



# ULTIMATE KILLSHEET

Imperial U.S. • SI/Metric • Mixed Units (Imperial and Metric)

## Killsheet Capabilities

- Job site use with real time data
- Volumetric – calculates psi/bbl and determines bleed cycles
- L&B – establishes injection fluid volumes vs pressure bleed down
- Safety and working margins established for volumetric and L&B
- Produces support charts and graphs to assist with well operations
- Bullhead – assists in killing wells in workover operations

**Imperial US – SI Metric – Mixed Units (Imperial and Metric) Killsheets.** WWCI has developed killsheets to meet worldwide demands. While Imperial and Metric killsheets already exist, operators expressed a need for a killsheet that combines the best of both worlds. These killsheets were designed with the flexibility to allow operations to pick required units specific to that country and/or job site. These killsheets are provided for students in all WWCI classes.

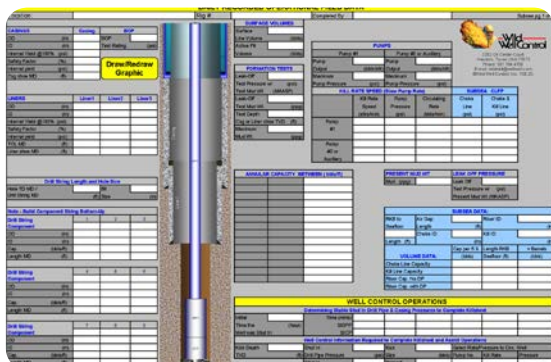
**Surface Killsheet:** This program was developed to handle complex wells with up to 4 casing/liner strings and 9 different drillstring components while calculating up to fourteen geometric sections. If a well kick occurs, as soon as pressures are known, the program provides the necessary well control calculations.

**Subsea Killsheet:** Subsea Killsheet does everything the surface killsheet does, plus provides the additional calculations for choke and kill lines, riser, CLFP and a modified pump start up schedule. The well schematic also takes water depth and choke/kill lines into its dynamic drawing.

## Killsheet Capabilities

- Handles simple and complex wells
- Easy to use in both field and office environments
- Designed with minimal user inputs
- Numbers and displays well string components
- Real time results

Well illustration dynamically numbers and draws the well string components assisting operations with well kill. This visual aid also provides operations with a quick reference and positioning of all tubulars within the well.



The “Well Control Calculation” page provides calculations for volumes, strokes and circulating times for each section of the well along with kill mud, circulating pressures and differences in Maximum Allowable Surface Pressure.

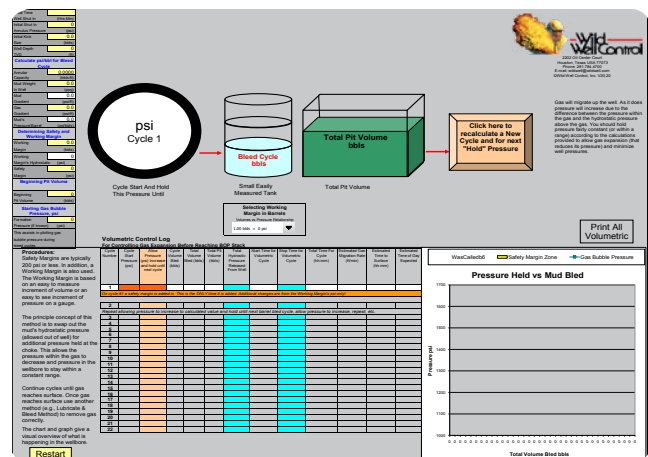
The “Well Control Checklist” page is a collection point for the results of all calculations required for the well kill operation, plus a chart for circulating pressures.

**Support Calculations 1:** Ever wonder if you have enough weight up material, how much the pits may gain, or the max surface pressure? This page provides answers. The pressure vs strokes schedule has the flexibility to graph and compare the difference between a “straight” and deviated/ horizontal well.

**Support Calculations 2:** Provides a look at how circulating pressures (ECDs) may affect the well control operation throughout the various sections of the well.

**Bullhead –** Producing well must be killed? The industry standard is using the Bullhead Method. This sheet calculates the volumes that must be used and pressure limits while pumping to minimize or eliminate downhole and equipment damages. Also assists in calculating kill fluids.

**Lubricate & Bleed –** Wherever a gas cap exists at surface and must be replaced with fluid, the L&B worksheet is required. After injecting fluid into the well, this sheet assists operations in calculating the pressure to volume relationship and provides real time data for the well site supervisor. Both a chart and graph provide written and visual information for planning further injection cycles.



**Volumetric –** Volumetric Killsheet is a MUST for every rig. Once a kick is taken and circulation is not possible, this tool becomes invaluable for all operations when gas migration and increasing well pressures must be dealt with. This sheet assists in calculating psi/bbls, establishes safety and working margins, projects bleed cycles, maximum surface pressures and anticipated volumes gained.

**Note:** Procedures and Instructional tabs are provided to assist users when filling in the different killsheets.