Geauga Public Health

Private Water Systems

HOW WELL DO YOU KNOW YOUR WELL

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Geauga Public Health
PREVENT. PROMOTE. PROTECT

Presentation Outline

- Water facts
- Types of water systems
- Reading a Well Log
- Components of a well
- Well maintenance and disinfection
- Water testing
- Well water quality interpretation tool

Ohio Department of Health

Ohio Environmental Protection Agency

GEAUGA PUBLIC HEALTH

Private Water NETWORK

Geauga Soil and Water Conservation District

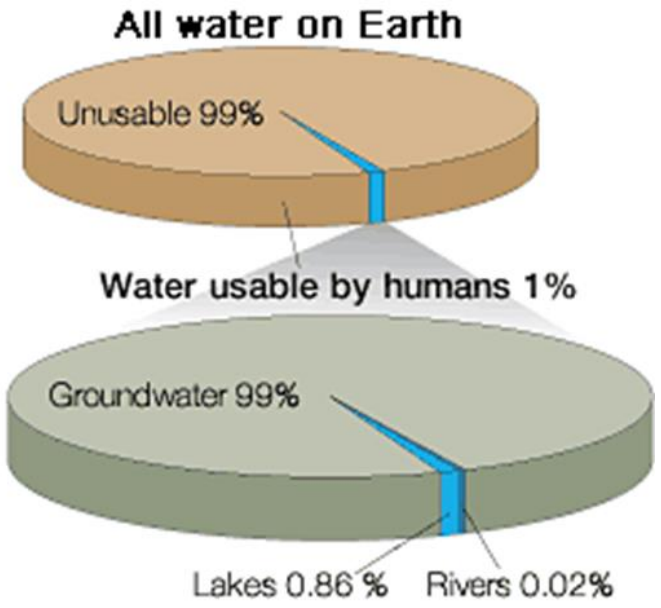
Water Facts

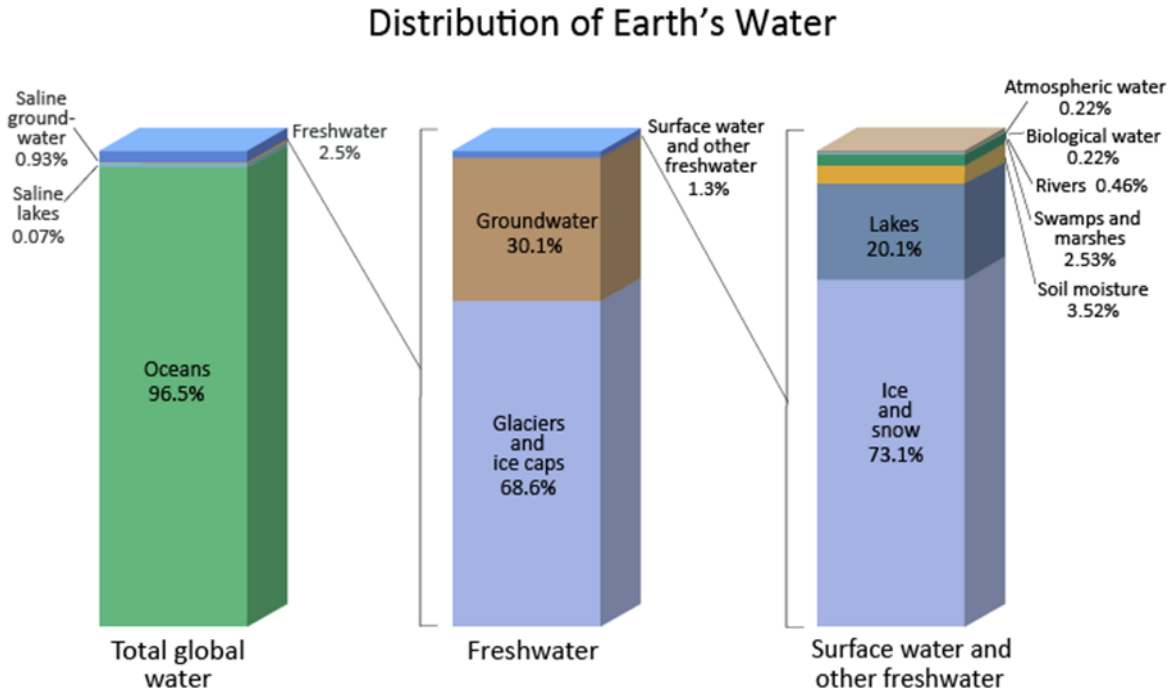
70% of the Earth's surface is covered with water

