



# **US ROCKIES REGION PLANNING**

**KERR MCGEE OIL & GAS ONSHORE LP**

**WELD\_HOUSTON STATE 2 PAD**

**P\_HOUSTON STATE 31-16**

**P\_HOUSTON STATE 31-16**

**Plan: PLAN #1 09-02-09 RHS**

## **Standard Planning Report**

**02 September, 2009**





**P\_HOUSTON STATE 31-16**  
**KERR MCGEE OIL & GAS ONSHORE LP**  
**SECTION 16 T3N R67W**  
**1756 FNL 499 FWL**  
**LAT: 40° 13' 41.664 N**  
**LONG: 104° 54' 10.368 W**



Azimuths to True North  
Magnetic North: 9.13°  
Magnetic Field  
Strength: 53233.6nT  
Dip Angle: 66.96°  
Date: 9/2/2009  
Model: IGRF200510

**WELL DETAILS: P\_HOUSTON STATE 31-16**

| +N/-S | +E/-W | Northing   | Ground Level:<br>Easting | Latitude         | Longitude         | Slot |
|-------|-------|------------|--------------------------|------------------|-------------------|------|
| 0.00  | 0.00  | 1326551.19 | 3166724.18               | 40° 13' 41.664 N | 104° 54' 10.368 W |      |

**FORMATION TOP DETAILS**

| TVDPath | MDPath  | Formation  |
|---------|---------|------------|
| 3500.00 | 3580.25 | PARKMAN    |
| 4050.00 | 4133.69 | SUSSEX TOP |
| 6529.00 | 6612.69 | NIO A TOP  |
| 7090.00 | 7173.69 | CODELL TOP |

**SECTION DETAILS**

| MD      | Inc   | Azi    | TVD     | +N/-S  | +E/-W   | DLeg | TFace  | VSoc   | Target  |
|---------|-------|--------|---------|--------|---------|------|--------|--------|---|
| 0.00    | 0.00  | 0.00   | 0.00    | 0.00   | 0.00    | 0.00 | 0.00   | 0.00   |   |
| 750.00  | 0.00  | 0.00   | 750.00  | 0.00   | 0.00    | 0.00 | 0.00   | 0.00   |   |
| 1514.24 | 15.28 | 318.86 | 1505.21 | 76.31  | -66.67  | 2.00 | 318.86 | 101.34 |   |
| 3369.45 | 15.28 | 318.86 | 3294.79 | 444.62 | -388.44 | 0.00 | 0.00   | 590.40 |   |
| 4133.69 | 0.00  | 0.00   | 4050.00 | 520.93 | -455.11 | 2.00 | 180.00 | 691.74 |   |
| 7333.69 | 0.00  | 0.00   | 7250.00 | 520.93 | -455.11 | 0.00 | 0.00   | 691.74 | PBHL_HOUSTON STATE 31-16(1756 FNL 499 FWL)50' TGT |

**CASING DETAILS**

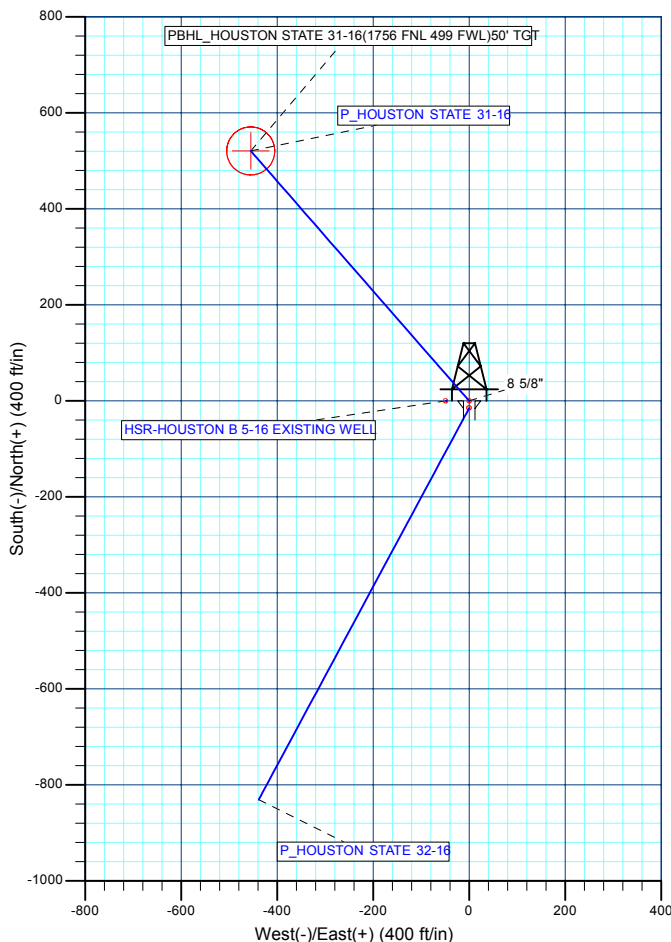
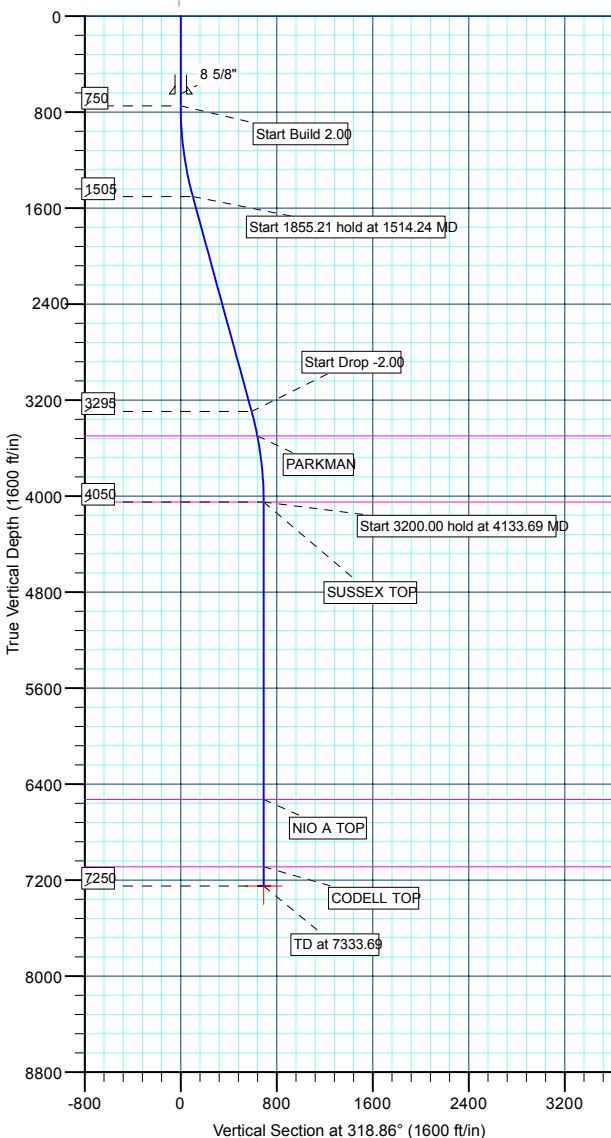
| TVD    | MD     | Name   | Size |
|--------|--------|--------|------|
| 650.00 | 650.00 | 8 5/8" | 8.62 |

**WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)**

| Name | TVD     | +N/-S  | +E/-W   | Northing   | Easting    | Latitude         | Longitude         | Shape                  |
|------|---------|--------|---------|------------|------------|------------------|-------------------|------------------------|
| PBHL | 7250.00 | 520.93 | -455.11 | 1327069.04 | 3166265.57 | 40° 13' 46.812 N | 104° 54' 16.236 W | Circle (Radius: 50.00) |



KB ELEV: WELL @ 4748.00ft (Original Well Elev)  
GRD ELEV: 4733.00



Plan: PLAN #1 09-02-09 RHS (P\_HOUSTON STATE 31-16/P\_HOUSTON STATE 31-16)

