

VERDAD RESOURCES

WATTENBERG FIELD

ARNOLD 02N-64W-24

HELEN 24-4H

Wellbore #1

Plan: Design #1

Standard Planning Report

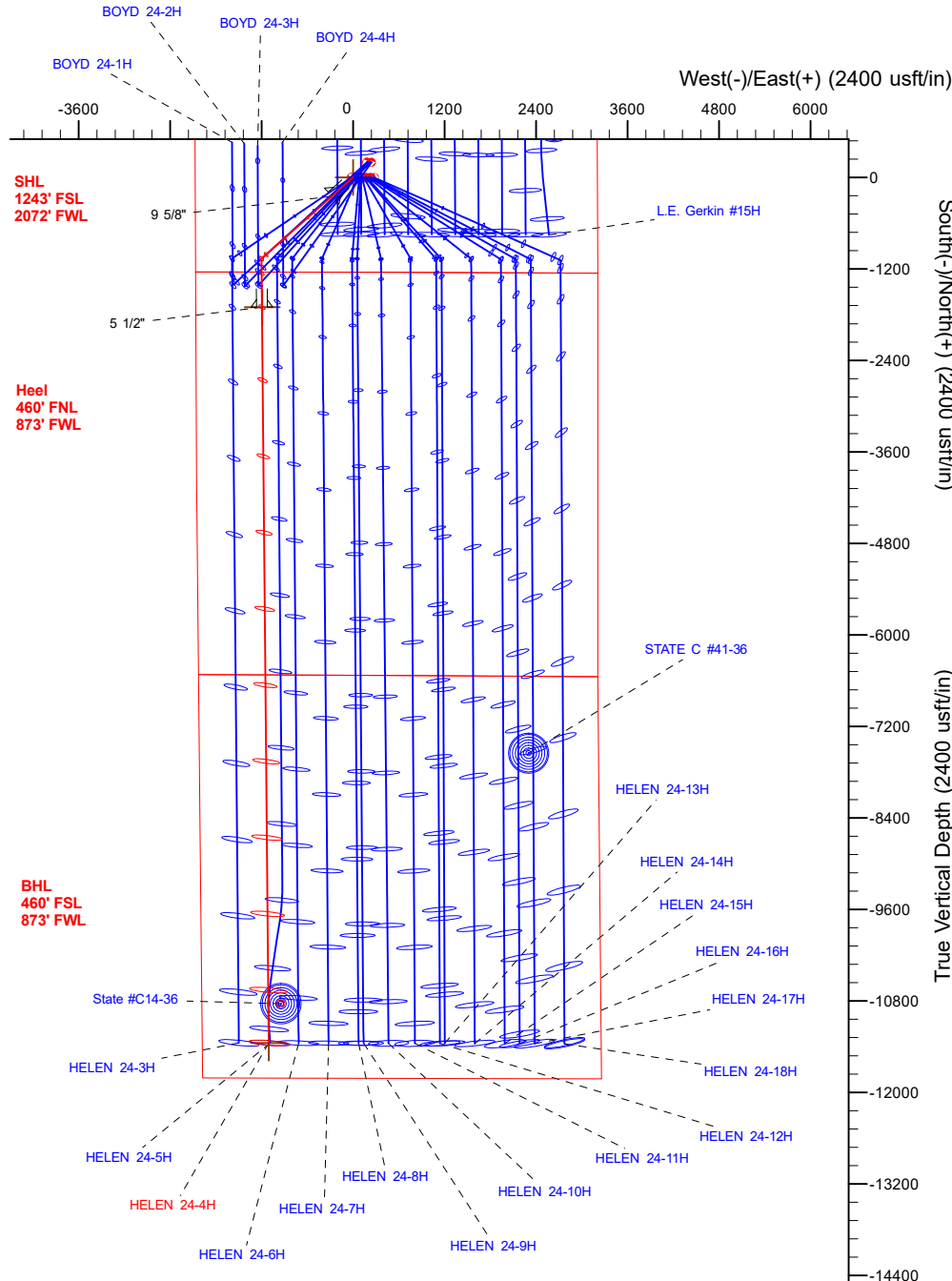
02 November, 2017

Project: WATTENBERG FIELD
Site: ARNOLD 02N-64W-24
Well: HELEN 24-4H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

| TVD | MD | Name | Size |
|---------|---------|--------|-------|
| 1700.00 | 1761.74 | 9 5/8" | 9-5/8 |
| 6775.00 | 7443.97 | 5 1/2" | 5-1/2 |

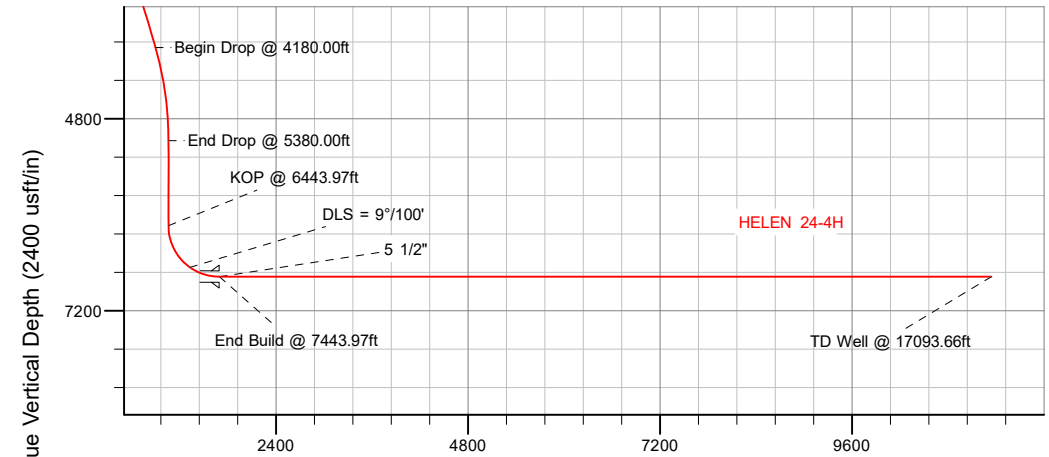


SECTION DETAILS

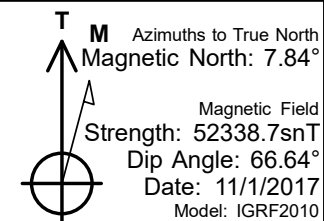
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|-----------|----------|------|--------|----------|-----------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 250.00 | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 1450.00 | 24.00 | 228.40 | 1415.21 | -164.44 | -185.21 | 2.00 | 228.40 | 162.72 | |
| 4 | 4180.00 | 24.00 | 228.40 | 3909.19 | -801.65 | -1015.56 | 0.00 | 0.00 | 892.22 | |
| 5 | 5380.00 | 0.00 | 0.00 | 5074.41 | -1066.09 | -1200.77 | 2.00 | 180.00 | 1054.94 | |
| 6 | 6443.97 | 0.00 | 0.00 | 6138.38 | -1066.09 | -1200.77 | 0.00 | 0.00 | 1054.94 | |
| 7 | 7443.97 | 90.00 | 179.47 | 6775.00 | -1702.68 | -1194.89 | 9.00 | 179.47 | 1691.56 | |
| 8 | 17093.67 | 90.00 | 179.47 | 6775.00 | -11351.97 | -1105.72 | 0.00 | 0.00 | 11341.25 | HELEN 24-4H_BHL |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|-----------------|---------|-----------|----------|-----------|-------------|
| HELEN 24-4H_SHL | 0.00 | 0.00 | 0.00 | 40.120058 | -104.501722 |
| HELEN 24-4H_BHL | 6775.00 | -11351.97 | -1105.72 | 40.088895 | -104.505674 |



