

DOSING CHAMBER SIZING

1. Determine area

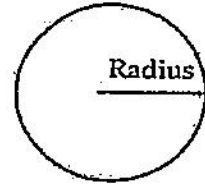
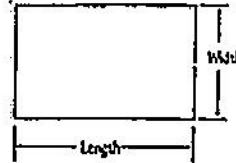
A. Rectangle area = $L \times W$

$\underline{\quad\quad} \times \underline{\quad\quad} = \underline{\quad\quad}$ square feet

B. Circle area = $\pi (3.14) \times \text{radius in feet} \times \text{radius in feet}$

$3.14 \times \underline{\quad\quad} \text{ ft} \times \underline{\quad\quad} \text{ ft} = \underline{\quad\quad}$ sqft

C. Get area from manufacturer $\underline{\quad\quad}$ sqft



2. Calculate gallons per inch *JACOBS 760 gal Tank.*

There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or C) times the conversion factor and divide by 12 inches per foot to calculate gallon per inch.

Area $\times 7.5 \div 12 = \underline{\quad\quad}$ sqft $\times 7.5 \div 12 \text{ in/ft} = \underline{249.2}$ gallon per inch

3. Calculate total tank volume

A. Depth from bottom of inlet pipe to tank bottom $\underline{30.5}$ in

B. Total tank volume = depth from bottom of inlet pipe to tank bottom (3A) \times gal/in (2)
 $= \underline{30.5} \text{ in} \times \underline{249.2} \text{ gal/in} = \underline{7600}$ gal

Legal Tank:
 500 gallons or
 100% the Daily flow
 or
 Alternating Pumps

4. Calculate gallons to cover pump (with 2-3 inches of water covering pump)

(Pump and block height (inch) + 2 inch) \times gallon/inch

$(\underline{10} \text{ in} + 2 \text{ in}) \times \underline{249.2} \text{ gal/in} = \underline{2792}$ gallon

5. Calculate total pumpout volume

A. Select pump size for 4-5 doses per day. Gallon per dose = gpd (see figure A-1) / doses per day = $\underline{600}$ gpd \div $\underline{5}$ doses/day = $\underline{120}$ gallons

B. Calculate drainback

1. Determine total pipe length, $\underline{20}$ feet

2. Determine liquid volume of pipe, $\underline{17}$ gal per ft (see figure E-20)

3. Drainback quantity = $\underline{20}$ ft (5B1) \times $\underline{17}$ gal per ft (5B2) = $\underline{34}$ gal

C. Total pump out volume = dose volume (5A) + drainback (5B3)

$\underline{120} \text{ gal} + \underline{34} \text{ gal} = \underline{154}$ Total gallon

number of bedrooms	Class I	Class II	Class III	Class IV
2	300	225	180	60%
3	450	300	218	of the
4	600	375	258	volumes
5	750	450	294	in the
6	900	525	332	Class I
7	1050	600	370	II, or III
8	1200	675	408	columns.

6. Float separation distance (using total pumpout volume)

Total pumpout volume (5C) \div gal/inch (2)

$\underline{154} \text{ gal} \div \underline{249.2} \text{ gal/in} = \underline{4.9}$ inch

7. Calculate volume for alarm (typically 2 to 3 inches)

Alarm depth (inch) \times gallon/inch (2) = $\underline{2}$ in \times $\underline{249.2} \text{ gal/in} = \underline{50}$ gal

8. Calculate total gallon = gallons over pump (4) + gallons pumpout (5C) + gallons alarm (7)

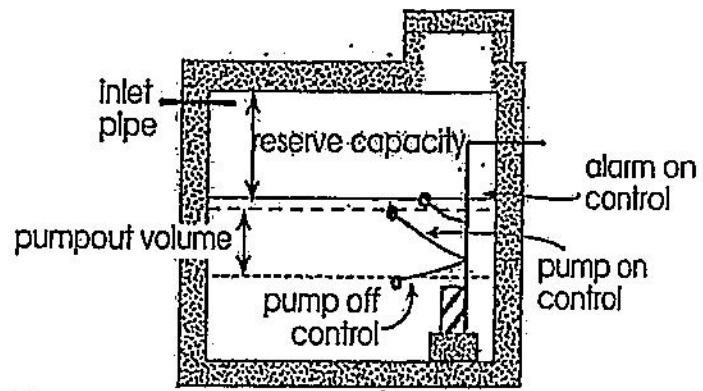
$\underline{2792} \text{ gal} + \underline{120} \text{ gal} + \underline{50} \text{ gal} = \underline{469}$ gallons

9. Total Tank Depth = total gallon (8) \div gallon/inch (2)

$\underline{469} \text{ gal} \div \underline{249.2} \text{ gal/in} = \underline{18.8}$ in

Pipe Diameter inches	Gallons per foot
1	0.045
1.25	0.078
1.5	0.11
2	0.17
2.5	0.25
3	0.38
4	0.66

Recommended:
 Calculate reserve capacity (75% the daily flow)
 Daily flow $\times .75 = \underline{600} \times .75 = \underline{450}$ gallons



I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.
Dave Spill (signature) L2006 (license #) 6/12/2019 (date)