Created By: Robert H. Scott



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_HOUSTON STATE 2 PAD        | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_HOUSTON STATE 31-16           |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-02-09 RHS            |                                     |                                       |

|                    |  |                      |                |
|--------------------|--|----------------------|----------------|
| <b>Project</b>     | KERR MCGEE OIL & GAS ONSHORE LP, KERR MCGEE OIL & GAS ONSHORE LP |                      |                |
| <b>Map System:</b> | US State Plane 1983  | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983  |                      |                |
| <b>Map Zone:</b>   | Colorado Northern Zone   |                      |                |

|                       |          |   |                |                   |                   |
|-----------------------|----------|---|----------------|-------------------|-------------------|
| Site                  |          | WELD_HOUSTON STATE 2 PAD, SECTION 16 T3N R67W |                |                   |                   |
| Site Position:        |          | Northing:                                     | 1,326,551.19ft | Latitude:         | 40° 13' 41.664 N  |
| From:                 | Lat/Long | Easting:                                      | 3,166,724.18ft | Longitude:        | 104° 54' 10.368 W |
| Position Uncertainty: | 0.00 ft  | Slot Radius:                                  | in             | Grid Convergence: | 0.39 °            |

| Well                 | P_HOUSTON STATE 31-16 |         |                     |                 |               |                   |
|----------------------|-----------------------|---------|---------------------|-----------------|---------------|-------------------|
| Well Position        | +N/-S                 | 0.00 ft | Northing:           | 1,326,551.19 ft | Latitude:     | 40° 13' 41.664 N  |
|                      | +E/-W                 | 0.00 ft | Easting:            | 3,166,724.18 ft | Longitude:    | 104° 54' 10.368 W |
| Position Uncertainty |                       | 0.00 ft | Wellhead Elevation: | ft              | Ground Level: | 4,733.00 ft       |

|                  |                       |                    |                        |                      |                            |
|------------------|-----------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | P_HOUSTON STATE 31-16 |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b>     | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF200510            | 9/2/2009           | 9.13                   | 66.96                | 53,234                     |

|                          |                              |                   |                      |                      |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| <b>Design</b>            | PLAN #1 09-02-09 RHS         |                   |                      |                      |
| <b>Audit Notes:</b>      |                              |                   |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                | PLAN              | <b>Tie On Depth:</b> | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (ft)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b>    | <b>Direction (°)</b> |
|                          | 0.00                         | 0.00              | 0.00                 | 318.86               |

| <b>Plan Sections</b> |                 |             |                     |            |            |                       |                      |                     |         |                |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|----------------|
| Measured Depth (ft)  | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target         |
| 0.00                 | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.00    |                |
| 750.00               | 0.00            | 0.00        | 750.00              | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.00    |                |
| 1,514.24             | 15.28           | 318.86      | 1,505.21            | 76.31      | -66.67     | 2.00                  | 2.00                 | 0.00                | 318.86  |                |
| 3,369.45             | 15.28           | 318.86      | 3,294.79            | 444.62     | -388.44    | 0.00                  | 0.00                 | 0.00                | 0.00    |                |
| 4,133.69             | 0.00            | 0.00        | 4,050.00            | 520.93     | -455.11    | 2.00                  | -2.00                | 0.00                | 180.00  |                |
| 7,333.69             | 0.00            | 0.00        | 7,250.00            | 520.93     | -455.11    | 0.00                  | 0.00                 | 0.00                | 0.00    | PBHL_HOUSTON : |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_HOUSTON STATE 2 PAD        | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_HOUSTON STATE 31-16           |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-02-09 RHS            |                                     |                                       |

**Planned Survey**

| Measured Depth (ft)                                  | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| <b>Start Build 2.00</b>                              |                 |             |                     |            |            |                       |                       |                      |                     |
| 750.00   | 0.00            | 0.00        | 750.00              | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 800.00   | 1.00            | 318.86      | 800.00              | 0.33       | -0.29      | 0.44                  | 2.00                  | 2.00                 | 0.00                |
| 900.00   | 3.00            | 318.86      | 899.93              | 2.96       | -2.58      | 3.93                  | 2.00                  | 2.00                 | 0.00                |
| 1,000.00   | 5.00            | 318.86      | 999.68              | 8.21       | -7.17      | 10.90                 | 2.00                  | 2.00                 | 0.00                |
| 1,100.00   | 7.00            | 318.86      | 1,099.13            | 16.08      | -14.05     | 21.35                 | 2.00                  | 2.00                 | 0.00                |
| 1,200.00   | 9.00            | 318.86      | 1,198.15            | 26.56      | -23.21     | 35.27                 | 2.00                  | 2.00                 | 0.00                |
| 1,300.00   | 11.00           | 318.86      | 1,296.63            | 39.64      | -34.63     | 52.63                 | 2.00                  | 2.00                 | 0.00                |
| 1,400.00   | 13.00           | 318.86      | 1,394.44            | 55.29      | -48.31     | 73.42                 | 2.00                  | 2.00                 | 0.00                |
| 1,500.00   | 15.00           | 318.86      | 1,491.46            | 73.51      | -64.22     | 97.62                 | 2.00                  | 2.00                 | 0.00                |
| <b>Start 1855.21 hold at 1514.24 MD</b>              |                 |             |                     |            |            |                       |                       |                      |                     |
| 1,514.24   | 15.28           | 318.86      | 1,505.21            | 76.31      | -66.67     | 101.34                | 2.00                  | 2.00                 | 0.00                |
| 1,600.00   | 15.28           | 318.86      | 1,587.93            | 93.34      | -81.55     | 123.94                | 0.00                  | 0.00                 | 0.00                |
| 1,700.00   | 15.28           | 318.86      | 1,684.40            | 113.19     | -98.89     | 150.30                | 0.00                  | 0.00                 | 0.00                |
| 1,800.00   | 15.28           | 318.86      | 1,780.86            | 133.04     | -116.23    | 176.67                | 0.00                  | 0.00                 | 0.00                |
| 1,900.00   | 15.28           | 318.86      | 1,877.32            | 152.90     | -133.58    | 203.03                | 0.00                  | 0.00                 | 0.00                |
| 2,000.00   | 15.28           | 318.86      | 1,973.78            | 172.75     | -150.92    | 229.39                | 0.00                  | 0.00                 | 0.00                |
| 2,100.00   | 15.28           | 318.86      | 2,070.25            | 192.60     | -168.27    | 255.75                | 0.00                  | 0.00                 | 0.00                |
| 2,200.00   | 15.28           | 318.86      | 2,166.71            | 212.45     | -185.61    | 282.11                | 0.00                  | 0.00                 | 0.00                |
| 2,300.00   | 15.28           | 318.86      | 2,263.17            | 232.31     | -202.95    | 308.48                | 0.00                  | 0.00                 | 0.00                |
| 2,400.00   | 15.28           | 318.86      | 2,359.64            | 252.16     | -220.30    | 334.84                | 0.00                  | 0.00                 | 0.00                |
| 2,500.00   | 15.28           | 318.86      | 2,456.10            | 272.01     | -237.64    | 361.20                | 0.00                  | 0.00                 | 0.00                |
| 2,600.00   | 15.28           | 318.86      | 2,552.56            | 291.86     | -254.99    | 387.56                | 0.00                  | 0.00                 | 0.00                |
| 2,700.00   | 15.28           | 318.86      | 2,649.02            | 311.72     | -272.33    | 413.92                | 0.00                  | 0.00                 | 0.00                |
| 2,800.00   | 15.28           | 318.86      | 2,745.49            | 331.57     | -289.68    | 440.28                | 0.00                  | 0.00                 | 0.00                |
| 2,900.00   | 15.28           | 318.86      | 2,841.95            | 351.42     | -307.02    | 466.65                | 0.00                  | 0.00                 | 0.00                |
| 3,000.00   | 15.28           | 318.86      | 2,938.41            | 371.27     | -324.36    | 493.01                | 0.00                  | 0.00                 | 0.00                |
| 3,100.00   | 15.28           | 318.86      | 3,034.87            | 391.13     | -341.71    | 519.37                | 0.00                  | 0.00                 | 0.00                |
| 3,200.00   | 15.28           | 318.86      | 3,131.34            | 410.98     | -359.05    | 545.73                | 0.00                  | 0.00                 | 0.00                |
| 3,300.00   | 15.28           | 318.86      | 3,227.80            | 430.83     | -376.40    | 572.09                | 0.00                  | 0.00                 | 0.00                |
| <b>Start Drop -2.00</b>                              |                 |             |                     |            |            |                       |                       |                      |                     |
| 3,369.45   | 15.28           | 318.86      | 3,294.79            | 444.62     | -388.44    | 590.40                | 0.00                  | 0.00                 | 0.00                |
| 3,400.00   | 14.67           | 318.86      | 3,324.31            | 450.57     | -393.64    | 598.30                | 2.00                  | -2.00                | 0.00                |
| 3,500.00   | 12.67           | 318.86      | 3,421.47            | 468.37     | -409.19    | 621.94                | 2.00                  | -2.00                | 0.00                |
| <b>PARKMAN</b>                                       |                 |             |                     |            |            |                       |                       |                      |                     |
| 3,580.25   | 11.07           | 318.86      | 3,500.00            | 480.80     | -420.05    | 638.44                | 2.00                  | -2.00                | 0.00                |
| 3,600.00   | 10.67           | 318.86      | 3,519.39            | 483.60     | -422.50    | 642.17                | 2.00                  | -2.00                | 0.00                |
| 3,700.00   | 8.67            | 318.86      | 3,617.97            | 496.26     | -433.56    | 658.97                | 2.00                  | -2.00                | 0.00                |
| 3,800.00   | 6.67            | 318.86      | 3,717.07            | 506.31     | -442.34    | 672.32                | 2.00                  | -2.00                | 0.00                |
| 3,900.00   | 4.67            | 318.86      | 3,816.57            | 513.76     | -448.85    | 682.21                | 2.00                  | -2.00                | 0.00                |
| 4,000.00   | 2.67            | 318.86      | 3,916.36            | 518.58     | -453.06    | 688.62                | 2.00                  | -2.00                | 0.00                |
| 4,100.00   | 0.67            | 318.86      | 4,016.31            | 520.78     | -454.98    | 691.54                | 2.00                  | -2.00                | 0.00                |
| <b>Start 3200.00 hold at 4133.69 MD - SUSSEX TOP</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 4,133.69   | 0.00            | 0.00        | 4,050.00            | 520.93     | -455.11    | 691.74                | 2.00                  | -2.00                | 122.12              |
| 4,200.00   | 0.00            | 0.00        | 4,116.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,300.00   | 0.00            | 0.00        | 4,216.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,400.00   | 0.00            | 0.00        | 4,316.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,500.00   | 0.00            | 0.00        | 4,416.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,600.00   | 0.00            | 0.00        | 4,516.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,700.00   | 0.00            | 0.00        | 4,616.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,800.00   | 0.00            | 0.00        | 4,716.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 4,900.00   | 0.00            | 0.00        | 4,816.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,000.00   | 0.00            | 0.00        | 4,916.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_HOUSTON STATE 2 PAD        | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_HOUSTON STATE 31-16           |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-02-09 RHS            |                                     |                                       |

