

Weight-Up Calculation with Barite

$$\text{Lbs. of Barite Required (B)} = \left[\frac{35.05 \times (W_f - W_i)}{35.05 - W_f} \right] \times V_i$$

Where: **B** = Amount of Barite to Add, lbs.
V_i = Starting Volume of Mud, gallons
W_f = Desired Mud Weight, lb/gal
W_i = Starting Mud Weight, lb/gal

Rule of Thumb: For Weighted Drilling Fluids up to 12 lbs./gal using Barite.
For every 140 pounds of Barite added to 100 gallons (U.S.) the weight will rise 1 lb/gal
Prior to weighting up fluid the Funnel Viscosity must be raised with AQUAGEL[®] or QUIK-GEL[®] to four times the final mud weight.

Duplex & Triplex Mud Pump Calculations

(Dimensions in Inches) (1 oilfield barrel = 42 U.S. Gallons)

Duplex

$$\text{Pump Output (bbl/stroke)} = \left[\frac{(2 \times \text{Liner ID}^2 - \text{Rod Diameter}^2) \times \text{Stroke Length}}{6176.4} \right] \times \% \text{ Efficiency}$$

Triplex

$$\text{Pump Output (bbl/stroke)} = \left[(\text{Liner ID})^2 \times 0.000243 \times \text{Stroke Length} \right] \times \% \text{ Efficiency}$$

Volume Output Per Revolution

$$\text{Gal/Rev} = \left(\frac{\left(\frac{\text{Piston Diameter}}{2} \right)^2 \times 3.1415 \times \text{Stroke Length} \times \text{Number of Pistons}}{231} \right)$$