Vertical Section at 179.47° (2400 usft/in)



WELL DETAILS: HELEN 24-4H

GL = 4925'

RKB = 20' @ 4945.00usft (Drilling Rig)

Plan: Design #1 (HELEN 24-4H/Wellbore #1)

Created By: _____ Date: 11/03/2017
Reviewed: _____ Date: _____

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| Project | WATTENBERG FIELD | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| | | | | | |
|-----------------------|-------------------|--------------|-------------------|-------------------|-------------|
| Site | ARNOLD 02N-64W-24 | | | | |
| Site Position: | | Northing: | 1,288,352.76 usft | Latitude: | 40.120602 |
| From: | Lat/Long | Easting: | 3,279,352.74 usft | Longitude: | -104.501071 |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.65 ° |

| Well | HELEN 24-4H | | | | | |
|----------------------|-------------|--------------|---------------------|-------------------|---------------|---------------|
| Well Position | +N/-S | -198.18 usft | Northing: | 1,288,152.55 usft | Latitude: | 40.120058 |
| | +E/-W | -182.06 usft | Easting: | 3,279,172.92 usft | Longitude: | -104.501722 |
| Position Uncertainty | | 3.28 usft | Wellhead Elevation: | | Ground Level: | 4,925.00 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 11/1/2017 | 7.84 | 66.64 | 52,338.69188069 |

| | | | | | |
|--------------------------|-----------|--------------------------------|---------------------|----------------------|----------------------|
| Design | Design #1 | | | | |
| Audit Notes: | | | | | |
| Version: | | Phase: | PLAN | Tie On Depth: | 0.00 |
| Vertical Section: | | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
| | | 0.00 | 0.00 | 0.00 | 179.47 |

| | | | | | |
|---------------------------------|------------------------|--------------------------|-------------------------|---|--|
| Plan Survey Tool Program | Date | 11/2/2017 | | | |
| Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks | |
| 1 | 0.00 | 1,700.00 | Design #1 (Wellbore #1) | ISCWSA REV 2 MWD Fixed:v2:standard declination | |
| 2 | 1,700.00 | 17,093.67 | Design #1 (Wellbore #1) | ISCWSA REV 2 MWD Fixed:v2:standard declination | |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|-------------------------------|------------------------------|----------------|-----------------|
| Plan Sections | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 250.00 | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,450.00 | 24.00 | 228.40 | 1,415.21 | -164.44 | -185.21 | 2.00 | 2.00 | 0.00 | 228.40 | |
| 4,180.00 | 24.00 | 228.40 | 3,909.19 | -901.66 | -1,015.56 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,380.00 | 0.00 | 0.00 | 5,074.41 | -1,066.09 | -1,200.77 | 2.00 | -2.00 | 10.97 | 180.00 | |
| 6,443.97 | 0.00 | 0.00 | 6,138.38 | -1,066.09 | -1,200.77 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,443.97 | 90.00 | 179.47 | 6,775.00 | -1,702.68 | -1,194.89 | 9.00 | 9.00 | 17.95 | 179.47 | |
| 17,093.67 | 90.00 | 179.47 | 6,775.00 | -11,351.97 | -1,105.72 | 0.00 | 0.00 | 0.00 | 0.00 | HELEN 24-4H_BHL |