#### Planned Survey

| Measured Depth (ft)                                      | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 5,100.00   | 0.00            | 0.00        | 5,016.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,200.00   | 0.00            | 0.00        | 5,116.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,300.00   | 0.00            | 0.00        | 5,216.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,400.00   | 0.00            | 0.00        | 5,316.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,500.00   | 0.00            | 0.00        | 5,416.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,600.00   | 0.00            | 0.00        | 5,516.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,700.00   | 0.00            | 0.00        | 5,616.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,800.00   | 0.00            | 0.00        | 5,716.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 5,900.00   | 0.00            | 0.00        | 5,816.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,000.00   | 0.00            | 0.00        | 5,916.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,100.00   | 0.00            | 0.00        | 6,016.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,200.00   | 0.00            | 0.00        | 6,116.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,300.00   | 0.00            | 0.00        | 6,216.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,400.00   | 0.00            | 0.00        | 6,316.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,500.00   | 0.00            | 0.00        | 6,416.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,600.00   | 0.00            | 0.00        | 6,516.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| <b>NIO A TOP</b>   |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,612.69   | 0.00            | 0.00        | 6,529.00            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,700.00   | 0.00            | 0.00        | 6,616.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,800.00   | 0.00            | 0.00        | 6,716.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 6,900.00   | 0.00            | 0.00        | 6,816.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 7,000.00   | 0.00            | 0.00        | 6,916.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 7,100.00   | 0.00            | 0.00        | 7,016.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| <b>CODELL TOP</b>  |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,173.69   | 0.00            | 0.00        | 7,090.00            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 7,200.00   | 0.00            | 0.00        | 7,116.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| 7,300.00   | 0.00            | 0.00        | 7,216.31            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |
| <b>PBHL_HOUSTON STATE 31-16(1756 FNL 499 FWL)50' TGT</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,333.69   | 0.00            | 0.00        | 7,250.00            | 520.93     | -455.11    | 691.74                | 0.00                  | 0.00                 | 0.00                |

#### Design Targets

| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude         | Longitude         |
|---------------------------|---------------|--------------|----------|------------|------------|---------------|--------------|------------------|-------------------|
| - hit/miss target         |               |              |          |            |            |               |              |                  |                   |
| - Shape                   |               |              |          |            |            |               |              |                  |                   |
| PBHL_HOUSTON ST           | 0.00          | 0.00         | 7,250.00 | 520.93     | -455.11    | 1,327,069.04  | 3,166,265.57 | 40° 13' 46.812 N | 104° 54' 16.236 W |
| - plan hits target center |               |              |          |            |            |               |              |                  |                   |
| - Circle (radius 50.00)   |               |              |          |            |            |               |              |                  |                   |

#### Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name   | Casing Diameter (in) | Hole Diameter (in) |
|---------------------|---------------------|--------|----------------------|--------------------|
| 650.00              | 650.00              | 8 5/8" | 8.62                 | 11.00              |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_HOUSTON STATE 2 PAD        | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_HOUSTON STATE 31-16           |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-02-09 RHS            |                                     |                                       |

#### Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name       | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|------------|-----------|---------|-------------------|
| 3,580.25            | 3,500.00            | PARKMAN    |           |         |                   |
| 4,133.69            | 4,050.00            | SUSSEX TOP |           |         |                   |
| 6,612.69            | 6,529.00            | NIO A TOP  |           |         |                   |
| 7,173.69            | 7,090.00            | CODELL TOP |           |         |                   |

#### Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                          |
|---------------------|---------------------|-------------------|------------|----------------------------------|
|                     |                     | +N/-S (ft)        | +E/-W (ft) |                                  |
| 750.00              | 750.00              | 0.00              | 0.00       | Start Build 2.00                 |
| 1,514.24            | 1,505.21            | 76.31             | -66.67     | Start 1855.21 hold at 1514.24 MD |
| 3,369.45            | 3,294.79            | 444.62            | -388.44    | Start Drop -2.00                 |
| 4,133.69            | 4,050.00            | 520.93            | -455.11    | Start 3200.00 hold at 4133.69 MD |
| 7,333.69            | 7,250.00            | 520.93            | -455.11    | TD at 7333.69                    |



# **US ROCKIES REGION PLANNING**

**KERR MCGEE OIL & GAS ONSHORE LP  
WELD\_HOUSTON STATE 2 PAD  
P\_HOUSTON STATE 31-16**

**P\_HOUSTON STATE 31-16  
PLAN #1 09-02-09 RHS**

## **Anticollision Report**

**02 September, 2009**





|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

|                                     |   |                       |                     |
|-------------------------------------|---|-----------------------|---------------------|
| <b>Reference</b>                    | PLAN #1 09-02-09 RHS  |                       |                     |
| <b>Filter type:</b>                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                       |                     |
| <b>Interpolation Method:</b>        | Stations  | <b>Error Model:</b>   | ISCWSA              |
| <b>Depth Range:</b>                 | 0.00 to 20,000.00ft   | <b>Scan Method:</b>   | Closest Approach 3D |
| <b>Results Limited by:</b>          | Maximum center-center distance of 10,000.00ft                       | <b>Error Surface:</b> | Elliptical Conic    |
| <b>Warning Levels Evaluated at:</b> | 2.00 Sigma  |                       |                     |

|                            |                      |                                   |                  |                    |
|----------------------------|----------------------|-----------------------------------|------------------|--------------------|
| <b>Survey Tool Program</b> | <b>Date</b> 9/2/2009 |                                   |                  |                    |
| <b>From (ft)</b>           | <b>To (ft)</b>       | <b>Survey (Wellbore)</b>          | <b>Tool Name</b> | <b>Description</b> |
| 0.00                       | 7,333.69             | PLAN #1 09-02-09 RHS (P_HOUSTON S | MWD              | MWD - Standard     |

|  |                                      |                                   |                                      |                                       |                          |                 |
|--|--------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|--------------------------|-----------------|
| <b>Summary</b>                               |                                      |                                   |                                      |                                       |                          |                 |
| <b>Site Name</b>                             | <b>Reference Measured Depth (ft)</b> | <b>Offset Measured Depth (ft)</b> | <b>Distance Between Centres (ft)</b> | <b>Distance Between Ellipses (ft)</b> | <b>Separation Factor</b> | <b>Warning</b>  |
| <b>Offset Well - Wellbore - Design</b>       |                                      |                                   |                                      |                                       |                          |                 |
| WELD_HOUSTON STATE 2 PAD                     |                                      |                                   |                                      |                                       |                          |                 |
| HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUST | 1,180.62                             | 1,179.00                          | 36.86                                | -10.59                                | 0.777                    | Level 1, CC     |
| HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUST | 1,200.00                             | 1,198.15                          | 36.98                                | -11.29                                | 0.766                    | Level 1, ES, SF |
| P_HOUSTON STATE 32-16 - P_HOUSTON STATE 32-  | 750.00                               | 750.00                            | 14.58                                | 11.47                                 | 4.685                    | CC, ES          |
| P_HOUSTON STATE 32-16 - P_HOUSTON STATE 32-  | 800.00                               | 799.77                            | 15.30                                | 11.97                                 | 4.604                    | SF              |

