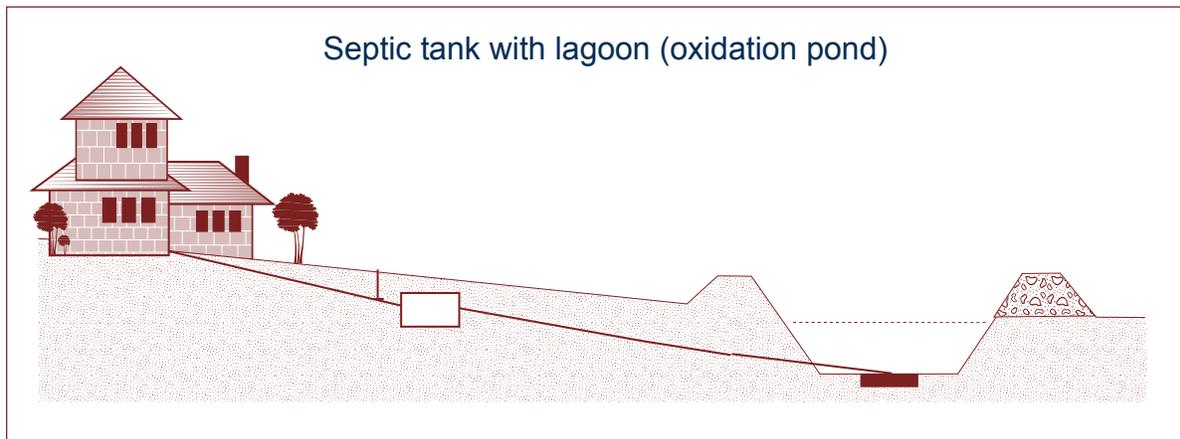


LAGOONS (OXIDATION PONDS)



WHAT ARE THEY?

Oxidation ponds or lagoons are a secondary on-site sewage treatment method. This method utilizes a septic tank for primary treatment with the effluent being discharged into a lagoon. The size of the lagoon is calculated by using a formula that includes the estimated water usage, rainfall, and pan evaporation for each site. Lagoon size increases from west to east across the state. Lagoons are a much more effective treatment method in central and western Oklahoma. Lagoon sizes in the southeastern counties of Oklahoma can be quite large due to the high rainfall and low

pan evaporation. DEQ regulations do not allow lagoons to be constructed on tracts of land that are less than

2 ½ acres in size. Lagoons are a very effective treatment method and relatively easy to maintain.

HOW DO THEY WORK?

Solids in the wastewater are retained or broken down in the septic tank before the effluent is discharged into the lagoon. The effluent is discharged under the surface of the water to the center of the lagoon. This allows even distribution and more effective treatment. Exposure to sunlight and oxygen enables aerobic bacteria to digest organic matter in the effluent. Lagoons are designed to operate with

three to five feet of wastewater. Volume is reduced through evaporation. Lagoons should be built in locations where trees will not restrict sunlight exposure or air movement. A dike is constructed on all sides of the lagoon to prevent inflow of surface water and discharge of wastewater. Lagoons must be constructed in clay soil or be lined to prevent leakage. Lagoons are designed to have no discharge to the environment. If properly designed, operated, and maintained, lagoons normally have no undesirable odors. Lagoons provide effective treatment with minimal threat to the environment.

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL COMPLAINTS AND LOCAL SERVICES

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MAINTENANCE

A permanent vegetative cover should be established on the lagoon dike as soon as possible to prevent erosion of the dike. If the lagoon is not constructed during the normal growing season, a temporary vegetative cover should be

planted, or other erosion control measures should be utilized.

Vegetative growth should be controlled to assure necessary sunlight exposure and air movement. Grass should be

mowed on a regular basis during the growing season. No trees should be allowed to grow around the lagoon.

A fence shall be constructed to discourage entry and control access.

LAGOONS

Advantages

- Low operational and maintenance cost.
- Lagoons provide effective treatment with minimal threat to the environment.
- Work well in clay soils where conventional subsurface on-site absorption fields will not work.

Disadvantages

- Lagoons must be constructed in clay soil or be lined to prevent leakage.
- May overflow occasionally during extended periods of heavy rainfall.
- If there are extended periods of overcast windless days, a rare occasion in Oklahoma, offensive odors may occur for a brief time. Lagoons usually recover rapidly if this occurs.
- Can not be installed on a small lot. Takes up a relatively large space for only one use.
- Lagoons are not aesthetically acceptable to some people. Some people consider lagoons unsightly and unsafe.
- As with any other open body of water, there is some potential danger. Although lagoons are required to be fenced, this does not always prevent access by people or pets.