| Planned Survey | | | | | | | | | | |
|------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 250.00 | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Begin Nudge @ 250.00ft | | | | | | | | | | |
| 300.00 | 1.00 | 228.40 | 300.00 | -0.29 | -0.33 | 0.29 | 2.00 | 2.00 | 0.00 | |
| 400.00 | 3.00 | 228.40 | 399.93 | -2.61 | -2.94 | 2.58 | 2.00 | 2.00 | 0.00 | |
| 500.00 | 5.00 | 228.40 | 499.68 | -7.24 | -8.15 | 7.16 | 2.00 | 2.00 | 0.00 | |
| 600.00 | 7.00 | 228.40 | 599.13 | -14.18 | -15.97 | 14.03 | 2.00 | 2.00 | 0.00 | |
| 700.00 | 9.00 | 228.40 | 698.15 | -23.42 | -26.38 | 23.17 | 2.00 | 2.00 | 0.00 | |
| 800.00 | 11.00 | 228.40 | 796.63 | -34.95 | -39.36 | 34.58 | 2.00 | 2.00 | 0.00 | |
| 900.00 | 13.00 | 228.40 | 894.44 | -48.75 | -54.91 | 48.24 | 2.00 | 2.00 | 0.00 | |
| 1,000.00 | 15.00 | 228.40 | 991.46 | -64.81 | -73.00 | 64.13 | 2.00 | 2.00 | 0.00 | |
| 1,100.00 | 17.00 | 228.40 | 1,087.58 | -83.11 | -93.61 | 82.24 | 2.00 | 2.00 | 0.00 | |
| 1,200.00 | 19.00 | 228.40 | 1,182.68 | -103.62 | -116.71 | 102.54 | 2.00 | 2.00 | 0.00 | |
| 1,300.00 | 21.00 | 228.40 | 1,276.65 | -126.33 | -142.29 | 125.01 | 2.00 | 2.00 | 0.00 | |
| 1,400.00 | 23.00 | 228.40 | 1,369.36 | -151.20 | -170.30 | 149.62 | 2.00 | 2.00 | 0.00 | |
| 1,450.00 | 24.00 | 228.40 | 1,415.21 | -164.44 | -185.21 | 162.72 | 2.00 | 2.00 | 0.00 | |
| End Nudge @ 1450.00ft | | | | | | | | | | |
| 1,500.00 | 24.00 | 228.40 | 1,460.89 | -177.94 | -200.42 | 176.08 | 0.00 | 0.00 | 0.00 | |
| 1,600.00 | 24.00 | 228.40 | 1,552.25 | -204.94 | -230.83 | 202.80 | 0.00 | 0.00 | 0.00 | |
| 1,700.00 | 24.00 | 228.40 | 1,643.60 | -231.95 | -261.25 | 229.52 | 0.00 | 0.00 | 0.00 | |
| 1,761.74 | 24.00 | 228.40 | 1,700.00 | -248.62 | -280.03 | 246.02 | 0.00 | 0.00 | 0.00 | |
| 9 5/8" | | | | | | | | | | |
| 1,800.00 | 24.00 | 228.40 | 1,734.96 | -258.95 | -291.67 | 256.24 | 0.00 | 0.00 | 0.00 | |
| 1,900.00 | 24.00 | 228.40 | 1,826.31 | -285.96 | -322.08 | 282.97 | 0.00 | 0.00 | 0.00 | |
| 2,000.00 | 24.00 | 228.40 | 1,917.66 | -312.96 | -352.50 | 309.69 | 0.00 | 0.00 | 0.00 | |
| 2,100.00 | 24.00 | 228.40 | 2,009.02 | -339.97 | -382.91 | 336.41 | 0.00 | 0.00 | 0.00 | |
| 2,200.00 | 24.00 | 228.40 | 2,100.37 | -366.97 | -413.33 | 363.13 | 0.00 | 0.00 | 0.00 | |
| 2,300.00 | 24.00 | 228.40 | 2,191.73 | -393.97 | -443.74 | 389.85 | 0.00 | 0.00 | 0.00 | |
| 2,400.00 | 24.00 | 228.40 | 2,283.08 | -420.98 | -474.16 | 416.57 | 0.00 | 0.00 | 0.00 | |
| 2,500.00 | 24.00 | 228.40 | 2,374.44 | -447.98 | -504.57 | 443.30 | 0.00 | 0.00 | 0.00 | |
| 2,600.00 | 24.00 | 228.40 | 2,465.79 | -474.99 | -534.99 | 470.02 | 0.00 | 0.00 | 0.00 | |
| 2,700.00 | 24.00 | 228.40 | 2,557.15 | -501.99 | -565.41 | 496.74 | 0.00 | 0.00 | 0.00 | |
| 2,800.00 | 24.00 | 228.40 | 2,648.50 | -529.00 | -595.82 | 523.46 | 0.00 | 0.00 | 0.00 | |
| 2,900.00 | 24.00 | 228.40 | 2,739.86 | -556.00 | -626.24 | 550.18 | 0.00 | 0.00 | 0.00 | |
| 3,000.00 | 24.00 | 228.40 | 2,831.21 | -583.00 | -656.65 | 576.91 | 0.00 | 0.00 | 0.00 | |
| 3,100.00 | 24.00 | 228.40 | 2,922.56 | -610.01 | -687.07 | 603.63 | 0.00 | 0.00 | 0.00 | |
| 3,200.00 | 24.00 | 228.40 | 3,013.92 | -637.01 | -717.48 | 630.35 | 0.00 | 0.00 | 0.00 | |
| 3,300.00 | 24.00 | 228.40 | 3,105.27 | -664.02 | -747.90 | 657.07 | 0.00 | 0.00 | 0.00 | |
| 3,400.00 | 24.00 | 228.40 | 3,196.63 | -691.02 | -778.32 | 683.79 | 0.00 | 0.00 | 0.00 | |
| 3,500.00 | 24.00 | 228.40 | 3,287.98 | -718.03 | -808.73 | 710.51 | 0.00 | 0.00 | 0.00 | |
| 3,600.00 | 24.00 | 228.40 | 3,379.34 | -745.03 | -839.15 | 737.24 | 0.00 | 0.00 | 0.00 | |
| 3,700.00 | 24.00 | 228.40 | 3,470.69 | -772.03 | -869.56 | 763.96 | 0.00 | 0.00 | 0.00 | |
| 3,800.00 | 24.00 | 228.40 | 3,562.05 | -799.04 | -899.98 | 790.68 | 0.00 | 0.00 | 0.00 | |
| 3,900.00 | 24.00 | 228.40 | 3,653.40 | -826.04 | -930.39 | 817.40 | 0.00 | 0.00 | 0.00 | |
| 4,000.00 | 24.00 | 228.40 | 3,744.76 | -853.05 | -960.81 | 844.12 | 0.00 | 0.00 | 0.00 | |
| 4,100.00 | 24.00 | 228.40 | 3,836.11 | -880.05 | -991.23 | 870.84 | 0.00 | 0.00 | 0.00 | |
| 4,180.00 | 24.00 | 228.40 | 3,909.19 | -901.66 | -1,015.56 | 892.22 | 0.00 | 0.00 | 0.00 | |
| Begin Drop @ 4180.00ft | | | | | | | | | | |
| 4,200.00 | 23.60 | 228.40 | 3,927.49 | -907.01 | -1,021.59 | 897.52 | 2.00 | -2.00 | 0.00 | |
| 4,300.00 | 21.60 | 228.40 | 4,019.81 | -932.53 | -1,050.33 | 922.77 | 2.00 | -2.00 | 0.00 | |
| 4,400.00 | 19.60 | 228.40 | 4,113.41 | -955.89 | -1,076.64 | 945.89 | 2.00 | -2.00 | 0.00 | |
| 4,500.00 | 17.60 | 228.40 | 4,208.18 | -977.06 | -1,100.49 | 966.84 | 2.00 | -2.00 | 0.00 | |
| 4,600.00 | 15.60 | 228.40 | 4,304.01 | -996.03 | -1,121.85 | 985.61 | 2.00 | -2.00 | 0.00 | |
| 4,700.00 | 13.60 | 228.40 | 4,400.78 | -1,012.76 | -1,140.70 | 1,002.17 | 2.00 | -2.00 | 0.00 | |
| 4,800.00 | 11.60 | 228.40 | 4,498.36 | -1,027.24 | -1,157.01 | 1,016.50 | 2.00 | -2.00 | 0.00 | |
| 4,900.00 | 9.60 | 228.40 | 4,596.65 | -1,039.46 | -1,170.77 | 1,028.58 | 2.00 | -2.00 | 0.00 | |
| 5,000.00 | 7.60 | 228.40 | 4,695.52 | -1,049.38 | -1,181.95 | 1,038.41 | 2.00 | -2.00 | 0.00 | |
| 5,100.00 | 5.60 | 228.40 | 4,794.85 | -1,057.01 | -1,190.54 | 1,045.96 | 2.00 | -2.00 | 0.00 | |
| 5,200.00 | 3.60 | 228.40 | 4,894.53 | -1,062.34 | -1,196.54 | 1,051.23 | 2.00 | -2.00 | 0.00 | |
| 5,300.00 | 1.60 | 228.40 | 4,994.42 | -1,065.35 | -1,199.93 | 1,054.21 | 2.00 | -2.00 | 0.00 | |
| 5,380.00 | 0.00 | 0.00 | 5,074.41 | -1,066.09 | -1,200.77 | 1,054.94 | 2.00 | -2.00 | 164.50 | |
| End Drop @ 5380.00ft | | | | | | | | | | |
| 5,400.00 | 0.00 | 0.00 | 5,094.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 | |
| 5,500.00 | 0.00 | 0.00 | 5,194.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 | |

