 | 1226418.36 | 3187125.89 |
| 11100.00 | 90.34 | 359.610 | 7535.22 | 3200.19N | 622.68E | ==> | 3255.49 | 1226518.35 | 3187125.22 |
| 11200.00 | 90.34 | 359.610 | 7534.62 | 3300.18N | 622.01E | ==> | 3354.43 | 1226618.35 | 3187124.54 |
| 11300.00 | 90.34 | 359.610 | 7534.03 | 3400.18N | 621.33E | ==> | 3453.38 | 1226718.34 | 3187123.87 |
| 11400.00 | 90.34 | 359.610 | 7533.43 | 3500.18N | 620.66E | ==> | 3552.33 | 1226818.33 | 3187123.19 |
| 11500.00 | 90.34 | 359.610 | 7532.84 | 3600.17N | 619.99E | ==> | 3651.28 | 1226918.33 | 3187122.52 |
| 11600.00 | 90.34 | 359.610 | 7532.24 | 3700.17N | 619.31E | ==> | 3750.22 | 1227018.32 | 3187121.85 |
| 11700.00 | 90.34 | 359.610 | 7531.65 | 3800.16N | 618.64E | ==> | 3849.17 | 1227118.31 | 3187121.17 |
| 11800.00 | 90.34 | 359.610 | 7531.05 | 3900.16N | 617.96E | ==> | 3948.12 | 1227218.30 | 3187120.50 |
| 11900.00 | 90.34 | 359.610 | 7530.46 | 4000.16N | 617.29E | ==> | 4047.06 | 1227318.30 | 3187119.82 |
| 12000.00 | 90.34 | 359.610 | 7529.86 | 4100.15N | 616.61E | ==> | 4146.01 | 1227418.29 | 3187119.15 |
| 12100.00 | 90.34 | 359.610 | 7529.26 | 4200.15N | 615.94E | ==> | 4244.96 | 1227518.28 | 3187118.47 |
| 12200.00 | 90.34 | 359.610 | 7528.67 | 4300.14N | 615.26E | ==> | 4343.91 | 1227618.28 | 3187117.80 |
| 12300.00 | 90.34 | 359.610 | 7528.07 | 4400.14N | 614.59E | ==> | 4442.85 | 1227718.27 | 3187117.12 |
| 12312.43 | 90.34 | 359.610 | 7528.00 | 4412.57N | 614.50E | ==> | 4455.16 | 1227730.70 | 3187117.04 |

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 7.930 degrees
Bottom hole distance is 4455.16 Feet on azimuth 7.93 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 24-3-4HN (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 | 7944.00 | 7554.00 | 44.32N | 643.97E |
| 6 1/8 | 7944.00 | 7554.00 | 44.32N | 643.97E | 12312.30 | 7528.00 | 4412.44N | 614.51E |

| 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 | 7944.00 | 7554.00 | 44.32N | 643.97E |
| 4 1/2in Production Liner | 7744.00 | 7520.62 | 151.84S | 641.59E | 12312.30 | 7528.00 | 4412.44N | 614.51E |

| Targets | | | | | | | | |
|-------------------------|-----------|----------|---------|-------------|---------------|------------|------------|--------------|
| Name | North[ft] | East[ft] | TVD[ft] | Latitude | Longitude | Northing | Easting | Last Revised |
| Schaefer 24-3-4HN-T1 | 44.87N | 638.97E | 7554.00 | 39.94458000 | -104.83254000 | 1223363.14 | 3187141.50 | 11-Feb-2014 |
| Schaefer 24-3-4HN-T2 | 4412.57N | 614.50E | 7528.00 | 39.95657000 | -104.83251000 | 1227730.70 | 3187117.04 | 11-Feb-2014 |

| Survey Tool Program | | | | | |
|---------------------|-------------|----------|---------|---------------|-------------|
| Reference | Survey Name | MD[ft] | TVD[ft] | Survey Tool | Error Model |
| 153300 | Planned | 12312.43 | 7528.00 | WdW Rate Gyro | Standard |

| Notes |
|-------|
| |



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Schaefer 24-3-4HN (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 24-3-4HN (PWB) | 11-Feb-2014 | 12-Feb-2014 |

| Well | | |
|-------------------|---------------|--------------|
| Name | Government ID | Last Revised |
| Schaefer 24-3-4HN | | 11-Feb-2014 |

| Slot | | | | | | |
|---------|---------------|--------------|-------------|---------------|-------|--------|
| Name | Grid Northing | Grid Easting | Latitude | Longitude | North | East |
| Slot #4 | 1223318.2656 | 3186502.5542 | 39.94447000 | -104.83482000 | 0.34S | 44.86W |

