NEWEA Formula/Conversion Table for Lab Analyst Exam

Average = (Sum of Measurements)/(Number of Measurements)

Geometric Mean = $[(X_1)(X_2)(X_3)(X_n)]^{1/n}$

Dilutions: $(N_1)(V_1) = (N_2)(V_2)$

% Removal = (In − Out)(100%)/In

Lbs of solids = (8.34)(Q, MG)(mg/L)

TSS, mg/L = {(mass of filter and solids after drying − mass of filter) x 1000 mL/L
x1000 mg/g} / (mL of sample)

VSS, mg/L = {(mass of filter and solids after drying − mass of filter and solids after ignition) x1000 mg / g} /
(mL of sample)

% TS = (mass of dry solids) x (100) / (mass of wet solids)

% VS = (mass of volatile solids) x (100) / (mass of dry solids)

BOD$_5$, mg/L = $((D_1 − D_2) − (S)V_s)/P$

D_1 = Initial DO

D_2 = DO after 5 days

S = Oxygen uptake of seed (Δ DO/mL seed suspension added per bottle). If sample is unseeded, then S = 0.

V_s = Volume of seed in respective BOD bottle

P = decimal volumetric fraction of sample used.

Conversions:

To convert F to C: F = ((9)(C)/5)+32

To convert C to F: C = (F-32)(5)/9

1 cubic foot = 7.48 gallons

1 gallon of water = 8.34 lbs

1 gallon = 3.785 liters

2.2 kg = 1 lbs

(8/17/2020)