| Planned Survey | | | | | | | | | |
|--------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,600.00 | 0.00 | 0.00 | 5,294.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,394.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,494.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,594.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 5,694.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 5,794.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 5,894.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 5,994.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,094.41 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| 6,443.97 | 0.00 | 0.00 | 6,138.38 | -1,066.09 | -1,200.77 | 1,054.94 | 0.00 | 0.00 | 0.00 |
| KOP @ 6443.97ft | | | | | | | | | |
| 6,450.00 | 0.54 | 179.47 | 6,144.41 | -1,066.12 | -1,200.77 | 1,054.97 | 9.00 | 9.00 | 2,976.29 |
| 6,500.00 | 5.04 | 179.47 | 6,194.34 | -1,068.56 | -1,200.75 | 1,057.40 | 9.00 | 9.00 | 0.00 |
| 6,550.00 | 9.54 | 179.47 | 6,243.92 | -1,074.90 | -1,200.69 | 1,063.75 | 9.00 | 9.00 | 0.00 |
| 6,600.00 | 14.04 | 179.47 | 6,292.85 | -1,085.12 | -1,200.59 | 1,073.96 | 9.00 | 9.00 | 0.00 |
| 6,650.00 | 18.54 | 179.47 | 6,340.83 | -1,099.14 | -1,200.46 | 1,087.99 | 9.00 | 9.00 | 0.00 |
| 6,700.00 | 23.04 | 179.47 | 6,387.56 | -1,116.88 | -1,200.30 | 1,105.73 | 9.00 | 9.00 | 0.00 |
| 6,750.00 | 27.54 | 179.47 | 6,432.76 | -1,138.24 | -1,200.10 | 1,127.09 | 9.00 | 9.00 | 0.00 |
| 6,800.00 | 32.04 | 179.47 | 6,476.14 | -1,163.08 | -1,199.87 | 1,151.93 | 9.00 | 9.00 | 0.00 |
| 6,850.00 | 36.54 | 179.47 | 6,517.44 | -1,191.24 | -1,199.61 | 1,180.09 | 9.00 | 9.00 | 0.00 |
| 6,900.00 | 41.04 | 179.47 | 6,556.40 | -1,222.55 | -1,199.32 | 1,211.41 | 9.00 | 9.00 | 0.00 |
| 6,950.00 | 45.54 | 179.47 | 6,592.78 | -1,256.83 | -1,199.01 | 1,245.68 | 9.00 | 9.00 | 0.00 |
| 7,000.00 | 50.04 | 179.47 | 6,626.36 | -1,293.85 | -1,198.66 | 1,282.71 | 9.00 | 9.00 | 0.00 |
| 7,050.00 | 54.54 | 179.47 | 6,656.94 | -1,333.40 | -1,198.30 | 1,322.26 | 9.00 | 9.00 | 0.00 |
| DLS = 9°/100' | | | | | | | | | |
| 7,100.00 | 59.04 | 179.47 | 6,684.31 | -1,375.22 | -1,197.91 | 1,364.08 | 9.00 | 9.00 | 0.00 |
| 7,150.00 | 63.54 | 179.47 | 6,708.32 | -1,419.06 | -1,197.51 | 1,407.93 | 9.00 | 9.00 | 0.00 |
| 7,200.00 | 68.04 | 179.47 | 6,728.82 | -1,464.65 | -1,197.09 | 1,453.52 | 9.00 | 9.00 | 0.00 |
| 7,250.00 | 72.54 | 179.47 | 6,745.68 | -1,511.71 | -1,196.65 | 1,500.58 | 9.00 | 9.00 | 0.00 |
| 7,300.00 | 77.04 | 179.47 | 6,758.79 | -1,559.94 | -1,196.21 | 1,548.81 | 9.00 | 9.00 | 0.00 |
| 7,350.00 | 81.54 | 179.47 | 6,768.08 | -1,609.06 | -1,195.75 | 1,597.93 | 9.00 | 9.00 | 0.00 |
| 7,400.00 | 86.04 | 179.47 | 6,773.48 | -1,658.75 | -1,195.29 | 1,647.62 | 9.00 | 9.00 | 0.00 |
| 7,443.97 | 90.00 | 179.47 | 6,775.00 | -1,702.68 | -1,194.89 | 1,691.56 | 9.00 | 9.00 | 0.00 |
| End Build @ 7443.97ft - 5 1/2" | | | | | | | | | |
| 7,500.00 | 90.00 | 179.47 | 6,775.00 | -1,758.71 | -1,194.37 | 1,747.59 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 90.00 | 179.47 | 6,775.00 | -1,858.71 | -1,193.44 | 1,847.59 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 90.00 | 179.47 | 6,775.00 | -1,958.70 | -1,192.52 | 1,947.59 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.00 | 179.47 | 6,775.00 | -2,058.70 | -1,191.60 | 2,047.59 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.00 | 179.47 | 6,775.00 | -2,158.70 | -1,190.67 | 2,147.59 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.00 | 179.47 | 6,775.00 | -2,258.69 | -1,189.75 | 2,247.59 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.00 | 179.47 | 6,775.00 | -2,358.69 | -1,188.82 | 2,347.59 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.00 | 179.47 | 6,775.00 | -2,458.68 | -1,187.90 | 2,447.59 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.00 | 179.47 | 6,775.00 | -2,558.68 | -1,186.98 | 2,547.59 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.00 | 179.47 | 6,775.00 | -2,658.67 | -1,186.05 | 2,647.59 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.00 | 179.47 | 6,775.00 | -2,758.67 | -1,185.13 | 2,747.59 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.00 | 179.47 | 6,775.00 | -2,858.67 | -1,184.20 | 2,847.59 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.00 | 179.47 | 6,775.00 | -2,958.66 | -1,183.28 | 2,947.59 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.00 | 179.47 | 6,775.00 | -3,058.66 | -1,182.36 | 3,047.59 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.00 | 179.47 | 6,775.00 | -3,158.65 | -1,181.43 | 3,147.59 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.00 | 179.47 | 6,775.00 | -3,258.65 | -1,180.51 | 3,247.59 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.00 | 179.47 | 6,775.00 | -3,358.64 | -1,179.58 | 3,347.59 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.00 | 179.47 | 6,775.00 | -3,458.64 | -1,178.66 | 3,447.59 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.00 | 179.47 | 6,775.00 | -3,558.64 | -1,177.74 | 3,547.59 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.00 | 179.47 | 6,775.00 | -3,658.63 | -1,176.81 | 3,647.59 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.00 | 179.47 | 6,775.00 | -3,758.63 | -1,175.89 | 3,747.59 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.00 | 179.47 | 6,775.00 | -3,858.62 | -1,174.96 | 3,847.59 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.00 | 179.47 | 6,775.00 | -3,958.62 | -1,174.04 | 3,947.59 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.00 | 179.47 | 6,775.00 | -4,058.61 | -1,173.12 | 4,047.59 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.00 | 179.47 | 6,775.00 | -4,158.61 | -1,172.19 | 4,147.59 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.00 | 179.47 | 6,775.00 | -4,258.61 | -1,171.27 | 4,247.59 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.00 | 179.47 | 6,775.00 | -4,358.60 | -1,170.34 | 4,347.59 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 179.47 | 6,775.00 | -4,458.60 | -1,169.42 | 4,447.59 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 179.47 | 6,775.00 | -4,558.59 | -1,168.50 | 4,547.59 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 179.47 | 6,775.00 | -4,658.59 | -1,167.57 | 4,647.59 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 179.47 | 6,775.00 | -4,758.58 | -1,166.65 | 4,747.59 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 179.47 | 6,775.00 | -4,858.58 | -1,165.72 | 4,847.59 | 0.00 | 0.00 | 0.00 |

