Weight-Up Calculation with Barite

\[
B = \frac{35.05 \times (W_f - W_i)}{35.05 - W_f} \times V_i
\]

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**

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

**Triplex**

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

Volume Output Per Revolution

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