Welcome

Water Rules 2011
Significant Changes

OAC Chapter 3701-28

Rules 12, 13, 14, 15, and 16

Residential Water and Sewage Program

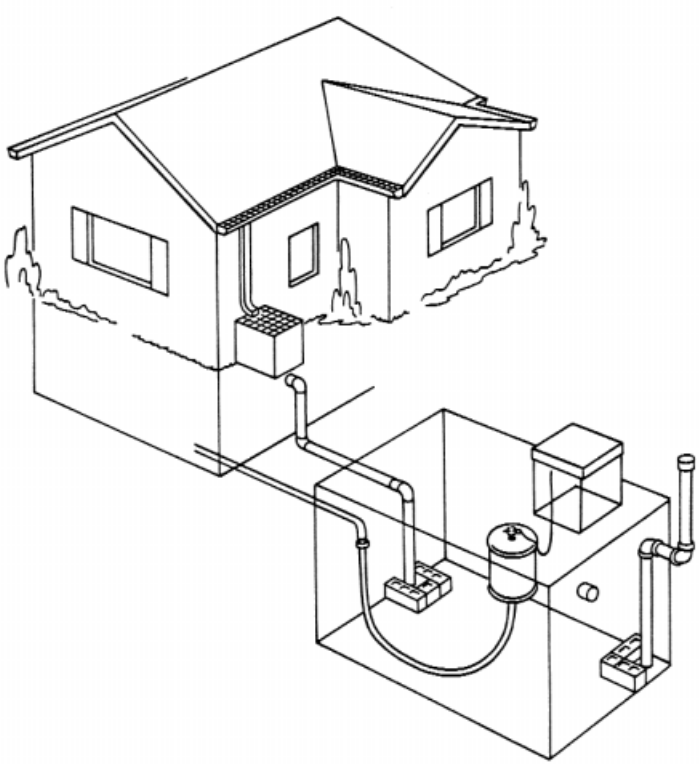
Rule Updates for Cisterns, Hauled Water Storage Tanks, Springs, Ponds, and Water Haulers
Continuous Disinfection and Filtration

March 2011

Bureau of Environmental Health

Residential Water and Sewage Program

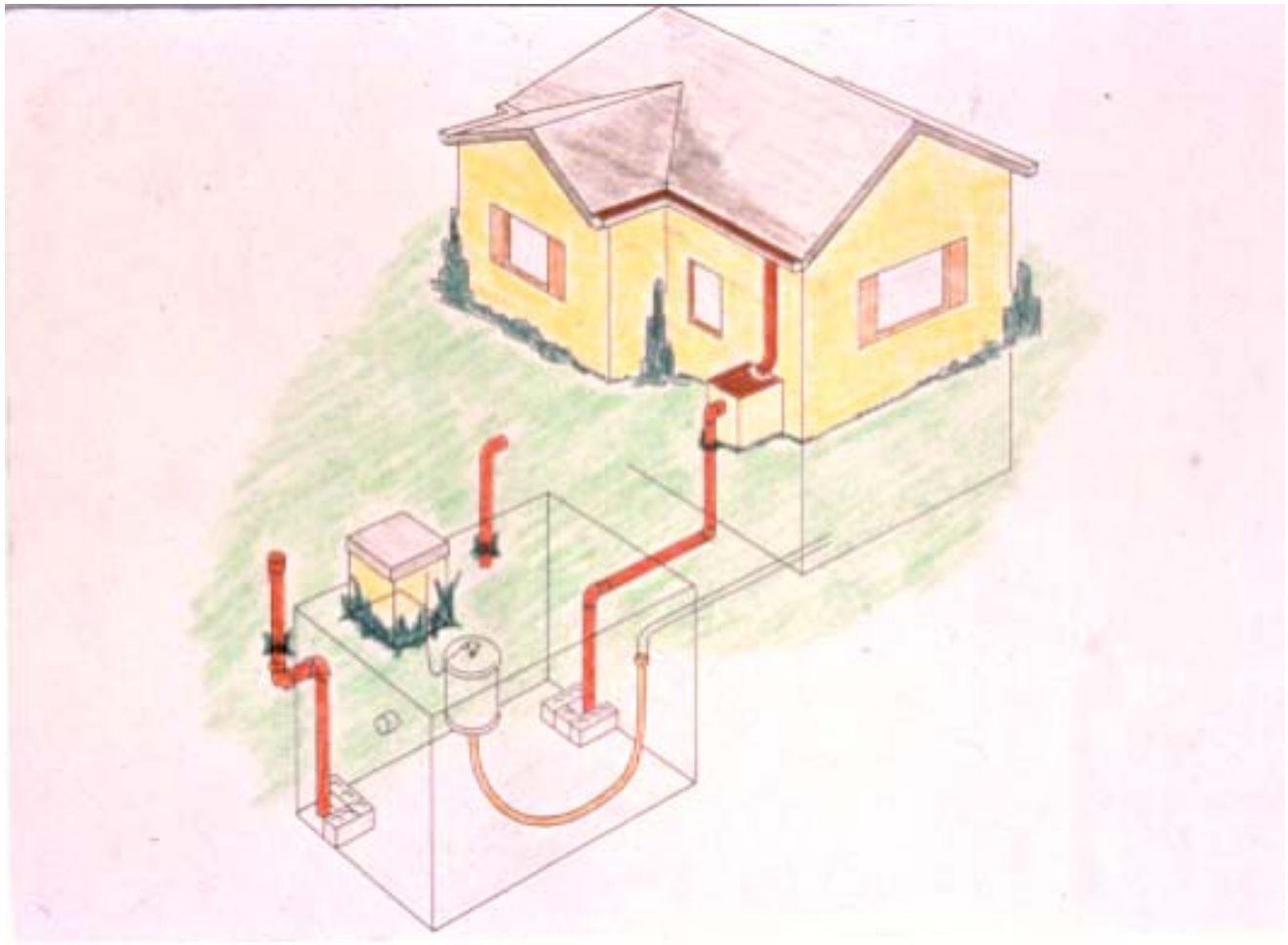
Cisterns and Hauled Water Storage Tanks
OAC 3701-28-12