| Planned Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 17,093.67 | 90.00 | 179.47 | 6,775.00 | -11,351.97 | -1,105.72 | 11,341.25 | 0.00 | 0.00 | 0.00 |

| Casing Points | | | | | |
|-----------------------|-----------------------|--------|--|---------------------|-------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | | Casing Diameter (") | Hole Diameter (") |
| 1,761.74 | 1,700.00 | 9 5/8" | | 9-5/8 | 13-1/2 |
| 7,443.97 | 6,775.00 | 5 1/2" | | 5-1/2 | 8-1/2 |

| Plan Annotations | | | | |
|-----------------------|-----------------------|-------------------|--------------|------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 250.00 | 250.00 | 0.00 | 0.00 | Begin Nudge @ 250.00ft |
| 1,450.00 | 1,415.21 | -164.44 | -185.21 | End Nudge @ 1450.00ft |
| 4,180.00 | 3,909.19 | -901.66 | -1,015.56 | Begin Drop @ 4180.00ft |
| 5,380.00 | 5,074.41 | -1,066.09 | -1,200.77 | End Drop @ 5380.00ft |
| 6,443.97 | 6,138.38 | -1,066.09 | -1,200.77 | KOP @ 6443.97ft |
| 7,050.00 | 6,656.94 | -1,333.40 | -1,198.30 | DLS = 9°/100' |
| 7,443.97 | 6,775.00 | -1,702.68 | -1,194.89 | End Build @ 7443.97ft |
| 17,093.66 | 6,775.00 | -11,351.96 | -1,105.72 | TD Well @ 17093.66ft |

VERDAD RESOURCES

WATTENBERG FIELD

ARNOLD 02N-64W-24

HELEN 24-4H

Wellbore #1

Design #1

Anticollision Summary Report

02 November, 2017

| | | | | | |
|-------------------------------------|---|-----------------------|-----------------------|--|--|
| Reference | Design #1 | | | | |
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | | | |
| Interpolation Method: | Stations | Error Model: | ISCWSA | | |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D | | |
| Results Limited by: | Maximum center-center distance of 9,999.98 usft | Error Surface: | Pedal Curve | | |
| Warning Levels Evaluated at: | 2.45 Sigma | Casing Method: | Added to Error Values | | |

| | | | | | |
|----------------------------|------------------|--------------------------|------------------|-------------------------------|--|
| Survey Tool Program | | Date | 11/2/2017 | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 0.00 | 1,700.00 | Design #1 (Wellbore #1) | ISCWSA REV 2 MWD | Fixed:v2:standard declination | |
| 1,700.00 | 17,093.67 | Design #1 (Wellbore #1) | ISCWSA REV 2 MWD | Fixed:v2:standard declination | |

| | | | | | | |
|--|--|-------------------------------------|--|---|--------------------------|---------------------|
| Summary | | | | | | |
| Site Name | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| 2N-64W-13 L.E. GERKIN EAST PAD | | | | | | |
| L.E. Gerkin #12H - Red Hawk Petroleum Planned Well - | 6,837.52 | 16,446.50 | 2,894.18 | 2,638.47 | 11.318 | CC |
| L.E. Gerkin #12H - Red Hawk Petroleum Planned Well - | 6,850.00 | 16,446.50 | 2,894.23 | 2,638.46 | 11.316 | ES |
| L.E. Gerkin #12H - Red Hawk Petroleum Planned Well - | 6,900.00 | 16,446.50 | 2,895.38 | 2,639.45 | 11.313 | SF |
| L.E. Gerkin #9H - Red Hawk Petroleum Planned Well - P | 6,800.00 | 16,541.50 | 1,992.41 | 1,745.20 | 8.060 | SF |
| L.E. Gerkin #9H - Red Hawk Petroleum Planned Well - P | 6,833.69 | 16,541.50 | 1,991.90 | 1,744.78 | 8.060 | CC, ES |
| L.E. Gerkin #10H - Red Hawk Petroleum Planned Well - P | 6,834.62 | 16,489.70 | 2,292.53 | 2,041.74 | 9.141 | CC, ES, SF |
| L.E. Gerkin #11H - Red Hawk Petroleum Planned Well - P | 6,835.48 | 16,457.40 | 2,592.90 | 2,339.44 | 10.230 | CC, ES |
| L.E. Gerkin #11H - Red Hawk Petroleum Planned Well - P | 6,850.00 | 16,457.40 | 2,592.97 | 2,339.49 | 10.229 | SF |
| L.E. Gerkin #13H - Red Hawk Petroleum Planned Well - P | 6,838.40 | 16,448.80 | 3,197.74 | 2,940.34 | 12.423 | CC |
| L.E. Gerkin #13H - Red Hawk Petroleum Planned Well - P | 6,850.00 | 16,448.80 | 3,197.78 | 2,940.30 | 12.420 | ES |
| L.E. Gerkin #13H - Red Hawk Petroleum Planned Well - P | 6,950.00 | 16,448.80 | 3,201.19 | 2,943.21 | 12.409 | SF |
| L.E. Gerkin #14H - Red Hawk Petroleum Planned Well - P | 6,839.37 | 16,481.10 | 3,501.55 | 3,248.26 | 13.824 | CC |
| L.E. Gerkin #14H - Red Hawk Petroleum Planned Well - P | 6,850.00 | 16,481.10 | 3,501.58 | 3,248.20 | 13.820 | ES |
| L.E. Gerkin #14H - Red Hawk Petroleum Planned Well - P | 7,000.00 | 16,481.10 | 3,508.04 | 3,253.63 | 13.789 | SF |
| L.E. Gerkin #15H - Red Hawk Petroleum Planned Well - P | 6,840.33 | 16,511.10 | 3,805.85 | 3,549.21 | 14.829 | CC |
| L.E. Gerkin #15H - Red Hawk Petroleum Planned Well - P | 6,850.00 | 16,511.10 | 3,805.87 | 3,549.14 | 14.824 | ES |
| L.E. Gerkin #15H - Red Hawk Petroleum Planned Well - P | 7,050.00 | 16,511.10 | 3,815.96 | 3,557.52 | 14.766 | SF |
| 2N-64W-13 L.E. GERKIN WEST PAD | | | | | | |
| L.E. Gerkin #6H - Red Hawk Petroleum Planned Well - P | 6,812.70 | 16,431.70 | 1,118.55 | 886.02 | 4.810 | CC, ES, SF |
| L.E. Gerkin #7H - Red Hawk Petroleum Planned Well - P | 6,813.72 | 16,464.00 | 1,400.49 | 1,156.47 | 5.739 | CC, ES, SF |
| L.E. Gerkin #8H - Red Hawk Petroleum Planned Well - P | 6,815.66 | 16,517.20 | 1,689.16 | 1,438.42 | 6.737 | CC, ES |
| L.E. Gerkin #8H - Red Hawk Petroleum Planned Well - P | 6,850.00 | 16,517.20 | 1,689.78 | 1,438.85 | 6.734 | SF |
| 2N-64W-13 Offsets | | | | | | |
| ARNOLD #1 - Barrett Resources P/A Well - No Surveys | 250.00 | 177.00 | 7,937.97 | 7,928.29 | 819.911 | CC |
| ARNOLD #1 - Barrett Resources P/A Well - No Surveys | 400.00 | 326.93 | 7,941.29 | 7,926.75 | 546.257 | ES |
| ARNOLD #1 - Barrett Resources P/A Well - No Surveys | 7,050.00 | 6,583.94 | 9,582.76 | 9,327.69 | 37.569 | SF |
| DARYL L ARNOLD #1 - Amoco D/A Well - No Surveys | 250.00 | 208.00 | 8,294.38 | 8,283.77 | 782.380 | CC |
| DARYL L ARNOLD #1 - Amoco D/A Well - No Surveys | 400.00 | 357.93 | 8,296.81 | 8,281.22 | 532.379 | ES |
| DARYL L ARNOLD #1 - Amoco D/A Well - No Surveys | 7,050.00 | 6,614.94 | 9,640.60 | 9,377.98 | 36.711 | SF |
| 2N-64W-24 Offsets | | | | | | |
| MCCLINTOCK ET AL #1 - Juniper Oil & Gas D/A Well - N | 250.00 | 201.00 | 2,733.62 | 2,723.23 | 263.133 | CC |
| MCCLINTOCK ET AL #1 - Juniper Oil & Gas D/A Well - N | 400.00 | 348.93 | 2,737.14 | 2,721.86 | 179.138 | ES |
| MCCLINTOCK ET AL #1 - Juniper Oil & Gas D/A Well - N | 7,150.00 | 6,657.32 | 4,393.12 | 4,135.32 | 17.041 | SF |
| 2N-64W-36 Offsets | | | | | | |
| State #C14-36 - Noble Energy PR Well - No Surveys | 16,578.63 | 6,744.00 | 164.54 | -323.23 | 0.337 | Level 1, CC, ES, SF |
| STATE C #41-36 - Prima Exploration P/A Well - No Surve | 13,324.38 | 6,702.00 | 3,443.56 | 3,033.32 | 8.394 | CC |
| STATE C #41-36 - Prima Exploration P/A Well - No Surve | 13,400.00 | 6,702.00 | 3,444.39 | 3,032.93 | 8.371 | ES |
| STATE C #41-36 - Prima Exploration P/A Well - No Surve | 13,700.00 | 6,702.00 | 3,463.99 | 3,048.53 | 8.338 | SF |