97% of this water is found in the oceans or is saline

3% is ground or surface water

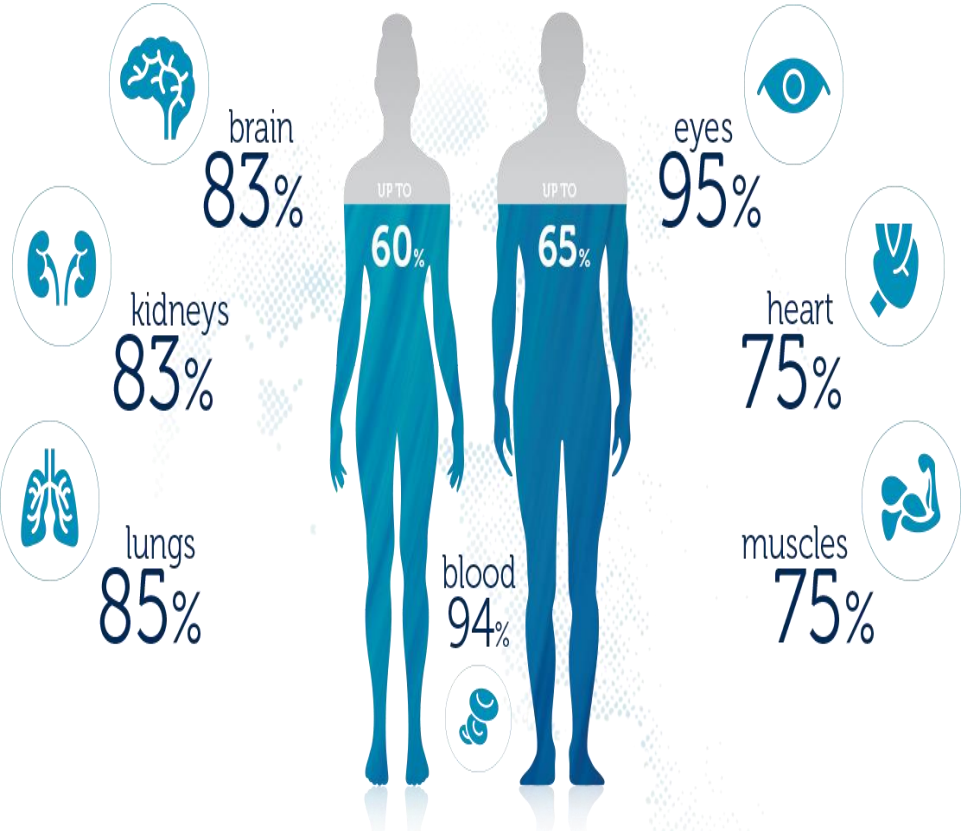
44% of the U.S population rely on groundwater as a primary water source



