International Well Control Forum
Surface BOP vertical well kill sheet
(metric/bar units – 0.0981)

Date: _____

Name: _____

Formation strength data:

Surface leak-off pressure from formation strength test **(A)** ____ **bar**

Fluid density at test **(B)** ____ **kg/l**

Maximum allowable fluid density =

$$(\mathbf{B}) + \left(\frac{(\mathbf{A})}{\text{casing shoe TVD} \times 0.0981}\right) = \mathbf{(C)} \quad \text{kg/l}$$

Initial MAASP =

$((\mathbf{C}) - \text{current fluid density}) \times 0.0981 \times \text{casing shoe TVD}$

= ____ **bar**

Current well data:

Current fluid:

Density ____ **kg/l**

Casing shoe data:

Size ____ **in**

MD ____ **m**

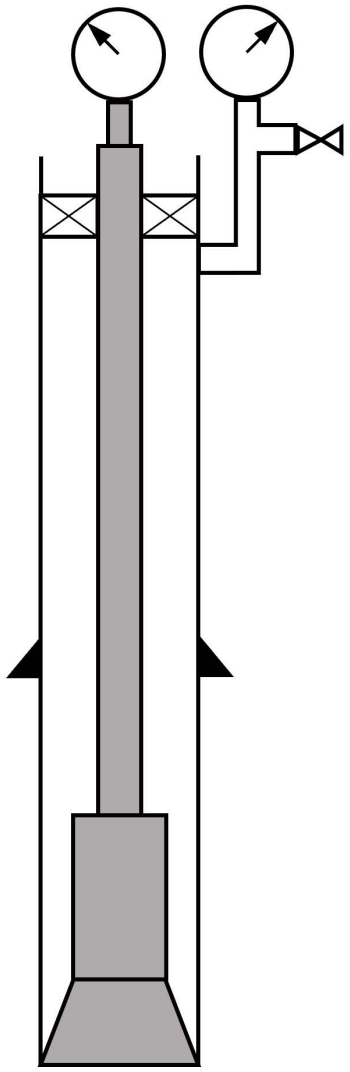
TVD ____ **m**

Openhole data:

Size ____ **in**

MD ____ **m**

TVD ____ **m**



Pump 1 displacement	**Pump 2 displacement**
l/stroke	**l/stroke**

	Circulating pressure at kill rate (SCR)	
Kill rate data:	**Pump 1**	**Pump 2**
SPM		
SPM		

Surface lines volume	**(D)** **l**		**strokes**

Pre-recorded volume data	**Length m**	**Capacity l/m**	**Volume l**	**Pump strokes**	**Time minutes**
Drillpipe (DP)	**x**	**=**		**volume / pump displacement**	**pump strokes / kill rate**
Heavy weight drillpipe (HWDP)	**x**	**=**	**+**		
Drill collars (DC)	**x**	**=**	**+**		
Drillstring volume	**(E)**		**l**	**(F) strokes**	**min**
DC x openhole	**x**	**=**			
DP/HWDP x openhole	**x**	**=**	**+**		
Openhole volume	**(G)**		**l**	**strokes**	**min**
DP x casing	**(H)** **x**	**=**		**strokes**	**min**

Total annulus volume	**(G) + (H) = (I)** **l**	**strokes**	**min**
Total well system volume	**(E) + (I) = (J)** **l**	**strokes**	**min**
Active surface pit volume	**(K)** **l**	**strokes**	**min**
Total active fluid volume	**(D) + (J) + (K)** **l**	**strokes**	**min**

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Kick data:

SIDPP [ ] **bar** **SICP** [ ] **bar** **pit gain** [ ] **litres**

Kill fluid density	current fluid density + $\left(\frac{\text{SIDPP}}{\text{TVD} \times 0.0981}\right)$ + _____ = **kg/l**
Initial circulating pressure (ICP)	circulating pressure at kill rate + SIDPP + = **bar**
Final circulating pressure (FCP)	$\left(\frac{\text{kill fluid density}}{\text{current fluid density}}\right)$ × circulating pressure at kill rate _____ × = **bar**

(L) = (ICP) – (FCP) = **–** **=** **bar**

$\frac{(\mathbf{L}) \times 100}{(\mathbf{F})} = \frac{\quad \times 100}{\quad} =$ $\frac{\text{bar}}{100 \text{ strokes}}$

strokes	pressure (bar)

static and dynamic drillpipe pressure (bar) ↑

strokes →