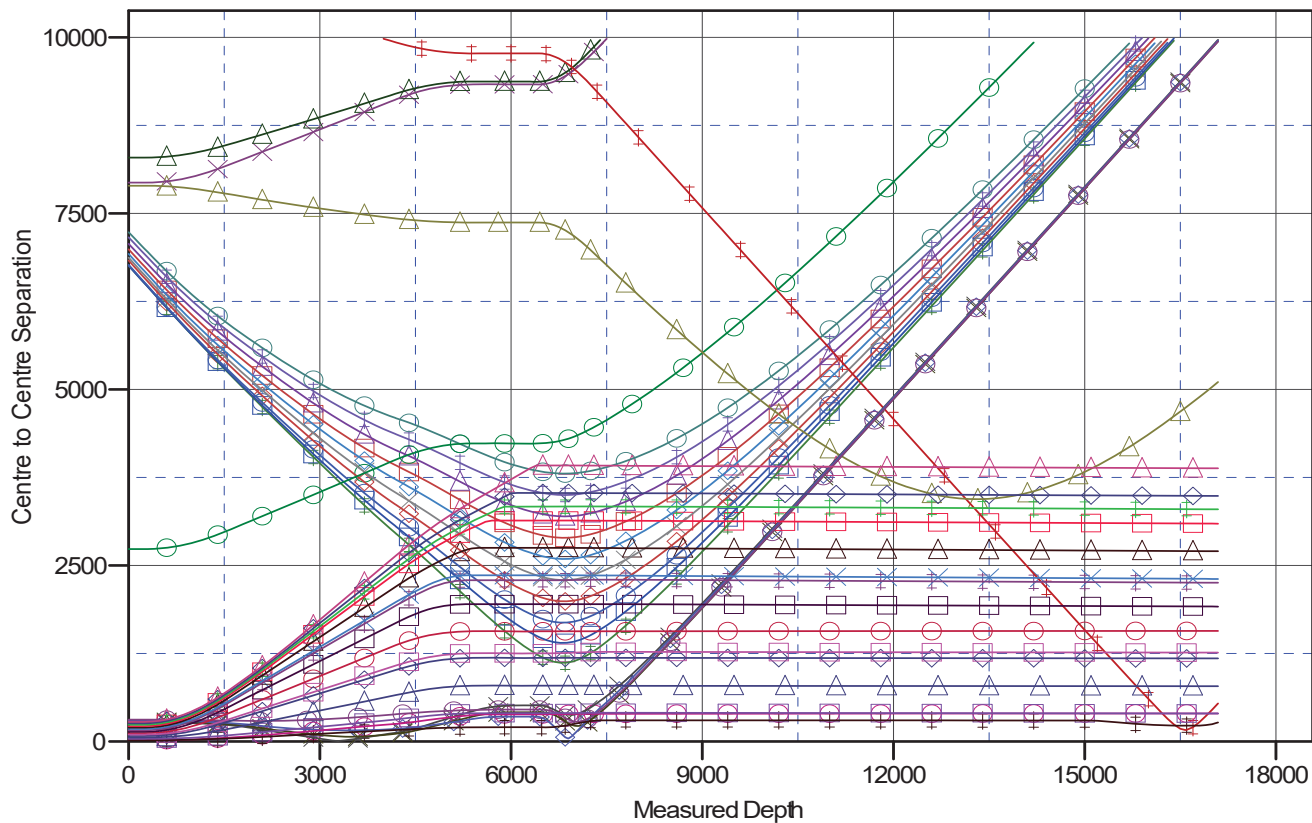
Summary

| Site Name Offset Well - Wellbore - Design | Reference | Offset | Distance | | Separation Factor | Warning |
|--|-----------------------------|-----------------------------|------------------------------|-------------------------------|----------------------|---------------------|
| | Measured Depth (usft) | Measured Depth (usft) | Between Centres (usft) | Between Ellipses (usft) | | |
| ARNOLD 02N-64W-24 | | | | | | |
| BOYD 24-1H - Wellbore #1 - Design #1 | 3,293.37 | 3,417.04 | 7.44 | -45.46 | 0.141 | Level 1, CC, ES, SF |
| BOYD 24-2H - Wellbore #1 - Design #1 | 3,500.90 | 3,629.46 | 68.57 | 12.81 | 1.230 | Level 2, CC |
| BOYD 24-2H - Wellbore #1 - Design #1 | 3,600.00 | 3,727.79 | 69.67 | 10.69 | 1.181 | Level 2, ES, SF |
| BOYD 24-3H - Wellbore #1 - Design #1 | 6,894.36 | 7,118.79 | 44.07 | -23.60 | 0.651 | Level 1, CC |
| BOYD 24-3H - Wellbore #1 - Design #1 | 6,900.00 | 7,119.05 | 44.43 | -27.38 | 0.619 | Level 1, ES, SF |
| BOYD 24-4H - Wellbore #1 - Design #1 | 6,950.00 | 7,090.88 | 295.96 | 217.81 | 3.787 | SF |
| BOYD 24-4H - Wellbore #1 - Design #1 | 7,000.00 | 7,101.74 | 284.83 | 210.21 | 3.817 | ES |
| BOYD 24-4H - Wellbore #1 - Design #1 | 7,041.77 | 7,106.56 | 281.79 | 211.47 | 4.007 | CC |
| HELEN 24-10H - Wellbore #1 - Design #1 | 250.00 | 249.00 | 119.98 | 112.38 | 15.775 | CC, ES |
| HELEN 24-10H - Wellbore #1 - Design #1 | 17,093.67 | 16,927.05 | 1,571.18 | 1,045.70 | 2.990 | SF |
| HELEN 24-11H - Wellbore #1 - Design #1 | 250.00 | 249.00 | 139.84 | 132.23 | 18.385 | CC, ES |
| HELEN 24-11H - Wellbore #1 - Design #1 | 17,093.67 | 17,043.93 | 1,917.44 | 1,391.89 | 3.648 | SF |
| HELEN 24-12H - Wellbore #1 - Design #1 | 250.00 | 249.00 | 159.98 | 152.37 | 21.033 | CC, ES |
| HELEN 24-12H - Wellbore #1 - Design #1 | 17,093.67 | 17,240.72 | 2,255.48 | 1,731.72 | 4.306 | SF |
| HELEN 24-13H - Wellbore #1 - Design #1 | 250.00 | 248.00 | 179.83 | 172.23 | 23.645 | CC, ES |
| HELEN 24-13H - Wellbore #1 - Design #1 | 17,093.67 | 17,026.33 | 2,309.05 | 1,782.94 | 4.389 | SF |
| HELEN 24-14H - Wellbore #1 - Design #1 | 250.00 | 248.00 | 199.97 | 192.36 | 26.293 | CC, ES |
| HELEN 24-14H - Wellbore #1 - Design #1 | 17,093.67 | 17,189.23 | 2,703.23 | 2,176.97 | 5.137 | SF |
