

On-Site Rule Revision Issue: ADD PUMP CHAMBER SIZING TO OSS RULE (WAC 246-272A-0232) (Sewage tanks #2 of 3)

Problem statement

Currently there is no pump chamber sizing criteria in the rule. Recommended Standards and Guidance (RS&G) documents, published by WA DOH with assistance from the Technical Advisory Group, refer to pump chamber sizing. The most commonly used reference is in the Pressure Distribution (PD) RS&G.

As noted above, the most common pump chamber usage in WA relates to PD use. PD OSS has an extensive use in WA State. There are 35 Local Health Jurisdictions (LHJs) in the state. Each LHJ has the option to decide how they will implement the RS&Gs. The potential variation in sizing of pump chambers could be troublesome. A standard found in the rule could help take the variability away.

Options

- A. Add specific pump chamber sizing to the rule. This would require research.
- B. Add a general statement to the rule giving high priority to size pump chambers per the associated RS&G.
- C. Leave the pump chamber sizing criteria only in RS&Gs.

PROs/CONs

PROs	CONs
<ul style="list-style-type: none">• It adds consistency throughout the state.• It helps designers/installers know what to expect working in multiple LHJs.• It gives specific parameters to LHJs where uncertainty exists.	<ul style="list-style-type: none">• It probably would include the addition of definitions for different types of pump chambers.• It does not allow the option for different sizes of pump chambers for different types of uses. It may be difficult to create one-size-fits-all criteria. For example, pump chambers (basins) in intermittent sand filters, dosing to gravity, lift stations for solids to septic tanks, dosing chambers to proprietary products, etc.• It takes away some needed LHJ flexibility.• It takes away easier changes to sizing criteria as new technology dictates.

Recommendations

The ORRC Technical Subcommittee recommends that we add a new section to the Rule.

The new section:

- (a) A pump chamber* minimum volume is 1000 gallons;
- (b) the pump chamber design must always provide an internal volume to account for the design flow, full time pump submergence, space for sludge accumulation below the pump inlet and emergency storage volume of at least 75% of the design flow; and,
- (c) the pump chamber design should give high priority to the inclusion of design criteria found in the applicable RS&G or proprietary product design manual for any particular OSS component.

Supporting Research/Evidence

DOH explored only some states in this general geographical area for their pump chamber size requirements in rule. AK and ID had no specific information in rule. OR has specific pump chamber (dosing tanks) sizing criteria (below):

“Each dosing tank employing one or more pumps must have a minimum liquid capacity equal to the projected daily sewage flow for flows up to 1,200 gallons per day. The department will determine tank sizing for dosing tanks with projected daily sewage flows greater than 1,200 gallons per day. The liquid capacity of dosing tanks must be as measured from the invert elevation of the inlet fitting.”

Supporting information

1. On-site Sewage Regulations from AK, ID, OR.

*A specific definition for “pump chamber” is necessary to distinguish between other types of pump tanks, as the definition for pump tank found in WAC 246-272C is inclusive for all types of sewage tanks with pumps. The suggested definition language here for pump chamber is adapted from Kitsap Public Health District.

“Pump chamber --- a watertight receptacle placed after a septic tank or other treatment facility that contains the required controls and alarms to convey sewage effluent to a dispersal component.”

Another associated definition adaptation from Kitsap Public Health District is for “pump basin.” Including this in 246-272A helps makes the distinction between pump chambers and other sewage tanks with pumps.

“Pump basin --- a watertight receptacle that contains a pump to convey sewage from a limited use area, that is separate from the main wastewater sewer pipe leaving a structure, to the main treatment component of an onsite sewage system; typically much smaller than a pump tank and separate from the main sewer pipe due to elevation restrictions. Pump basins are intended for limited, specialized uses, and not intended as a replacement or substitute for a pump chamber.