OAC 3701-28-12

Ohio's Typical Private Water System Cistern

- Ohio uses the term cisterns to refer to a private water system used for rainwater harvesting.



OAC 3701-28-12 Cisterns:

- Can share common wall with foundation if allowed by local building code -28-10(C).
- Water intake for the pump be located no less than four inches from the bottom of the tank.
- Clarification on debris traps and roof washers designed to remove first 10 gallons of rain run-off.

OAC 3701-28-12

Cisterns

- Start-up of disinfection procedures
- Proper abandonment procedures of tanks now in this section *not in the well sealing section*.

OAC 3701-28-12

Cisterns: Supplementing Other Indoor Uses

- **In OHIO if a cistern (or any other auxiliary water source) is used to supplement water for toilet flushing or laundry it is still regulated by the local health department as a private water system. ---**

  -Whether the main source is a public water system or another private water system.
- *This was also the legal interpretation under the previous rules.*
- **We added clarification to the new rules in the definition of private water system.**

OAC 3701-28-12 Cisterns

(refer to OAC 3701-28-07)

Cisterns and hauled water storage tanks may **now share a common wall with a foundation.** ***As long as it meets local building codes or is signed off by an engineer.*** *(-07(C)2)*

Still not to be located within a foundation.

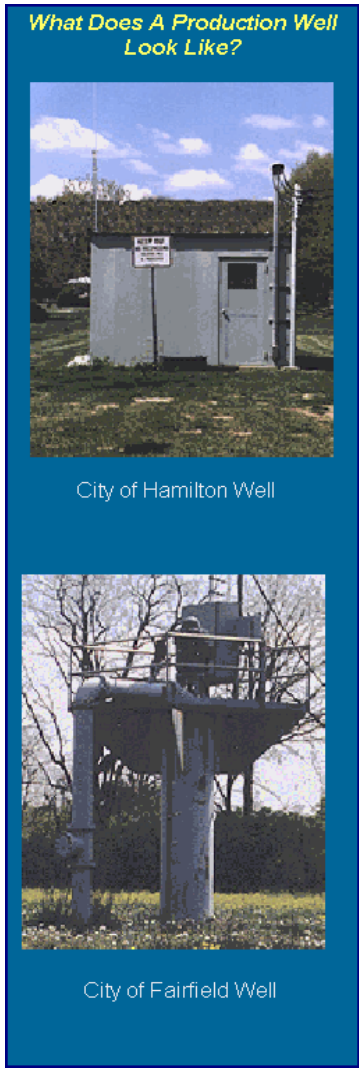
A deck or porch may be installed over a *cistern or hauled water storage tank* as long as access is maintained. (-12(F))

OAC 3701-28-12
Cistern and Hauled Water Storage Tank Pump Installation

- Pump intake shall be a minimum of **4 inches** above bottom of tank**. When multiple tanks are used this applies only to the tank closest to the house.**

OAC 3701-28-12 Cisterns and 3701-28-15 Disinfection

- Water obtained from cisterns must be continuously disinfected by an approved method **and have cyst reduction filters install (except when UV is used, at least 5 micron filter required)**.



