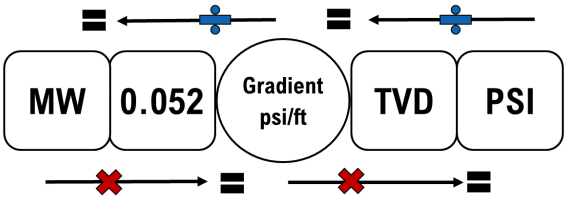
Well Control School
16770 Imperial Valley Dr. Suite 290
Houston, TX 77060-3400

http://wellcontrol.com/

Bullhead Killsheet



ROUNDING RULE # 1

Kill Weight Fluid should **ALWAYS ROUND UP** to the next tenth of a pound-per-gallon.

ROUNDING RULE # 2

Fracture Pressure should **ALWAYS ROUND DOWN** to the whole number

ROUNDING RULE # 3

Pressure Reduction Schedules should **ALWAYS ROUND DOWN** to the whole number.

Formation Pressure (If Unknown)

(____ ppg × 0.052 × ____ ft) + ____ psi = ____ psi

Produced Fluid Weight | Top Perforations (TVD) | Shut-In Tubing Pressure | Formation Pressure

Kill Weight Fluid ***REFERENCE ROUNDING RULE #1***

____ psi ÷ ____ ft ÷ 0.052 = ____ ppg

Formation Pressure | Top Perforations (TVD) | Kill Weight Fluid

Hydrostatic Pressure of Produced Fluid

____ psi − ____ psi = ____ psi

Formation Pressure | Shut-In Tubing Pressure | HP of Produced Fluid

Hydrostatic Pressure of Kill Weight Fluid

____ ppg × 0.052 × ____ ft = ____ psi

Kill Weight Fluid | Top Perforations (TVD) | HP of Kill Weight Fluid

Formation Fracture Pressure ***REFERENCE ROUNDING RULE #2***

____ psi/ft × ____ ft = ____ psi

Fracture Gradient | Top Perforations (TVD) | Fracture Pressure

Initial Maximum Tubing Pressure

____ psi − ____ psi = ____ psi

Fracture Pressure | HP of Produced Fluid | Initial Maximum Tubing Pressure

Final Maximum Tubing Pressure

____ psi − ____ psi = ____ psi

Fracture Pressure | HP of Kill Weight Fluid | Final Maximum Tubing Pressure

Maximum Bullhead Pressure Drop per Step ***REFERENCE ROUNDING RULE #3***

(____ psi − ____ psi) ÷ 10 = ____ psi/step

Initial Maximum Tubing Pressure | Final Maximum Tubing Pressure | Bullhead Pressure Drop per Step

Tubing Capacity

(____ in × ____ in) ÷ 1029.4 = ____ bbls/ft

Tubing ID | Tubing ID | Tubing Capacity

Casing Capacity

(____ in × ____ in) ÷ 1029.4 = ____ bbls/ft

Casing ID | Casing ID | Casing Capacity

Bullhead Volume Calculations

Volume from Surface to End of Tubing (EOT)

____ bbls/ft × ____ ft = ____ bbls

Tubing Capacity | EOT (MD) | Volume from Surface to EOT

Length (MD) from EOT to Bottom Perforations

____ ft − ____ ft = ____ ft

Bottom Perforations (MD) | EOT (MD) | Length from EOT to Bottom Perforations

Volume from EOT to Bottom Perforations

____ bbls/ft × ____ ft = ____ bbls

Casing Capacity | Length from EOT to Bottom Perforations | Volume from EOT to Bottom Perforations

Total Volume to Bullhead

____ bbls + ____ bbls = ____ bbls

Volume from Surface to EOT | Volume from EOT to Bottom Perforations | Total Volume to Bullhead

Bullhead Volume per Step

____ bbls ÷ 10 = ____ bbls/step

Total Volume to Bullhead | Bullhead Volume per Step

Maximum Bullhead Pressure Schedule

Volume	Maximum Bullhead Pressure	Tubing Pressure	Casing Pressure
0	Initial Maximum Tubing Pressure	SITP	
Volume to Bullhead	Final Maximum Tubing Pressure		

Instructions:

Pressure test the surface lines with kill fluid prior to bullheading the well.

In the bottom box of the volume column, input the total volume required to bullhead. Add the Bullhead Volume per Step to the 0 at the top and then to each subsequent box until all boxes are filled.

In the pressure column, input Initial Maximum Tubing Pressure and Final Maximum Tubing Pressure into the marked boxes. Subtract Maximum Bullhead Pressure Drop per Step (found on the front page) from Initial Maximum Tubing Pressure and from each subsequent box until all boxes are filled.

While bullheading the well, track the Tubing Pressure and Casing Pressure in the respective columns.

Tubing Pressure should never exceed the Maximum Bullhead Pressure.