| HELEN 24-15H - Wellbore #1 - Design #1 | 250.00 | 248.00 | 219.83 | 212.22 | 28.904 | CC, ES |
| HELEN 24-15H - Wellbore #1 - Design #1 | 17,093.67 | 17,222.65 | 3,094.95 | 2,568.10 | 5.875 | SF |
| HELEN 24-16H - Wellbore #1 - Design #1 | 250.00 | 248.00 | 239.96 | 232.36 | 31.551 | CC, ES |
| HELEN 24-16H - Wellbore #1 - Design #1 | 17,093.67 | 17,500.98 | 3,298.89 | 2,773.00 | 6.273 | SF |
| HELEN 24-17H - Wellbore #1 - Design #1 | 250.00 | 248.00 | 259.82 | 252.22 | 34.162 | CC, ES |
| HELEN 24-17H - Wellbore #1 - Design #1 | 17,093.67 | 17,418.34 | 3,488.05 | 2,960.92 | 6.617 | SF |
| HELEN 24-18H - Wellbore #1 - Design #1 | 250.00 | 247.00 | 279.96 | 272.35 | 36.812 | CC, ES |
| HELEN 24-18H - Wellbore #1 - Design #1 | 17,093.67 | 17,484.04 | 3,880.00 | 3,352.29 | 7.352 | SF |
| HELEN 24-3H - Wellbore #1 - Design #1 | 250.00 | 251.00 | 20.14 | 12.53 | 2.647 | CC |
| HELEN 24-3H - Wellbore #1 - Design #1 | 17,093.67 | 17,271.39 | 399.71 | -115.99 | 0.775 | Level 1, ES, SF |
| HELEN 24-5H - Wellbore #1 - Design #1 | 250.00 | 250.00 | 19.86 | 12.25 | 2.610 | CC |
| HELEN 24-5H - Wellbore #1 - Design #1 | 15,400.00 | 15,602.62 | 282.37 | -20.14 | 0.933 | Level 1, ES |
| HELEN 24-5H - Wellbore #1 - Design #1 | 15,500.00 | 15,702.12 | 273.93 | -19.78 | 0.933 | Level 1, SF |
| HELEN 24-6H - Wellbore #1 - Design #1 | 250.00 | 250.00 | 39.99 | 32.39 | 5.258 | CC |
| HELEN 24-6H - Wellbore #1 - Design #1 | 17,093.67 | 17,087.77 | 399.07 | -118.55 | 0.771 | Level 1, ES, SF |
| HELEN 24-7H - Wellbore #1 - Design #1 | 250.00 | 250.00 | 59.85 | 52.25 | 7.869 | CC, ES |
| HELEN 24-7H - Wellbore #1 - Design #1 | 17,093.67 | 16,951.33 | 785.04 | 259.84 | 1.495 | Level 3, SF |
| HELEN 24-8H - Wellbore #1 - Design #1 | 250.00 | 250.00 | 79.99 | 72.38 | 10.516 | CC, ES |
| HELEN 24-8H - Wellbore #1 - Design #1 | 17,093.67 | 17,000.80 | 1,180.51 | 655.84 | 2.250 | SF |
| HELEN 24-9H - Wellbore #1 - Design #1 | 250.00 | 249.00 | 99.84 | 92.24 | 13.127 | CC, ES |
| HELEN 24-9H - Wellbore #1 - Design #1 | 17,093.67 | 17,152.02 | 1,263.41 | 744.92 | 2.437 | SF |

Reference Depths are relative to RKB = 20' @ 4945.00usft (Drilling Rig)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: HELEN 24-4H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°