Springs

OAC 3701-28-13

- A spring is a shallow aquifer that discharges naturally to the surface of the ground.

Additional definition:

- ***<u>New</u>* : Also regarded as water that is intercepted from ten feet *or less* below ground**

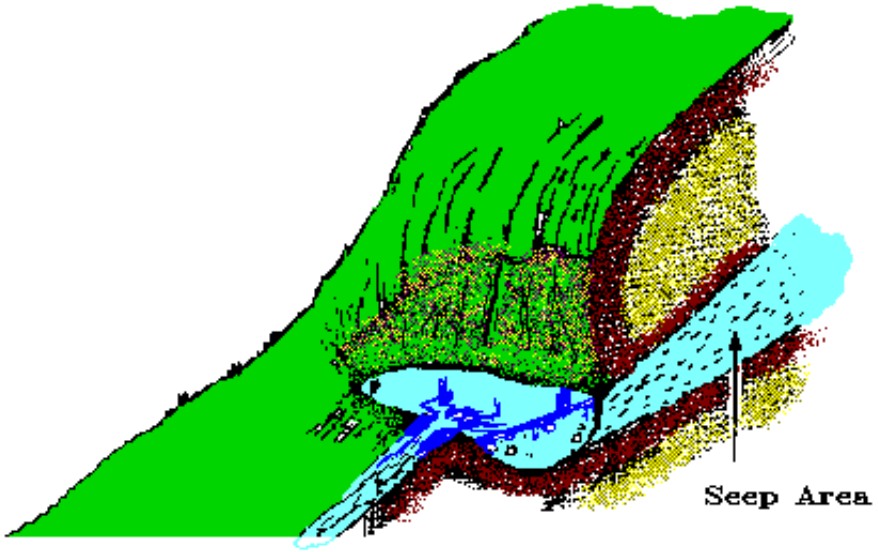


Figure 2
Spring flow from pipe; utilization impacts to saturated soil and vegetation.

OAC 3701-28-13

Spring: Added to Definition

- ***Big Change - water that is intercepted at a depth no greater than 10 feet below the surface.***

- ***Anything deeper than 10 feet is a well and must be constructed in compliance as a well in rules 3701-28-9 and 10.***

OAC 3701-28-13
Springs

- Spring box shall be built with substantial and watertight materials…..
  - Concrete : **Same as cistern ASTM C-913**
  - Other suitable materials:
    - NSF approved thermoplastic
    - Fiberglass, etc

- **OAC 3701-28-13 (I)**
- **Pipe used to intercept spring discharges and shallow groundwater of ten feet or less below the ground surface shall be made of material suitable for potable water that meets ANSI/NSF standard sixty-one or materials approved by the department for potable water.**

OAC 3701-28-13 springs.

OAC 3701-28-15 Continuous Disinfection

All water obtained from a spring (to be used for potable supply) shall be continuously disinfected and...

have cyst reduction filters installed per

Rule 3701-28-15

(except when UV is used, at least 5 micron filter required).

Spring Disinfection

- The disinfection system for a spring is designed the same as that of a cistern.

Ponds:
OAC 3701-28-14

- **LHDs can decide if they want to allow the use of Ponds as Private Water System in their jurisdiction.** *Local Health District has exclusive discretion* for allowance of pond use.
- **No sharing of pond or watershed by multiple owners.**
- **No minimum water shed size specified. Based on local conditions.**
- **Minimum pond size based on surface area of one quarter of an acre regardless of the pond shape.**
- **Smaller ponds required larger percent of total**

Ponds: OAC 3701-28-**14**

- **Specifications for Rapid pressurized sand filters systems now added to Rules.**

- **Following the Rapid sand filter now have *options* to use "stepped" cartridge filters (10, 5, and 1 micron filters) *or* coagulation. (L)(2)(b). Filter housings *must be labeled for proper size filters!***

- **200 gallons of additional storage now only required in conjunction with *slow sand filters*. *(Does not provide the same tank function as the retention tank required for chemical disinfection)***

Ponds:
OAC 3701-28-**14**

- **Ponds shall be considered as a source of water for human consumption *at the discretion of the board of health*, based on available ground water sources being adequate**…
- A pond shall not be considered acceptable for a private water supply when a public water supply is available.