|   |                            |                            |                            |                       |                    |                              |  |                   |                             |                              |                                |                          |                           |         |
|---|----------------------------|----------------------------|----------------------------|-----------------------|--------------------|------------------------------|--|-------------------|-----------------------------|------------------------------|--------------------------------|--------------------------|---------------------------|---------|
| <b>Offset Design</b> WELD_HOUSTON STATE 2 PAD - HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUSTON B 5-16 |                            |                            |                            |                       |                    |                              |  |                   |                             |                              |                                |                          | <b>Offset Site Error:</b> | 0.00 ft |
| <b>Survey Program:</b> 0-UNKNOWN  |                            |                            |                            |                       |                    |                              |  |                   |                             |                              |                                |                          | <b>Offset Well Error:</b> | 0.00 ft |
| <b>Reference</b>  | <b>Offset</b>              | <b>Semi Major Axis</b>     |                            |                       | <b>Distance</b>    |                              |  |                   |                             |                              |                                |                          |                           |         |
| <b>Measured Depth (ft)</b>  | <b>Vertical Depth (ft)</b> | <b>Measured Depth (ft)</b> | <b>Vertical Depth (ft)</b> | <b>Reference (ft)</b> | <b>Offset (ft)</b> | <b>Highside Toolface (°)</b> | <b>Offset Wellbore Centre +N/-S (ft)</b> | <b>+E/-W (ft)</b> | <b>Between Centres (ft)</b> | <b>Between Ellipses (ft)</b> | <b>Minimum Separation (ft)</b> | <b>Separation Factor</b> | <b>Warning</b>            |         |
| 0.00  | 0.00                       | 0.00                       | 0.00                       | 0.00                  | 0.00               | -89.91                       | 0.08                                     | -49.01            | 49.01                       |                              |                                |                          |                           |         |
| 100.00  | 100.00                     | 100.00                     | 100.00                     | 0.10                  | 1.70               | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 47.21                        | 1.80                           | 27.295                   |                           |         |
| 200.00  | 200.00                     | 200.00                     | 200.00                     | 0.32                  | 5.70               | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 42.99                        | 6.02                           | 8.141                    |                           |         |
| 300.00  | 300.00                     | 300.00                     | 300.00                     | 0.55                  | 9.70               | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 38.76                        | 10.25                          | 4.784                    |                           |         |
| 400.00  | 400.00                     | 400.00                     | 400.00                     | 0.77                  | 13.70              | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 34.54                        | 14.47                          | 3.387                    |                           |         |
| 500.00  | 500.00                     | 500.00                     | 500.00                     | 0.99                  | 17.70              | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 30.31                        | 18.69                          | 2.622                    |                           |         |
| 600.00  | 600.00                     | 600.00                     | 600.00                     | 1.22                  | 21.70              | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 26.09                        | 22.92                          | 2.138                    |                           |         |
| 700.00  | 700.00                     | 700.00                     | 700.00                     | 1.44                  | 25.70              | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 21.87                        | 27.14                          | 1.806                    |                           |         |
| 750.00  | 750.00                     | 750.00                     | 750.00                     | 1.56                  | 27.70              | -89.91                       | 0.08                                     | -49.01            | 49.01                       | 19.75                        | 29.26                          | 1.675                    |                           |         |
| 800.00  | 800.00                     | 800.00                     | 800.00                     | 1.67                  | 29.70              | -49.16                       | 0.08                                     | -49.01            | 48.72                       | 17.36                        | 31.36                          | 1.553                    |                           |         |
| 900.00  | 899.93                     | 899.93                     | 899.93                     | 1.89                  | 33.70              | -52.44                       | 0.08                                     | -49.01            | 46.52                       | 10.95                        | 35.56                          | 1.308                    | Level 3                   |         |
| 1,000.00  | 999.68                     | 999.68                     | 999.68                     | 2.12                  | 37.69              | -59.95                       | 0.08                                     | -49.01            | 42.62                       | 2.86                         | 39.76                          | 1.072                    | Level 2                   |         |
| 1,100.00  | 1,099.13                   | 1,099.13                   | 1,099.13                   | 2.36                  | 41.67              | -73.57                       | 0.08                                     | -49.01            | 38.45                       | -5.55                        | 43.99                          | 0.874                    | Level 1                   |         |
| 1,180.62  | 1,179.00                   | 1,179.00                   | 1,179.00                   | 2.58                  | 44.86              | -90.00                       | 0.08                                     | -49.01            | 36.86                       | -10.59                       | 47.45                          | 0.777                    | Level 1, CC               |         |
| 1,200.00  | 1,198.15                   | 1,198.15                   | 1,198.15                   | 2.63                  | 45.63              | -94.55                       | 0.08                                     | -49.01            | 36.98                       | -11.29                       | 48.27                          | 0.766                    | Level 1, ES, SF           |         |
| 1,300.00  | 1,296.63                   | 1,296.63                   | 1,296.63                   | 2.93                  | 49.57              | -118.43                      | 0.08                                     | -49.01            | 42.09                       | -10.21                       | 52.31                          | 0.805                    | Level 1                   |         |
| 1,400.00  | 1,394.44                   | 1,394.44                   | 1,394.44                   | 3.28                  | 53.48              | -137.39                      | 0.08                                     | -49.01            | 55.22                       | -0.72                        | 55.94                          | 0.987                    | Level 1                   |         |
| 1,500.00  | 1,491.46                   | 1,491.46                   | 1,491.46                   | 3.69                  | 57.36              | -149.71                      | 0.08                                     | -49.01            | 74.99                       | 15.64                        | 59.35                          | 1.264                    | Level 3                   |         |
| 1,514.24  | 1,505.21                   | 1,505.21                   | 1,505.21                   | 3.75                  | 57.91              | -151.04                      | 0.08                                     | -49.01            | 78.25                       | 18.43                        | 59.82                          | 1.308                    | Level 3                   |         |
| 1,600.00  | 1,587.93                   | 1,587.93                   | 1,587.93                   | 4.14                  | 61.22              | -157.37                      | 0.08                                     | -49.01            | 98.77                       | 35.71                        | 63.06                          | 1.566                    |                           |         |
| 1,700.00  | 1,684.40                   | 1,684.40                   | 1,684.40                   | 4.61                  | 65.08              | -162.06                      | 0.08                                     | -49.01            | 123.62                      | 56.69                        | 66.93                          | 1.847                    |                           |         |
| 1,800.00  | 1,780.86                   | 1,780.86                   | 1,780.86                   | 5.10                  | 68.93              | -165.18                      | 0.08                                     | -49.01            | 148.99                      | 78.15                        | 70.85                          | 2.103                    |                           |         |
| 1,900.00  | 1,877.32                   | 1,877.32                   | 1,877.32                   | 5.60                  | 72.79              | -167.39                      | 0.08                                     | -49.01            | 174.66                      | 99.86                        | 74.79                          | 2.335                    |                           |         |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_HOUSTON STATE 2 PAD - HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUSTON B 5-16 |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-UNKNOWN  |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Reference  |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |                       |                         |                    | Warning |
| Measured Depth (ft)  | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  |         |
| 2,000.00   | 1,973.78            | 1,973.78            | 1,973.78            | 6.11            | 76.65       | -169.03               | 0.08                              | -49.01     | 200.50               | 121.75                | 78.76                   | 2.546              |         |
| 2,100.00   | 2,070.25            | 2,070.25            | 2,070.25            | 6.62            | 80.51       | -170.30               | 0.08                              | -49.01     | 226.47               | 143.74                | 82.73                   | 2.737              |         |
| 2,200.00   | 2,166.71            | 2,166.71            | 2,166.71            | 7.14            | 84.37       | -171.30               | 0.08                              | -49.01     | 252.51               | 165.80                | 86.71                   | 2.912              |         |
| 2,300.00   | 2,263.17            | 2,263.17            | 2,263.17            | 7.67            | 88.23       | -172.12               | 0.08                              | -49.01     | 278.62               | 187.92                | 90.70                   | 3.072              |         |
| 2,400.00   | 2,359.64            | 2,359.64            | 2,359.64            | 8.19            | 92.09       | -172.80               | 0.08                              | -49.01     | 304.77               | 210.08                | 94.69                   | 3.219              |         |
| 2,500.00   | 2,456.10            | 2,456.10            | 2,456.10            | 8.72            | 95.94       | -173.37               | 0.08                              | -49.01     | 330.95               | 232.27                | 98.68                   | 3.354              |         |
| 2,600.00   | 2,552.56            | 2,552.56            | 2,552.56            | 9.26            | 99.80       | -173.86               | 0.08                              | -49.01     | 357.16               | 254.48                | 102.68                  | 3.478              |         |
| 2,700.00   | 2,649.02            | 2,649.02            | 2,649.02            | 9.79            | 103.66      | -174.28               | 0.08                              | -49.01     | 383.39               | 276.71                | 106.68                  | 3.594              |         |
| 2,800.00   | 2,745.49            | 2,745.49            | 2,745.49            | 10.33           | 107.52      | -174.65               | 0.08                              | -49.01     | 409.64               | 298.96                | 110.68                  | 3.701              |         |