| 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 24-3-5HC | Schaefer 24-3-5HC (PWB) | Slot #5 | Schaefer | 14.02 | 1350.00 | 12307.22 | 11.15 | 1196.10 | 4.89 | 1196.10 |
| Schaefer 25-1-5HN | Schaefer 25-1-5HN (PWB) | Slot #13 | Schaefer | 15.09 | 1556.99 | 7373.42 | 11.95 | 1556.99 | 4.79 | 1573.40 |
| Schaefer 24-3-3HC | Schaefer 24-3-3HC (PWB) | Slot #3 | Schaefer | 16.82 | 1300.00 | 1300.00 | 13.96 | 1196.10 | 5.87 | 1196.10 |
| Schaefer 25-1-4HC | Schaefer 25-1-4HC (PWB) | Slot #12 | Schaefer | 16.83 | 1350.00 | 7517.31 | 8.54 | 7517.31 | 1.55 | 7528.12 |
| Schaefer 25-1-6HC | Schaefer 25-1-6HC (PWB) | Slot #14 | Schaefer | 26.74 | 1350.00 | 1350.00 | 23.88 | 1196.10 | 9.33 | 1196.10 |
| Schaefer 25-1-3HN | Schaefer 25-1-3HN (PWB) | Slot #11 | Schaefer | 26.75 | 1350.01 | 7424.48 | 23.88 | 1196.10 | 9.24 | 1450.00 |
| Schaefer 24-3-6HN | Schaefer 24-3-6HN (PWB) | Slot #6 | Schaefer | 28.04 | 1350.00 | 12308.10 | 25.17 | 1196.10 | 9.78 | 1196.10 |
| Schaefer 24-3-2HN | Schaefer 24-3-2HN (PWB) | Slot #2 | Schaefer | 30.84 | 1250.00 | 1250.00 | 27.98 | 1196.10 | 10.76 | 1196.10 |
| Schaefer 25-1-7HN | Schaefer 25-1-7HN (PWB) | Slot #15 | Schaefer | 39.26 | 1265.00 | 1265.00 | 36.39 | 1196.10 | 13.70 | 1196.10 |
| Schaefer | Schaefer | Slot #10 | Schaefer | 41.87 | 1300.00 | 1300.00 | 39.01 | 1196.10 | 14.61 | 1196.10 |

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Vertical Section is from 0.00N 0.00E on azimuth 7.930 degrees
Prepared by Integrated Petroleum Technologies, Inc.
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SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Schaefer 24-3-4HN (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] |
| 25-1-2HC | 25-1-2HC (PWB) | | | | | | | | | |
| Schaefer 24-3-1HC | Schaefer 24-3-1HC (PWB) | Slot #1 | Schaefer | 44.86 | 1200.00 | 1200.00 | 41.99 | 1200.00 | 15.62 | 1200.00 |
| Schaefer 24-3-7HC | Schaefer 24-3-7HC (PWB) | Slot #7 | Schaefer | 44.86 | 1300.00 | 12306.53 | 42.00 | 1196.10 | 15.65 | 1196.10 |
| Schaefer 25-1-8HC | Schaefer 25-1-8HC (PWB) | Slot #16 | Schaefer | 52.53 | 1215.00 | 1215.00 | 49.67 | 1196.10 | 18.33 | 1196.10 |
| Schaefer 25-1-1HN | Schaefer 25-1-1HN (PWB) | Slot #9 | Schaefer | 55.23 | 1250.00 | 1250.00 | 52.36 | 1196.10 | 19.27 | 1196.10 |
| Schaefer 24-3-8HN | Schaefer 24-3-8HN (PWB) | Slot #8 | Schaefer | 58.88 | 1250.00 | 1250.00 | 56.02 | 1196.10 | 20.54 | 1196.10 |
| W Letterly-Scott 1 | W Letterly-Scott 1 (AWB) | Letterly-Scott 1 | Offsets | 159.52 | 11235.47 | 11235.47 | 103.61 | 11235.47 | 2.84 | 11251.88 |
| Sharp #25-1-9HN | Sharp #25-1-9HN (PWB) | Slot #4 | Sharp Pad | 2218.63 | 7277.16 | 7277.16 | 2201.72 | 7282.06 | 131.02 | 7315.00 |
| SHARP #24-3-9HC | SHARP #24-3-9HC (PWB) | Slot #7 | Sharp Pad | 2234.55 | 7948.89 | 7948.89 | 2155.73 | 12301.75 | 27.38 | 12301.75 |
| Sharp #24-3-9HC | Sharp #24-3-9HC (PWB) | Slot #10 | Sharp Pad | 2234.55 | 7948.89 | 7948.89 | 2155.75 | 12301.75 | 27.39 | 12301.75 |