Ponds
OAC 3701-28-14

- When existing ponds are being used as a private water system the *filter and treatment systems* have to be brought into compliance when the system is *repaired or altered*.

Ponds

OAC 3701-28-14

- **Minimum pond size should be ¼ acre and have 50 % of the pond as least 8 feet deep up to ½ acre in size.**

Watershed
OAC 3701-28-14

- ***No longer require*** three acres per acre-foot of storage where to watershed is the sole source of recharge .(1 acre-foot is about 338,000+ gallons)
- *However*, **OAC 3701-28-14(D)(1) "The watershed shall be of sufficient size to meet the requirements for pond water recharge based on local conditions as *determined by the local health department*. The board of health *may* require the watershed plan to be submitted by a professional engineer or soil scientist in accordance with 3701-28-03 (E) and (F).**
- May take into account spring flow, well recharge, or additional roof area.

Disinfection **and Cyst Filtration** System

OAC 3701-28-15

For Continuous Disinfection of Private Water Systems can use only Chlorine, Iodine, UV, or Ozone and **must now include cyst reduction filters (except when UV is used, at least 5 micron filter required).**

Continuous disinfection and cyst filtration.

OAC 3701-28-15

- Continuous disinfection for ponds, springs, cisterns, **drive points, wells less than 25 ft. casing, screens or filter packs up to 10 feet from ground surface**

- ***Cyst filtration* also required when continuous disinfection (except when UV is used, at least 5 micron filter required).**
- **installed for springs, cisterns, drive points, wells less than 15 feet of casing, wells with filter packs to within 10 ft of ground surface.**
  - Cyst filters meet NSF Std. 53 for **Chlorine, Ozone or Iodine Systems**
  - **Cyst filters installed in parallel must maintain at least 10 gpm.**

- **UV Systems use *5 micron absolute filter* (or smaller) in accordance with NSF Standard 55 for Class "A" UV systems.**

OAC 3701-28-15 Disinfection and Cyst Filtration and OAC 3701-28-10 (C)(6)c *Well* Construction

Casing shall not extend less than 25 feet unless there is no usable water deeper. Contractor must always notify the local health district whenever there is going to be less than 25 feet of casing.

Water Wells with less than 15 feet of casing require continuous disinfection *and* cyst reduction (unless using UV for Disinfections, then it's a 5 micron filter).

- **Water wells between 15 and 25 feet casing shall have continuous disinfection but are not required to have cyst reduction**
- **or… doubling the isolation distance in accordance with OAC 3701-28-10 (C)(6)c**

Drive Points regardless of depth

***Unless* doubling the isolation distance in accordance with**

OAC 3701-28-10 (C)(6)c

3701-28-15
Continuous disinfection and cyst filtration

- For Private Water Systems using chlorination the chlorine CT value *is still four*, but **now has a minimum residual of 0.4 ppm** chlorine residual after **8 minutes** of contact.

- (F)(2)(**b)Require minimum 120 gallon retention tank.**
- Can be smaller if design ensures adequate contact time.

- Note: water hauled in from a public source is *still 0.2 ppm* for chlorine.

- The disinfection residual requirements did not change for iodine or ozone.

OAC 3701-28-15 Disinfection and Cyst Filtration

- **Disinfection and filtration equipment are now required to be labeled for function such as "retention tank for the disinfection system" and the required absolute filter size..**

- **The solution tank for chlorine and iodine systems are now required to be labeled with the warning**
  - ***"Failure to maintain the solution in the tank at concentrations sufficient to ensure continuous disinfection of the household water supply increases the possible health risk to the users".***
- *Can use a contractor business label or an ODH provided label*.
- Enforced by the LHD during final inspection.

Label for Disinfectant Solution Tank

DISINFECTANT SOLUTION TANK

FAILURE TO MAINTAIN THE SOLUTION IN THE TANK AT SUFFICIENT CONCENTRATION SUFFCIENT TO ENSURE CONTINUOUS DISINFECTION OF THE HOUSEHOLD WATER SUPPLY INCREASES THE POSSIBLE HEALTH RISK TO THE USERS!

Ohio Administrative Code Rule 3701-28-15

Call your local health department for more information.

*Contractors can use a label with *their business contact information* instead of one provided by ODH as long as the failure warning is quoted from the Rules and the equipment function is stated.