Ladder Plot



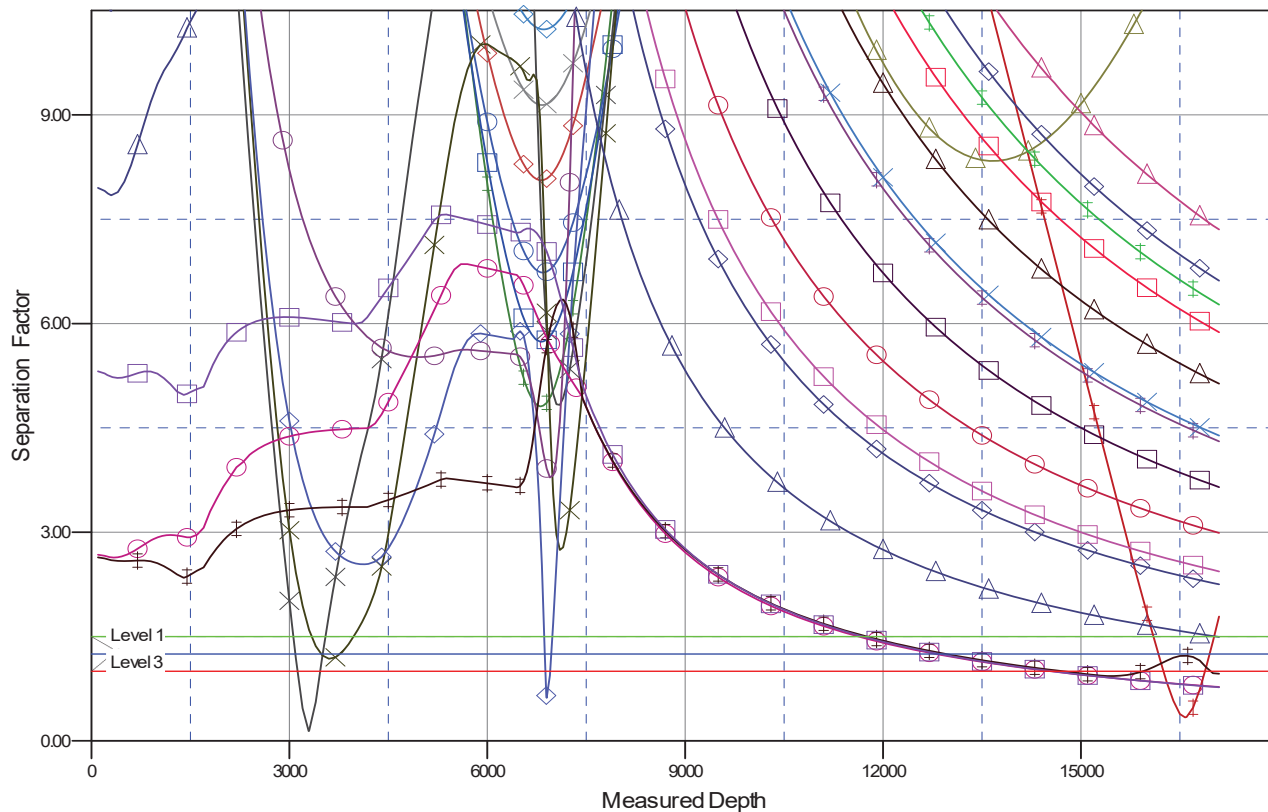
LEGEND

- | | | |
|---|--|---------------------------------------|
| L.E. Geikin #12H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | MOCLINTOCK ET AL #1, Juniper Oil & Gas DAW Well, No Surveys V0 | HELEN24-15H Wellbore #1, Design #1 V0 |
| L.E. Geikin #9H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | State#C14-36, Noble Energy PRW Well No Surveys V0 | HELEN24-16H Wellbore #1, Design #1 V0 |
| L.E. Geikin #10H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | STATE#C14-36, Prima Exploration PAW Well No Surveys V0 | HELEN24-17H Wellbore #1, Design #1 V0 |
| L.E. Geikin #11H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-1H Wellbore #1, Design #1 V0 | HELEN24-18H Wellbore #1, Design #1 V0 |
| L.E. Geikin #13H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-2H Wellbore #1, Design #1 V0 | HELEN24-3H Wellbore #1, Design #1 V0 |
| L.E. Geikin #14H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-3H Wellbore #1, Design #1 V0 | HELEN24-4H Wellbore #1, Design #1 V0 |
| L.E. Geikin #15H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-10H Wellbore #1, Design #1 V0 | HELEN24-5H Wellbore #1, Design #1 V0 |
| L.E. Geikin #9H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-11H Wellbore #1, Design #1 V0 | HELEN24-6H Wellbore #1, Design #1 V0 |
| L.E. Geikin #7H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-12H Wellbore #1, Design #1 V0 | HELEN24-7H Wellbore #1, Design #1 V0 |
| L.E. Geikin #9H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-13H Wellbore #1, Design #1 V0 | HELEN24-8H Wellbore #1, Design #1 V0 |
| ARNOLD#1, Barrett Resources PAW Well No Surveys V0 | HELEN24-14H Wellbore #1, Design #1 V0 | HELEN24-9H Wellbore #1, Design #1 V0 |
| DARYLLARNOLD#1, Amoco DAW Well, No Surveys V0 | | |

Reference Depths are relative to RKB = 20' @ 4945.00usft (Drilling Rig)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: HELEN 24-4H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°

Separation Factor Plot



LEGEND

| | | |
|--|--|---------------------------------------|
| LE.Gekin #12H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | MOCLINTOCK ET AL #1, Juniper Oil & Gas DAW Well, No Surveys V0 | HELEN24-15H Wellbore #1, Design #1 V0 |
| LE.Gekin #9H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | State CI 4-36, Noble Energy PRW Well, No Surveys V0 | HELEN24-16H Wellbore #1, Design #1 V0 |
| LE.Gekin #10H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | STATE 041-36, Prima Exploration PRA Well, No Surveys V0 | HELEN24-17H Wellbore #1, Design #1 V0 |
| LE.Gekin #11H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-4H Wellbore #1, Design #1 V0 | HELEN24-18H Wellbore #1, Design #1 V0 |
| LE.Gekin #13H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-2H Wellbore #1, Design #1 V0 | HELEN24-3H Wellbore #1, Design #1 V0 |
| LE.Gekin #14H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-3H Wellbore #1, Design #1 V0 | HELEN24-5H Wellbore #1, Design #1 V0 |
| LE.Gekin #15H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | BOYD24-4H Wellbore #1, Design #1 V0 | HELEN24-6H Wellbore #1, Design #1 V0 |
| LE.Gekin #9H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-10H Wellbore #1, Design #1 V0 | HELEN24-7H Wellbore #1, Design #1 V0 |
| LE.Gekin #7H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-11H Wellbore #1, Design #1 V0 | HELEN24-8H Wellbore #1, Design #1 V0 |
| LE.Gekin #6H Red Hawk Petroleum Planned Well Planned Cathedral Surveys V0 | HELEN24-12H Wellbore #1, Design #1 V0 | HELEN24-9H Wellbore #1, Design #1 V0 |
| ARNOLD #1 Barrett Resources PRA Well, No Surveys V0 | HELEN24-13H Wellbore #1, Design #1 V0 | |
| DARYL LARNOLD #1, Amoco DAW Well, No Surveys V0 | HELEN24-14H Wellbore #1, Design #1 V0 | |