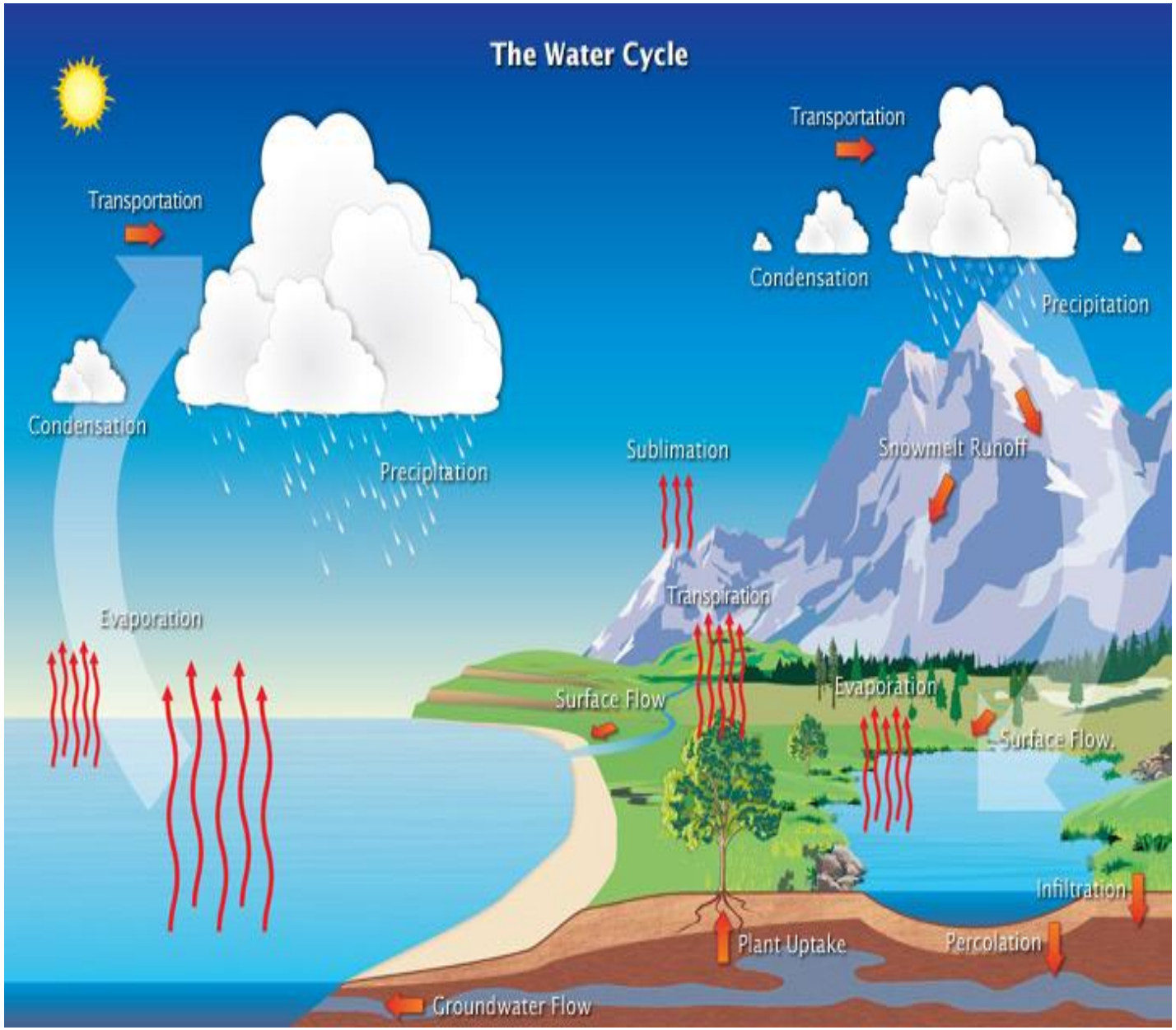


Water Facts

- 70% of the human body is made up of water
- Essential to all living things
- Universal Solvent
  - Can dissolve more substances than any other known liquid including Sulfuric Acid
- It’s the most important resource we have on this planet



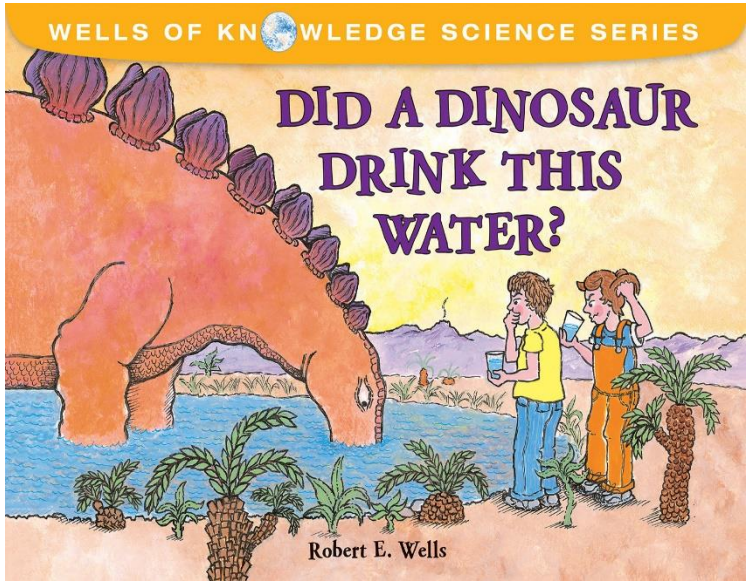
Where Does My Water Come From?



- Powered by the sun's energy

- Continuous exchange of moisture between the oceans, atmosphere and the land.