| 2,900.00   | 2,841.95            | 2,841.95            | 2,841.95            | 10.87           | 111.38      | -174.97               | 0.08                              | -49.01     | 435.90               | 321.22                | 114.68                  | 3.801              |         |
| 3,000.00   | 2,938.41            | 2,938.41            | 2,938.41            | 11.41           | 115.24      | -175.26               | 0.08                              | -49.01     | 462.18               | 343.49                | 118.69                  | 3.894              |         |
| 3,100.00   | 3,034.87            | 3,034.87            | 3,034.87            | 11.95           | 119.09      | -175.51               | 0.08                              | -49.01     | 488.46               | 365.77                | 122.69                  | 3.981              |         |
| 3,200.00   | 3,131.34            | 3,131.34            | 3,131.34            | 12.49           | 122.95      | -175.74               | 0.08                              | -49.01     | 514.75               | 388.05                | 126.69                  | 4.063              |         |
| 3,300.00   | 3,227.80            | 3,227.80            | 3,227.80            | 13.03           | 126.81      | -175.95               | 0.08                              | -49.01     | 541.05               | 410.35                | 130.70                  | 4.140              |         |
| 3,369.45   | 3,294.79            | 3,294.79            | 3,294.79            | 13.40           | 129.49      | -176.08               | 0.08                              | -49.01     | 559.31               | 425.83                | 133.48                  | 4.190              |         |
| 3,400.00   | 3,324.31            | 3,324.31            | 3,324.31            | 13.55           | 130.67      | -176.15               | 0.08                              | -49.01     | 567.19               | 432.14                | 135.05                  | 4.200              |         |
| 3,500.00   | 3,421.47            | 3,421.47            | 3,421.47            | 13.94           | 134.56      | -176.33               | 0.08                              | -49.01     | 590.78               | 450.69                | 140.10                  | 4.217              |         |
| 3,600.00   | 3,519.39            | 3,519.39            | 3,519.39            | 14.29           | 138.48      | -176.48               | 0.08                              | -49.01     | 610.98               | 465.89                | 145.09                  | 4.211              |         |
| 3,700.00   | 3,617.97            | 3,617.97            | 3,617.97            | 14.61           | 142.42      | -176.60               | 0.08                              | -49.01     | 627.75               | 477.75                | 150.00                  | 4.185              |         |
| 3,800.00   | 3,717.07            | 3,717.07            | 3,717.07            | 14.88           | 146.38      | -176.68               | 0.08                              | -49.01     | 641.08               | 486.30                | 154.78                  | 4.142              |         |
| 3,900.00   | 3,816.57            | 3,816.57            | 3,816.57            | 15.10           | 150.36      | -176.74               | 0.08                              | -49.01     | 650.95               | 491.55                | 159.40                  | 4.084              |         |
| 4,000.00   | 3,916.36            | 3,916.36            | 3,916.36            | 15.29           | 154.35      | -176.78               | 0.08                              | -49.01     | 657.35               | 493.48                | 163.86                  | 4.012              |         |
| 4,100.00   | 4,016.31            | 4,016.31            | 4,016.31            | 15.43           | 158.35      | -176.80               | 0.08                              | -49.01     | 660.26               | 492.13                | 168.13                  | 3.927              |         |
| 4,133.69   | 4,050.00            | 4,050.00            | 4,050.00            | 15.47           | 159.70      | 142.06                | 0.08                              | -49.01     | 660.46               | 490.94                | 169.52                  | 3.896              |         |
| 4,200.00   | 4,116.31            | 4,116.31            | 4,116.31            | 15.54           | 162.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 488.17                | 172.29                  | 3.833              |         |
| 4,300.00   | 4,216.31            | 4,216.31            | 4,216.31            | 15.67           | 166.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 483.98                | 176.48                  | 3.742              |         |
| 4,400.00   | 4,316.31            | 4,316.31            | 4,316.31            | 15.79           | 170.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 479.79                | 180.67                  | 3.656              |         |
| 4,500.00   | 4,416.31            | 4,416.31            | 4,416.31            | 15.92           | 174.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 475.59                | 184.87                  | 3.573              |         |
| 4,600.00   | 4,516.31            | 4,516.31            | 4,516.31            | 16.05           | 178.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 471.40                | 189.06                  | 3.493              |         |
| 4,700.00   | 4,616.31            | 4,616.31            | 4,616.31            | 16.19           | 182.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 467.20                | 193.26                  | 3.418              |         |
| 4,800.00   | 4,716.31            | 4,716.31            | 4,716.31            | 16.32           | 186.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 463.01                | 197.45                  | 3.345              |         |
| 4,900.00   | 4,816.31            | 4,816.31            | 4,816.31            | 16.46           | 190.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 458.81                | 201.65                  | 3.275              |         |
| 5,000.00   | 4,916.31            | 4,916.31            | 4,916.31            | 16.60           | 194.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 454.61                | 205.85                  | 3.208              |         |
| 5,100.00   | 5,016.31            | 5,016.31            | 5,016.31            | 16.74           | 198.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 450.41                | 210.05                  | 3.144              |         |
| 5,200.00   | 5,116.31            | 5,116.31            | 5,116.31            | 16.88           | 202.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 446.21                | 214.25                  | 3.083              |         |
| 5,300.00   | 5,216.31            | 5,216.31            | 5,216.31            | 17.03           | 206.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 442.01                | 218.45                  | 3.023              |         |
| 5,400.00   | 5,316.31            | 5,316.31            | 5,316.31            | 17.17           | 210.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 437.81                | 222.65                  | 2.966              |         |
| 5,500.00   | 5,416.31            | 5,416.31            | 5,416.31            | 17.32           | 214.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 433.61                | 226.85                  | 2.911              |         |
| 5,600.00   | 5,516.31            | 5,516.31            | 5,516.31            | 17.47           | 218.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 429.40                | 231.06                  | 2.858              |         |
| 5,700.00   | 5,616.31            | 5,616.31            | 5,616.31            | 17.62           | 222.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 425.20                | 235.26                  | 2.807              |         |
| 5,800.00   | 5,716.31            | 5,716.31            | 5,716.31            | 17.77           | 226.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 420.99                | 239.47                  | 2.758              |         |
| 5,900.00   | 5,816.31            | 5,816.31            | 5,816.31            | 17.93           | 230.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 416.79                | 243.67                  | 2.710              |         |
| 6,000.00   | 5,916.31            | 5,916.31            | 5,916.31            | 18.08           | 234.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 412.58                | 247.88                  | 2.664              |         |
| 6,100.00   | 6,016.31            | 6,016.31            | 6,016.31            | 18.24           | 238.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 408.38                | 252.09                  | 2.620              |         |
| 6,200.00   | 6,116.31            | 6,116.31            | 6,116.31            | 18.40           | 242.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 404.17                | 256.29                  | 2.577              |         |
| 6,300.00   | 6,216.31            | 6,216.31            | 6,216.31            | 18.56           | 246.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 399.96                | 260.50                  | 2.535              |         |
| 6,400.00   | 6,316.31            | 6,316.31            | 6,316.31            | 18.72           | 250.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 395.75                | 264.71                  | 2.495              |         |
| 6,500.00   | 6,416.31            | 6,416.31            | 6,416.31            | 18.88           | 254.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 391.54                | 268.92                  | 2.456              |         |
| 6,600.00   | 6,516.31            | 6,516.31            | 6,516.31            | 19.05           | 258.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 387.33                | 273.13                  | 2.418              |         |
| 6,700.00   | 6,616.31            | 6,616.31            | 6,616.31            | 19.21           | 262.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 383.12                | 277.34                  | 2.381              |         |
| 6,800.00   | 6,716.31            | 6,716.31            | 6,716.31            | 19.38           | 266.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 378.91                | 281.55                  | 2.346              |         |
| 6,900.00   | 6,816.31            | 6,816.31            | 6,816.31            | 19.55           | 270.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 374.70                | 285.76                  | 2.311              |         |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Weatherford International Ltd.**  
Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design             |                     |                     |                     |                 |             |                       |                                   |            |                      | WELD_HOUSTON STATE 2 PAD - HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUSTON B 5-16 |                         |                   |  | Offset Site Error: |  | 0.00 ft |  |
|---------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|--|-------------------------|-------------------|--|--------------------|--|---------|--|
| Survey Program: 0-UNKNOWN |                     |                     |                     |                 |             |                       |                                   |            |                      |  |                         |                   |  | Offset Well Error: |  | 0.00 ft |  |
| Reference                 |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |  |                         |                   |  | Warning            |  |         |  |
| Measured Depth (ft)       | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft)  | Minimum Separation (ft) | Separation Factor |  |                    |  |         |  |
| 7,000.00                  | 6,916.31            | 6,916.31            | 6,916.31            | 19.71           | 274.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 370.49   | 289.97                  | 2.278             |  |                    |  |         |  |
| 7,100.00                  | 7,016.31            | 7,016.31            | 7,016.31            | 19.88           | 278.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 366.28   | 294.18                  | 2.245             |  |                    |  |         |  |
| 7,200.00                  | 7,116.31            | 7,116.31            | 7,116.31            | 20.05           | 282.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 362.07   | 298.39                  | 2.213             |  |                    |  |         |  |
| 7,300.00                  | 7,216.31            | 7,216.31            | 7,216.31            | 20.23           | 286.35      | 142.06                | 0.08                              | -49.01     | 660.46               | 357.86   | 302.60                  | 2.183             |  |                    |  |         |  |
| 7,333.69                  | 7,250.00            | 7,250.00            | 7,250.00            | 20.28           | 287.70      | 142.06                | 0.08                              | -49.01     | 660.46               | 356.44   | 304.02                  | 2.172             |  |                    |  |         |  |