OAC 3701-28-15 Disinfection and Cyst Filtration

Label for Retention tank

RETENTION TANK FOR DISINFECTION SYSTEM

Ohio Administrative Code Rule 3701-28-15

Call your local health department for more information.

OAC 3701-28-15 Disinfection and Cyst Filtration

Label for Filter Cartridge Housings

REPLACEMENT FILTER

CARTRIDGE MUST BE

ABSOLUTE 1 MICRON

FOR PROPER REDUCTION

OF PROTOZOANS AND CYST.

Ohio Administrative Code

Rule 3701-28-15

CALL THE LOCAL HEALTH

DEPARTMENT FOR MORE

INFORMATION

OAC 3701-28-15 Disinfection and Cyst Filtration

Label for Filter Cartridge Housings

REPLACEMENT FILTER CARTRIDGE

MUST BE *ABSOLUTE 5 MICRON*

INLINE BEFORE THE 1 MICRON FILTER

Ohio Administrative Code Rule 3701-28-15

CALL THE LOCAL HEALTH DEPARTMENT

FOR MORE INFORMATION

OAC 3701-28-15 Disinfection and Cyst Filtration

Label for Filter Cartridge Housings

REPLACEMENT FILTER CARTRIDGE

MUST BE *10 MICRON* IMMEDIATELY

AFTER THE PRESSURIZED SAND FILTER

INLINE BEFORE ANY SMALLER FILTERS.

Ohio Administrative Code Rule 3701-28-15

CALL YOUR LOCAL HEALTH DEPARTMENT

FOR MORE INFORMATION

Labels for Filter Systems

PRESSURIZED RAPID SAND FILTER
POND FILTRATION SYSTEM
Ohio Administrative Code Rule 3701-28-14
Call your local health department for more information.

SLOW SAND FILTER
POND FILTRATION SYSTEM
Ohio Administrative Code Rule 3701-28-14
Call your local health department for more information.

COAGULATION SOLUTION TANK FOR REDUCTION OF TURBIDITY
POND FILTRATION SYSYTEM
Ohio Administrative Code Rule 3701-28-14
Call your local health department for more information.

OAC 3701-28-16

Water Hauling

- Add requirement for local registration for water haulers
- Water hauling equipment cannot be used to transport surface water (not from public source)
- Sets water hauling tank specifications
  - Stainless steel
  - Aluminum wrought or cast alloys
  - Food grade plastic tanks

3701-28-16 (C) Period for Local Water Hauler Registration

- "All water haulers shall **register** annually with the health district in which the applicant's principal place of business is located. The period of registration shall begin on January first of each calendar year and expire on December thirty-first of each calendar year."

- Same inspection of each truck and a fee per truck.

- **(E)"A water hauler's transportation equipment is subject to inspection by the health district at any time."**

OAC 3701-28-16
Water Hauling

- OAC 3701-28-16 is for the regulation of equipment (trucks) used to deliver water to a *private water system*.

HOWEVER…

- **Private water system will now include PUBLIC hauled water systems that are regarded as *exempt* by OEPA such as a restaurant or church that receives hauled water and does not have continuous disinfection.**

- ***Note: When continuous disinfection is added to a exempt public hauled water storage tank, it no longer exempt and is again regulated by OEPA.***

OAC 3701-28-16

Water Haulers

(D)(2) The transportation equipment shall not be used to transport or distribute water from streams, rivers, springs, ponds, lakes or other water source not approved as a public water system for the use in a private water system;

Water Haulers

- **OAC 3701-28-16(D)(1)**

- **The health district may establish a fee for hauling water from an unapproved water source to a private water system;**

OAC 3701-28-16

Water Hauling: Aluminum

No Longer require a variance

- There are no aluminum products listed on NSF standard 61, other than compounds used for water treatment. However, NSF Standard 51 certifies specific products that may include aluminum in their construction for contact with food. NSF Standard 51 does not certify the aluminum.

Water Hauling: Aluminum
3701-28-16(D)(4)

- **The aluminum used in the products *must* be one of the following grades that can be found in the actual standard:**
- **Wrought Alloys**
- **1000-6000 series**
- **Casting Alloys**
- **218, 308, 319, 332, 356, 360, 413, B443, 514, 520, 713**
- **No other alloys are acceptable for contact with food.**
- **NSF does not test the alloys for compliance but relies on accurate information from the manufacturer.**

Training
Ohio Administrative Code
Chapter 3701-28

Questions??