- Over span 100yrs a water molecule spends 98yrs in the ocean. 20 months as ice. 2 weeks in lakes and rivers. Less than a Week in the atmosphere



Two Categories of Water Systems

- **Public Water System**
  - Regulated by the Ohio EPA
  - Defined by the number of service connection or the number of people served.
    - At least 15 service connections.
    - At least 25 people for at least 60 days each year.
    - Schools, Nursing Homes, Mobile Home parks.

- **Private Water System**
  - Regulated by the Ohio Department of Health
  - Households and business that serve less than 25 people per day for less than 60 days per year.
  - Bed & Breakfast, Small Day Care, Small Churches

Basic Types of Private Water Systems

- Rotary/Drilled Well
- Dug Well
- Point Well
- Cisterns
- Hauled Water Storage Tank
- Ponds
- Approximately 29,000 PWS

  In Geauga

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY

WATER WELL DATABASE

www.waterwells.ohiodnr.gov

THE OHIO WATER WELL DATABASE

Welcome to the Ohio Water Well Database. This database contains the records of 893,683 water wells and 121,483 well sealing reports filed in the state of Ohio. Ohio Revised Code 1521.05 requires a water well record be filed with the Ohio Department of Natural Resources for any well that is drilled, regardless of design or method of construction, for the purpose of:

- Removing groundwater from or recharging water into an aquifer, excluding subsurface drainage systems installed to enhance agricultural crop production or urban or suburban landscape management or to control seepage in dams and levees;
- Determining the quantity, quality, level, or movement of ground water in or the stratigraphy of an aquifer, excluding borings for instrumentation in dams, levees, or highway embankments;
- Removing or exchanging heat from ground water, excluding horizontal trenches that are installed for water source heat pump systems.

Drillers/Contractors seeking to file a well log or well sealing report, please login using the menu at the top of your screen.

WHAT SEARCH MODULE WOULD YOU LIKE TO USE?

INTERACTIVE SEARCH

Find records using quick or complex queries and interactive map tools.

Recommended

CLASSIC SEARCH

Find records using simple queries of single or multiple database fields.

Simple Queries

DNR 7802.05e

WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources
Division of Geological Survey, 2045 Morse Road, Columbus, Ohio 43229-6605
Phone (614) 265-6576

Well Log Number 3020421
Page 1 of 1 for this record.

WELL LOCATION

County GEAUGA Township BAINBRIDGE

JEFF DUNAY
Owner/Builder

18526 AMBER
Address of Well Location

City CHAGRIN FALLS Zip Code +4 44023
Permit No. 2071018 Section; *and/or* Lot No.
Use of Well DOMESTIC

Coordinates of Well (Use only one of the below coordinate systems)

Latitude, Longitude Coordinates
Latitude: 41.365434 Longitude: -81.303875
Elevation of Well in feet: 1167.8 +/- ft.
Datum Plane: ☐ NAD27 ☐ NAD83 Elevation Source DIGITAL MAP
Source of Coordinates: GPS

Well location written description:

Comments on water quality/quantity and well construction:
Broken sandstone - took allot of extra grout.
Lost mud circulation in the broken sandstone.

WELL TEST *

Pre-Pumping Static Level 47 ft. Date 1/28/2025
Measured from GROUND LEVEL
Pumping test method AIR
Test Rate 20 gpm Duration of Test 1 hrs.
Feet of Drawdown 43 ft. Sustainable Yield 20 gpm
*(Attach a copy of the pumping test record, per section 1521.05, ORC)
Is Copy Attached? ☐ Yes ☒ No Flowing Well? ☐ Yes ☒ No

PUMP/PITLESS

Type of pump Capacity gpm
Pump set at 100 ft. Pitless Type
Pump installed by HARPER WELL & PUMP

I hereby certify the information given is accurate and correct to the best of my knowledge.

Drilling Firm SOUTHWIND DRILLING COMPANY
Address 8480 S GIRDLE RD
City, State, Zip MIDDLEFIELD OH 44062
Signed BRIAN R. WILSON (Filed Electronically) Date 1/29/2025

ODH Registration Number 001504 Last Revised on 1/29/2025

CONSTRUCTION DETAILS

Drilling Method: ROTARY

BOREHOLE/CASING (Measured from ground surface)

1 Borehole Diameter 9.63 inches Depth 69 ft.
Casing Diameter 6 in. Length 70 ft. Thickness 0.315 in.
2 Borehole Diameter 5.88 inches Depth 115 ft.
Casing Diameter in. Length ft. Thickness in.
Casing Height Above Ground 1 ft.
Type 1: PVC
Joints 1: SOLVENT

SCREEN

Diameter in. Slot Size in. Screen Length ft.
Type Material
Set Between ft. and ft.