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_HOUSTON STATE 2 PAD - P_HOUSTON STATE 32-16 - P_HOUSTON STATE 32-16 - PLAN ; |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD   |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Reference   | Offset              | Semi Major Axis     |                     | Distance       |             |                       |                                   |            |                      |                       |                         |                    |         |
| Measured Depth (ft)   | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  | Warning |
| 0.00  | 0.00                | 0.00                | 0.00                | 0.00           | 0.00        | -180.00               | -14.58                            | 0.00       | 14.58                |                       |                         |                    |         |
| 100.00  | 100.00              | 100.00              | 100.00              | 0.10           | 0.10        | -180.00               | -14.58                            | 0.00       | 14.58                | 14.39                 | 0.19                    | 76.335             |         |
| 200.00  | 200.00              | 200.00              | 200.00              | 0.32           | 0.32        | -180.00               | -14.58                            | 0.00       | 14.58                | 13.94                 | 0.64                    | 22.767             |         |
| 300.00  | 300.00              | 300.00              | 300.00              | 0.55           | 0.55        | -180.00               | -14.58                            | 0.00       | 14.58                | 13.49                 | 1.09                    | 13.378             |         |
| 400.00  | 400.00              | 400.00              | 400.00              | 0.77           | 0.77        | -180.00               | -14.58                            | 0.00       | 14.58                | 13.04                 | 1.54                    | 9.472              |         |
| 500.00  | 500.00              | 500.00              | 500.00              | 0.99           | 0.99        | -180.00               | -14.58                            | 0.00       | 14.58                | 12.59                 | 1.99                    | 7.332              |         |
| 600.00  | 600.00              | 600.00              | 600.00              | 1.22           | 1.22        | -180.00               | -14.58                            | 0.00       | 14.58                | 12.15                 | 2.44                    | 5.980              |         |
| 700.00  | 700.00              | 700.00              | 700.00              | 1.44           | 1.44        | -180.00               | -14.58                            | 0.00       | 14.58                | 11.70                 | 2.89                    | 5.049              |         |
| 750.00  | 750.00              | 750.00              | 750.00              | 1.56           | 1.56        | -180.00               | -14.58                            | 0.00       | 14.58                | 11.47                 | 3.11                    | 4.685 CC, ES       |         |
| 800.00  | 800.00              | 799.77              | 799.76              | 1.67           | 1.65        | -139.15               | -14.96                            | -0.20      | 15.30                | 11.97                 | 3.32                    | 4.604 SF           |         |
| 900.00  | 899.93              | 899.06              | 898.99              | 1.89           | 1.83        | -140.78               | -18.00                            | -1.83      | 20.99                | 17.27                 | 3.72                    | 5.647              |         |
| 1,000.00  | 999.68              | 997.62              | 997.31              | 2.12           | 2.02        | -142.28               | -24.01                            | -5.06      | 32.37                | 28.25                 | 4.12                    | 7.850              |         |
| 1,100.00  | 1,099.13            | 1,094.99            | 1,094.16            | 2.36           | 2.24        | -143.17               | -32.86                            | -9.82      | 49.38                | 44.83                 | 4.54                    | 10.866             |         |
| 1,200.00  | 1,198.15            | 1,190.72            | 1,188.99            | 2.63           | 2.48        | -143.62               | -44.39                            | -16.01     | 71.90                | 66.92                 | 4.98                    | 14.432             |         |
| 1,300.00  | 1,296.63            | 1,284.42            | 1,281.32            | 2.93           | 2.75        | -143.81               | -58.37                            | -23.52     | 99.81                | 94.37                 | 5.44                    | 18.342             |         |
| 1,400.00  | 1,394.44            | 1,375.71            | 1,370.74            | 3.28           | 3.06        | -143.83               | -74.54                            | -32.21     | 132.96               | 127.03                | 5.93                    | 22.430             |         |
| 1,500.00  | 1,491.46            | 1,464.26            | 1,456.89            | 3.69           | 3.40        | -143.73               | -92.62                            | -41.92     | 171.15               | 164.71                | 6.44                    | 26.566             |         |
| 1,514.24  | 1,505.21            | 1,476.64            | 1,468.87            | 3.75           | 3.45        | -143.71               | -95.33                            | -43.38     | 176.99               | 170.47                | 6.52                    | 27.156             |         |
| 1,600.00  | 1,587.93            | 1,550.25            | 1,539.88            | 4.14           | 3.78        | -143.81               | -112.41                           | -52.55     | 213.26               | 206.24                | 7.02                    | 30.392             |         |
| 1,700.00  | 1,684.40            | 1,634.24            | 1,620.26            | 4.61           | 4.20        | -143.56               | -133.85                           | -64.07     | 257.59               | 249.97                | 7.62                    | 33.789             |         |
| 1,800.00  | 1,780.86            | 1,716.17            | 1,697.96            | 5.10           | 4.65        | -143.10               | -156.75                           | -76.38     | 304.04               | 295.79                | 8.25                    | 36.845             |         |
| 1,900.00  | 1,877.32            | 1,800.00            | 1,776.65            | 5.60           | 5.15        | -142.49               | -182.20                           | -90.05     | 352.59               | 343.68                | 8.91                    | 39.558             |         |
| 2,000.00  | 1,973.78            | 1,873.66            | 1,845.07            | 6.11           | 5.64        | -141.89               | -206.23                           | -102.96    | 403.11               | 393.54                | 9.57                    | 42.138             |         |
| 2,100.00  | 2,070.25            | 1,949.29            | 1,914.57            | 6.62           | 6.17        | -141.23               | -232.51                           | -117.08    | 455.61               | 445.36                | 10.24                   | 44.488             |         |
| 2,200.00  | 2,166.71            | 2,033.67            | 1,991.67            | 7.14           | 6.80        | -140.57               | -262.70                           | -133.30    | 509.06               | 498.10                | 10.97                   | 46.411             |         |
| 2,300.00  | 2,263.17            | 2,118.05            | 2,068.78            | 7.67           | 7.43        | -140.03               | -292.89                           | -149.52    | 562.56               | 550.86                | 11.70                   | 48.069             |         |
| 2,400.00  | 2,359.64            | 2,202.43            | 2,145.88            | 8.19           | 8.07        | -139.58               | -323.08                           | -165.74    | 616.09               | 603.64                | 12.45                   | 49.505             |         |
| 2,500.00  | 2,456.10            | 2,286.81            | 2,222.99            | 8.72           | 8.72        | -139.21               | -353.27                           | -181.96    | 669.64               | 656.45                | 13.19                   | 50.753             |         |
| 2,600.00  | 2,552.56            | 2,371.19            | 2,300.10            | 9.26           | 9.38        | -138.89               | -383.46                           | -198.18    | 723.21               | 709.26                | 13.95                   | 51.850             |         |
| 2,700.00  | 2,649.02            | 2,455.57            | 2,377.20            | 9.79           | 10.04       | -138.61               | -413.65                           | -214.40    | 776.79               | 762.08                | 14.71                   | 52.819             |         |
| 2,800.00  | 2,745.49            | 2,539.94            | 2,454.31            | 10.33          | 10.70       | -138.37               | -443.84                           | -230.62    | 830.38               | 814.91                | 15.47                   | 53.682             |         |
| 2,900.00  | 2,841.95            | 2,624.32            | 2,531.41            | 10.87          | 11.36       | -138.16               | -474.03                           | -246.84    | 883.98               | 867.75                | 16.23                   | 54.454             |         |
| 3,000.00  | 2,938.41            | 2,708.70            | 2,608.52            | 11.41          | 12.03       | -137.98               | -504.22                           | -263.06    | 937.59               | 920.59                | 17.00                   | 55.147             |         |
| 3,100.00  | 3,034.87            | 2,793.08            | 2,685.63            | 11.95          | 12.70       | -137.81               | -534.41                           | -279.27    | 991.21               | 973.43                | 17.77                   | 55.772             |         |
| 3,200.00  | 3,131.34            | 2,877.46            | 2,762.73            | 12.49          | 13.37       | -137.66               | -564.60                           | -295.49    | 1,044.83             | 1,026.28              | 18.55                   | 56.339             |         |
| 3,300.00  | 3,227.80            | 2,961.84            | 2,839.84            | 13.03          | 14.04       | -137.52               | -594.79                           | -311.71    | 1,098.45             | 1,079.13              | 19.32                   | 56.856             |         |
| 3,369.45  | 3,294.79            | 3,024.43            | 2,897.05            | 13.40          | 14.52       | -137.43               | -617.17                           | -323.74    | 1,135.68             | 1,115.81              | 19.87                   | 57.154             |         |
| 3,400.00  | 3,324.31            | 3,064.28            | 2,933.63            | 13.55          | 14.79       | -137.64               | -631.07                           | -331.20    | 1,151.72             | 1,131.54              | 20.18                   | 57.084             |         |
| 3,500.00  | 3,421.47            | 3,200.16            | 3,059.98            | 13.94          | 15.57       | -138.20               | -675.08                           | -354.85    | 1,200.46             | 1,179.37              | 21.08                   | 56.935             |         |
| 3,600.00  | 3,519.39            | 3,344.12            | 3,196.26            | 14.29          | 16.29       | -138.64               | -715.90                           | -376.78    | 1,243.11             | 1,221.15              | 21.95                   | 56.625             |         |
| 3,700.00  | 3,617.97            | 3,495.52            | 3,341.91            | 14.61          | 16.97       | -138.98               | -752.26                           | -396.32    | 1,279.22             | 1,256.44              | 22.78                   | 56.151             |         |
| 3,800.00  | 3,717.07            | 3,653.46            | 3,495.95            | 14.88          | 17.57       | -139.23               | -782.92                           | -412.79    | 1,308.39             | 1,284.85              | 23.54                   | 55.579             |         |
| 3,900.00  | 3,816.57            | 3,816.78            | 3,657.00            | 15.10          | 18.08       | -139.41               | -806.71                           | -425.57    | 1,330.28             | 1,306.06              | 24.22                   | 54.925             |         |
| 4,000.00  | 3,916.36            | 3,984.05            | 3,823.27            | 15.29          | 18.47       | -139.52               | -822.65                           | -434.13    | 1,344.59             | 1,319.80              | 24.80                   | 54.223             |         |
| 4,100.00  | 4,016.31            | 4,153.66            | 3,992.64            | 15.43          | 18.73       | -139.56               | -830.06                           | -438.11    | 1,351.16             | 1,325.89              | 25.26                   | 53.484             |         |
| 4,133.69  | 4,050.00            | 4,211.03            | 4,050.00            | 15.47          | 18.80       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,326.21              | 25.40                   | 53.219             |         |
| 4,200.00  | 4,116.31            | 4,277.34            | 4,116.31            | 15.54          | 18.86       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,326.03              | 25.58                   | 52.844             |         |
| 4,300.00  | 4,216.31            | 4,377.34            | 4,216.31            | 15.67          | 18.95       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,325.74              | 25.87                   | 52.253             |         |
| 4,400.00  | 4,316.31            | 4,477.34            | 4,316.31            | 15.79          | 19.05       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,325.44              | 26.16                   | 51.667             |         |
| 4,500.00  | 4,416.31            | 4,577.34            | 4,416.31            | 15.92          | 19.14       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,325.15              | 26.46                   | 51.086             |         |
| 4,600.00  | 4,516.31            | 4,677.34            | 4,516.31            | 16.05          | 19.24       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,324.84              | 26.76                   | 50.509             |         |
| 4,700.00  | 4,616.31            | 4,777.34            | 4,616.31            | 16.19          | 19.34       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,324.54              | 27.07                   | 49.938             |         |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