GRAVEL PACK (Filter Pack)

Material/Size Vol/Wt. Used
Method of Installation
Depth: Placed From: ft. To: ft.

GROUT

Material BENTONITE SLURRY Vol/Wt. Used 950 # / 456 GAL.
Method of Installation PUMPED WITH TREMIE PIPE
Depth: Placed From: 0 ft. To: 67 ft.

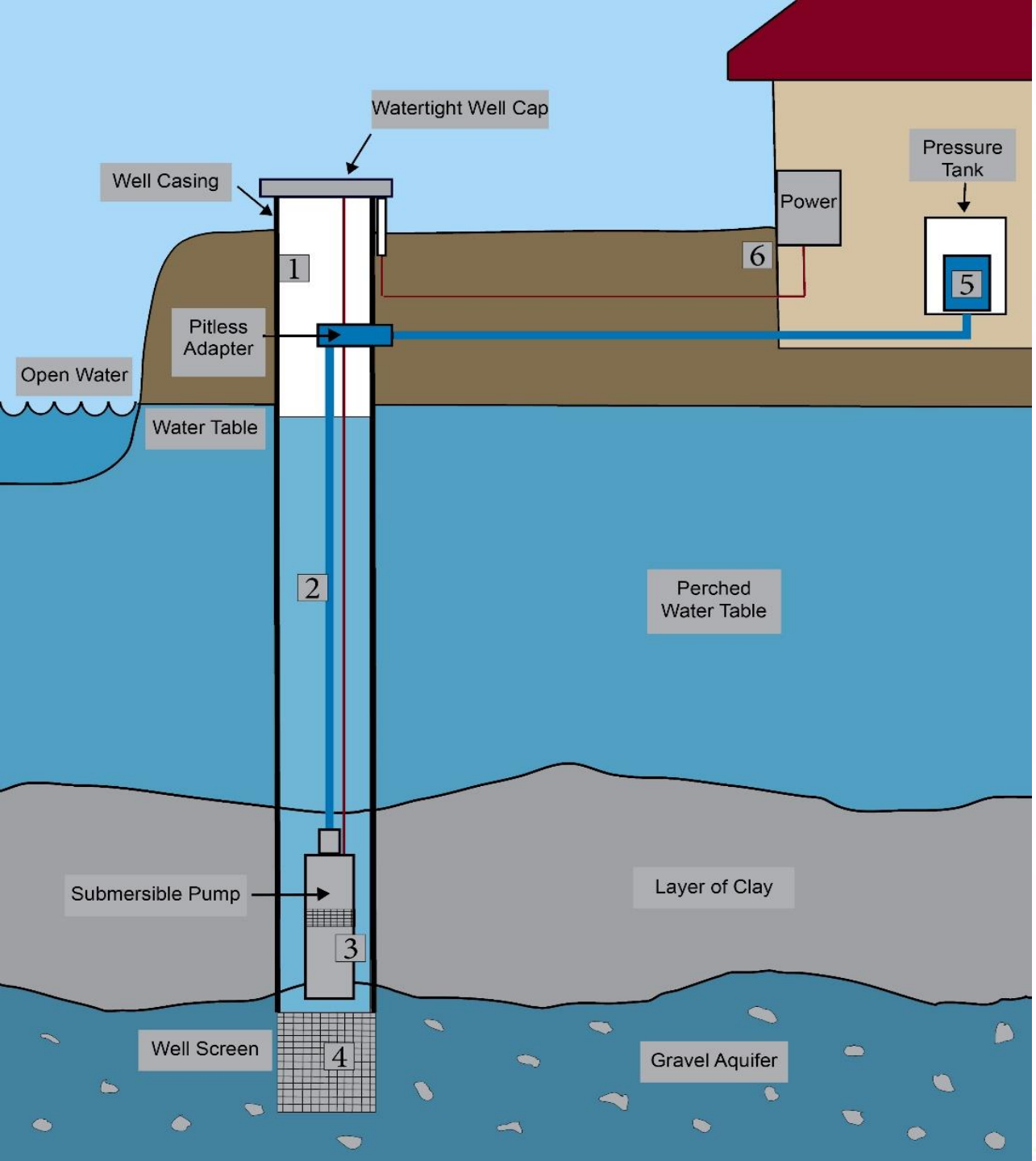
DRILLING LOG*

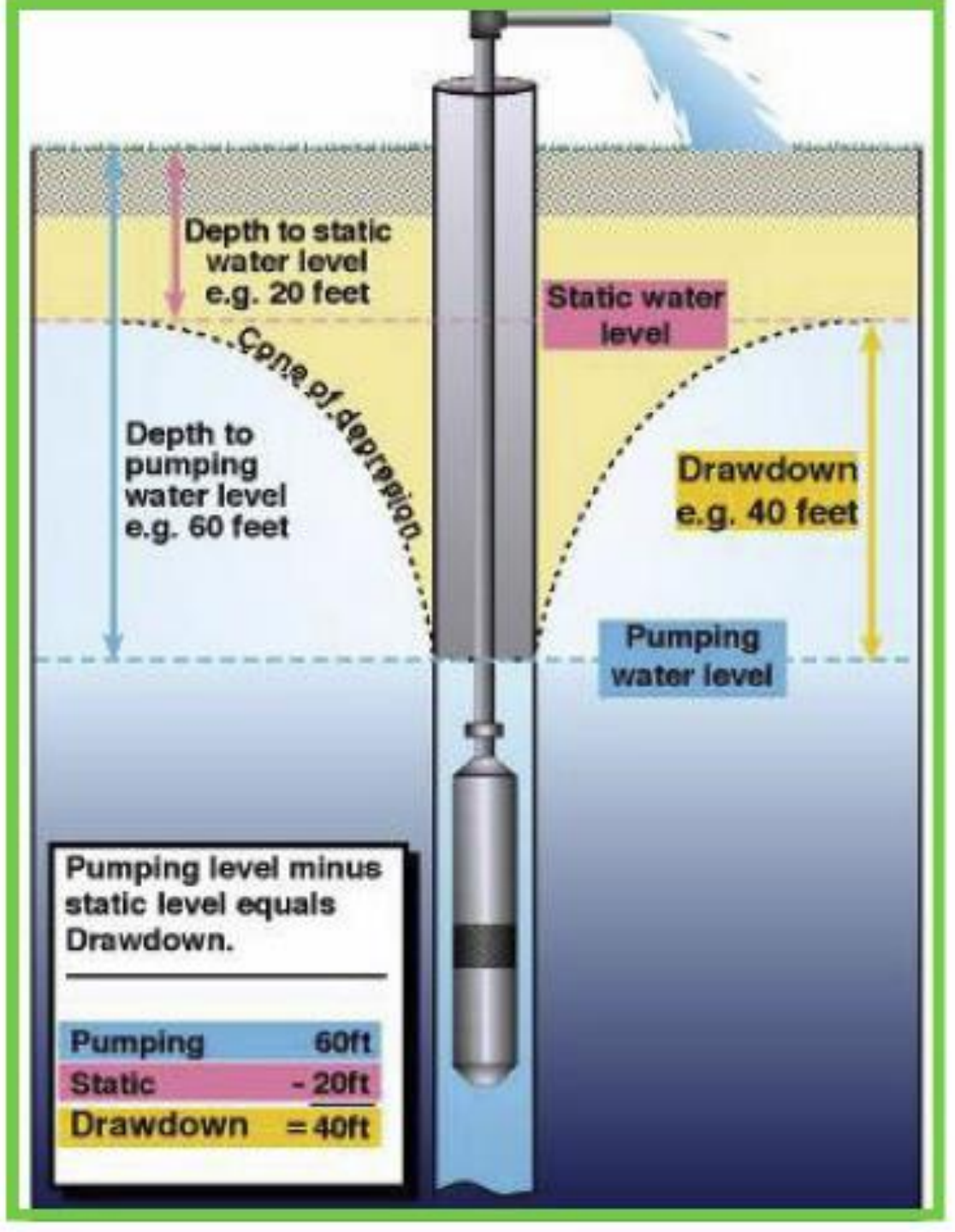
FORMATIONS INCLUDE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.

Color	Texture	Formation	From	To
BROWN		CLAY & GRAVEL	0	27
BROWN		SAND & GRAVEL	27	45
	BROKEN	SANDSTONE	45	60
		SANDSTONE	60	94
GRAY		SHALE	94	100
		SANDSTONE	100	115
		WATER AT	75	115

Aquifer Type (Formation producing the most water.) SANDSTONE
Date of Well Completion 01/28/2025 Total Depth of Well 115 ft.

Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.
Distribute copies of this record to Customer, and Local Health Deptartment.

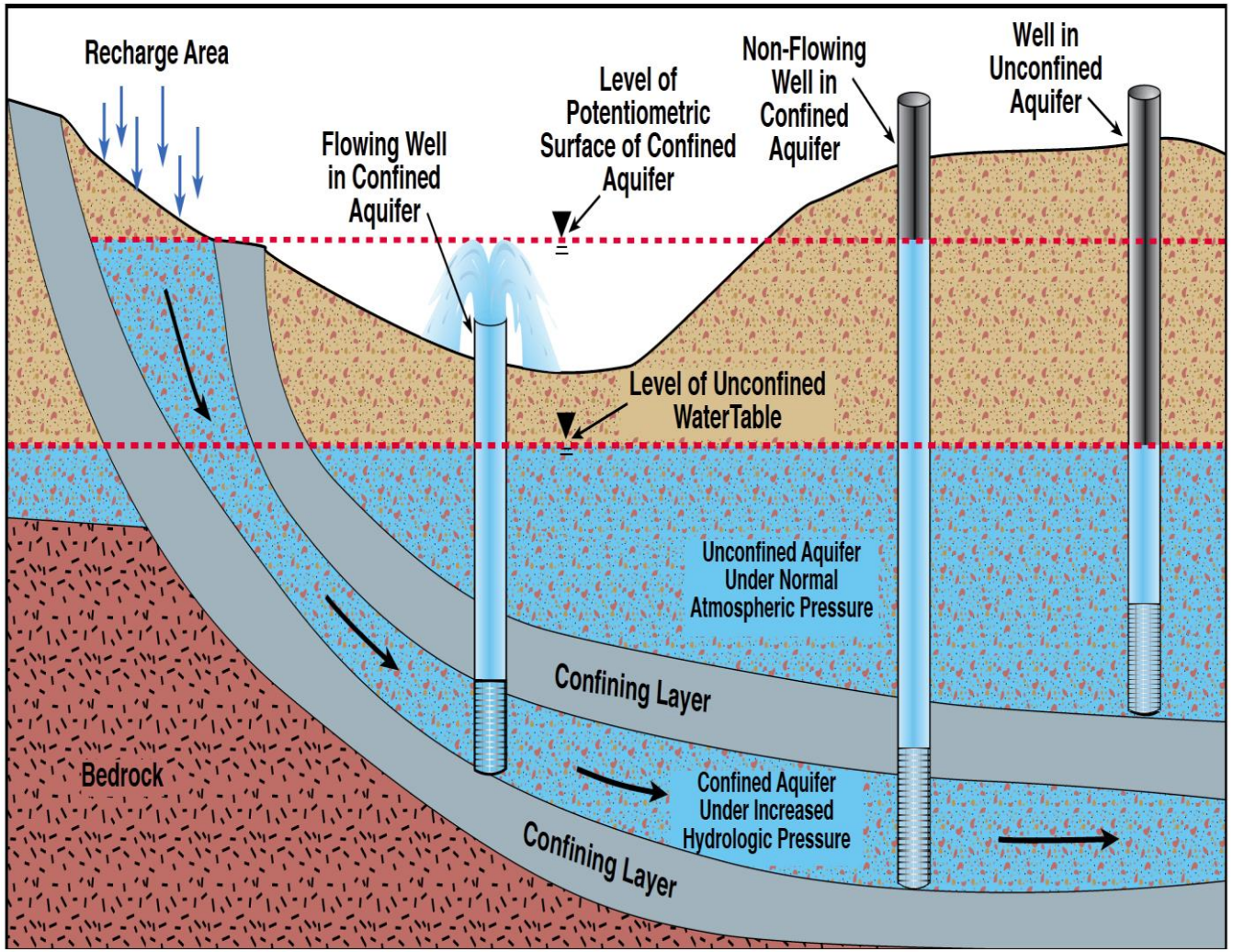

Watertight Well Cap
Well Casing
Pressure Tank
Power
1
6
5
Pitless Adapter
Open Water
Water Table
2
Perched Water Table
Submersible Pump
Layer of Clay
3
Well Screen
4
Gravel Aquifer


Depth to static water level e.g. 20 feet
Static water level
Cone of depression
Depth to pumping water level e.g. 60 feet
Drawdown e.g. 40 feet
Pumping water level
Pumping level minus static level equals Drawdown.
Pumping 60ft
Static - 20ft
Drawdown = 40ft