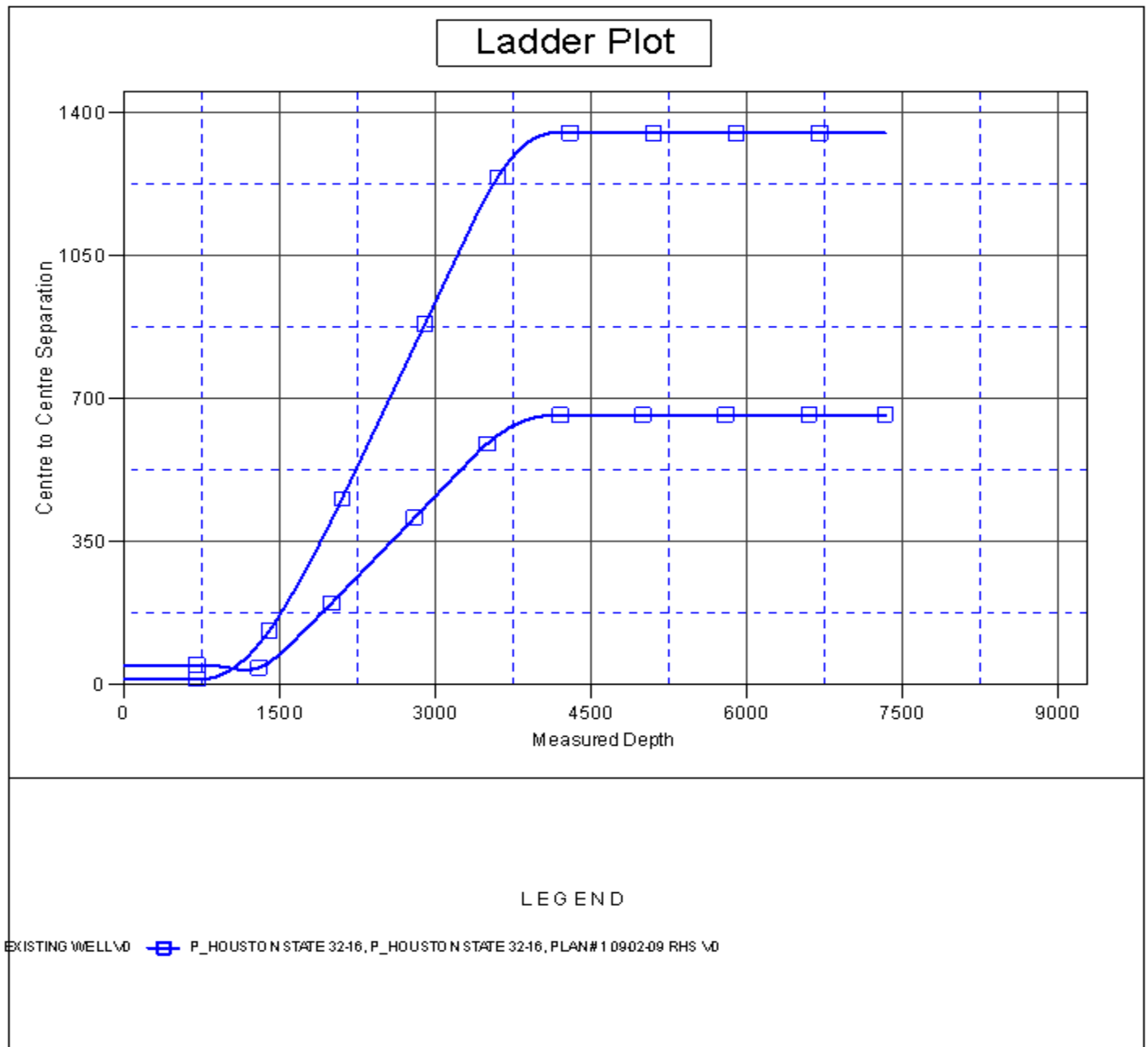
|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_HOUSTON STATE 2 PAD - P_HOUSTON STATE 32-16 - P_HOUSTON STATE 32-16 - PLAN ; |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD   |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Reference   | Offset              | Semi Major Axis     |                     | Distance       |             |                       |                                   |            |                      |                       |                         |                    |         |
| Measured Depth (ft)   | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  | Warning |
| 4,800.00  | 4,716.31            | 4,877.34            | 4,716.31            | 16.32          | 19.45       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,324.23              | 27.38                   | 49.373             |         |
| 4,900.00  | 4,816.31            | 4,977.34            | 4,816.31            | 16.46          | 19.55       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,323.91              | 27.69                   | 48.813             |         |
| 5,000.00  | 4,916.31            | 5,077.34            | 4,916.31            | 16.60          | 19.66       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,323.60              | 28.01                   | 48.260             |         |
| 5,100.00  | 5,016.31            | 5,177.34            | 5,016.31            | 16.74          | 19.77       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,323.28              | 28.33                   | 47.713             |         |
| 5,200.00  | 5,116.31            | 5,277.34            | 5,116.31            | 16.88          | 19.88       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,322.95              | 28.65                   | 47.172             |         |
| 5,300.00  | 5,216.31            | 5,377.34            | 5,216.31            | 17.03          | 19.99       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,322.62              | 28.98                   | 46.639             |         |
| 5,400.00  | 5,316.31            | 5,477.34            | 5,316.31            | 17.17          | 20.10       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,322.29              | 29.31                   | 46.112             |         |
| 5,500.00  | 5,416.31            | 5,577.34            | 5,416.31            | 17.32          | 20.22       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,321.96              | 29.65                   | 45.592             |         |
| 5,600.00  | 5,516.31            | 5,677.34            | 5,516.31            | 17.47          | 20.34       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,321.62              | 29.98                   | 45.079             |         |
| 5,700.00  | 5,616.31            | 5,777.34            | 5,616.31            | 17.62          | 20.46       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,321.28              | 30.32                   | 44.574             |         |
| 5,800.00  | 5,716.31            | 5,877.34            | 5,716.31            | 17.77          | 20.58       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,320.94              | 30.67                   | 44.075             |         |
| 5,900.00  | 5,816.31            | 5,977.34            | 5,816.31            | 17.93          | 20.70       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,320.59              | 31.01                   | 43.584             |         |
| 6,000.00  | 5,916.31            | 6,077.34            | 5,916.31            | 18.08          | 20.83       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,320.24              | 31.36                   | 43.100             |         |
| 6,100.00  | 6,016.31            | 6,177.34            | 6,016.31            | 18.24          | 20.96       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,319.89              | 31.71                   | 42.623             |         |
| 6,200.00  | 6,116.31            | 6,277.34            | 6,116.31            | 18.40          | 21.08       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,319.54              | 32.06                   | 42.154             |         |
| 6,300.00  | 6,216.31            | 6,377.34            | 6,216.31            | 18.56          | 21.21       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,319.18              | 32.42                   | 41.691             |         |
| 6,400.00  | 6,316.31            | 6,477.34            | 6,316.31            | 18.72          | 21.35       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,318.83              | 32.78                   | 41.236             |         |
| 6,500.00  | 6,416.31            | 6,577.34            | 6,416.31            | 18.88          | 21.48       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,318.47              | 33.14                   | 40.788             |         |
| 6,600.00  | 6,516.31            | 6,677.34            | 6,516.31            | 19.05          | 21.61       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,318.10              | 33.50                   | 40.346             |         |
| 6,700.00  | 6,616.31            | 6,777.34            | 6,616.31            | 19.21          | 21.75       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,317.74              | 33.86                   | 39.912             |         |
| 6,800.00  | 6,716.31            | 6,877.34            | 6,716.31            | 19.38          | 21.89       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,317.37              | 34.23                   | 39.485             |         |
| 6,900.00  | 6,816.31            | 6,977.34            | 6,816.31            | 19.55          | 22.03       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,317.00              | 34.60                   | 39.065             |         |
| 7,000.00  | 6,916.31            | 7,077.34            | 6,916.31            | 19.71          | 22.17       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,316.63              | 34.97                   | 38.651             |         |
| 7,100.00  | 7,016.31            | 7,177.34            | 7,016.31            | 19.88          | 22.31       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,316.26              | 35.34                   | 38.244             |         |
| 7,200.00  | 7,116.31            | 7,277.34            | 7,116.31            | 20.05          | 22.45       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,315.89              | 35.72                   | 37.844             |         |
| 7,300.00  | 7,216.31            | 7,377.34            | 7,216.31            | 20.23          | 22.60       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,315.51              | 36.09                   | 37.450             |         |
| 7,333.69  | 7,250.00            | 7,411.03            | 7,250.00            | 20.28          | 22.65       | 179.29                | -830.57                           | -438.38    | 1,351.60             | 1,315.39              | 36.22                   | 37.318             |         |



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

Reference Depths are relative to WELL @ 4748.00ft (Original Well Elev) Coordinates are relative to: P\_HOUSTON STATE 31-16  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.39°

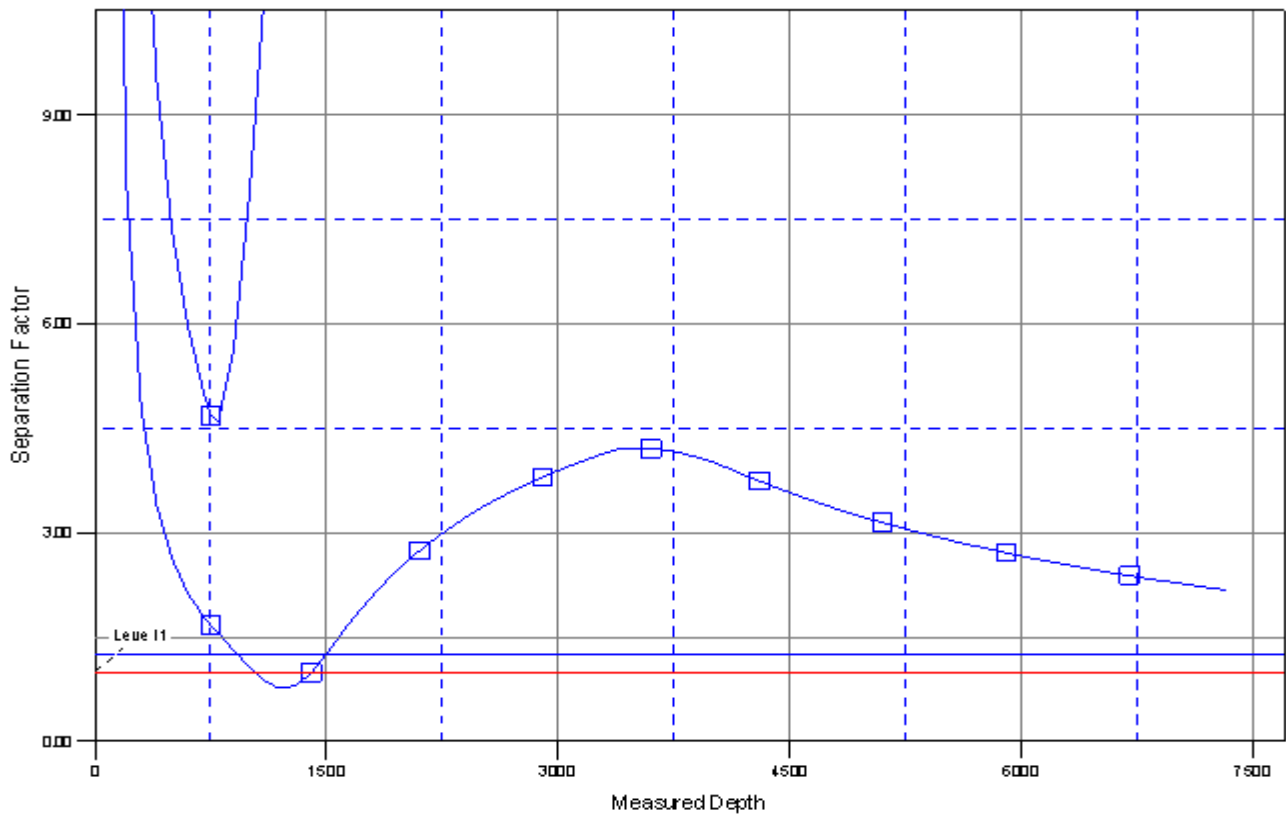




|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_HOUSTON STATE 31-16            |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4748.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_HOUSTON STATE 2 PAD        | <b>MD Reference:</b>                | WELL @ 4748.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_HOUSTON STATE 31-16           | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_HOUSTON STATE 31-16           | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-02-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

Reference Depths are relative to WELL @ 4748.00ft (Original Well Elev)Coordinates are relative to: P\_HOUSTON STATE 31-16  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.39°

## Separation Factor Plot



### LEGEND

6 EXISTING WELL \0 - P\_HOUSTON STATE 32-16, P\_HOUSTON STATE 32-16, PLAN#1 09-02-09 RHS \0