Water Well Performance Testing

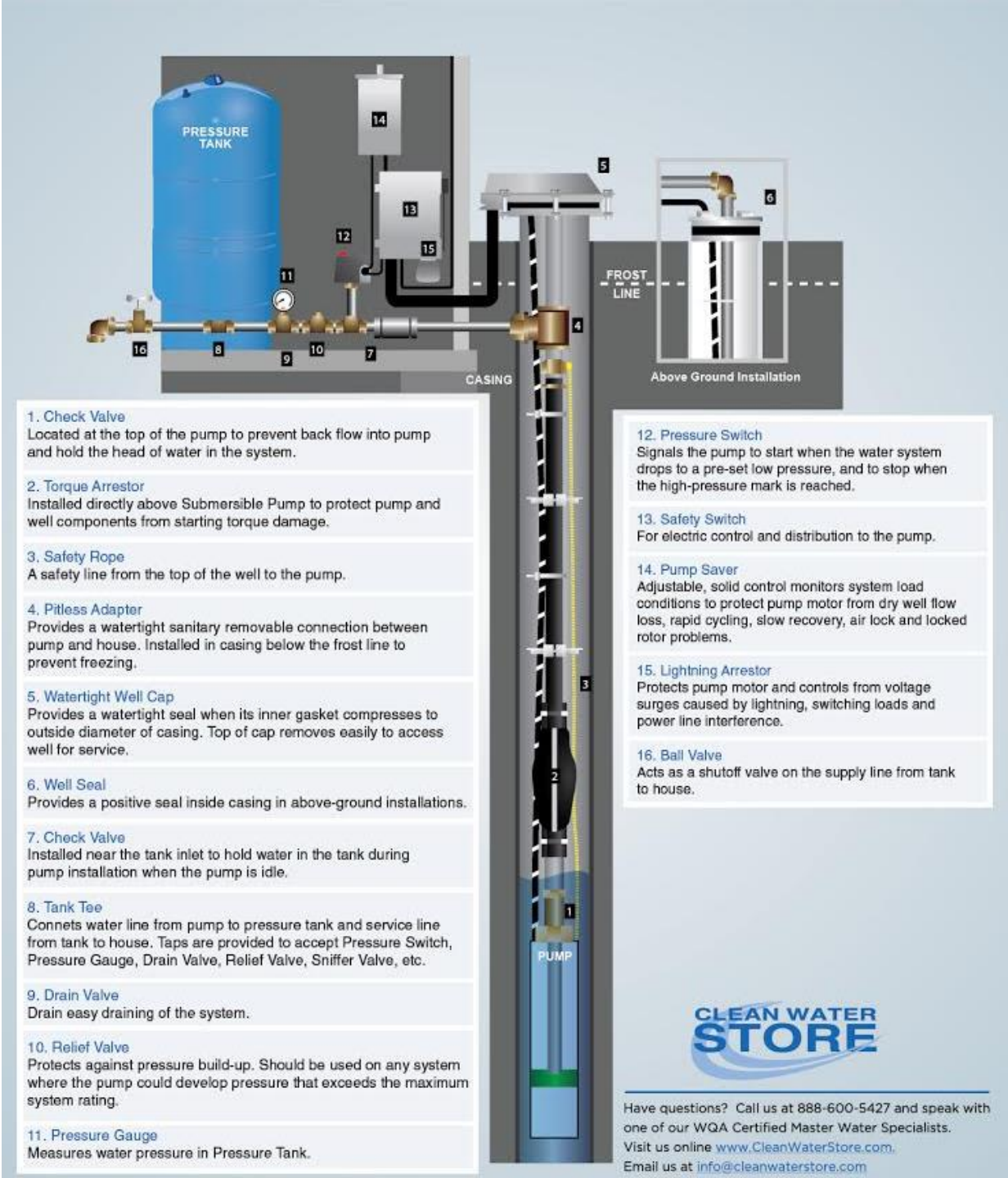
- Physical or hydrological performance of a well.
- Performed by registered private water contractor
  - Flow test rate and recovery rate
  - Static water level and well depth
  - Equipment test (pump, pressure tank, filters….)
- Performed on
  - New wells
  - Redeveloped wells
  - Alteration to the well
- Usually conducted when there is a significant change in flow or sediment observed in the water.

Flowing Well or Artesian Well



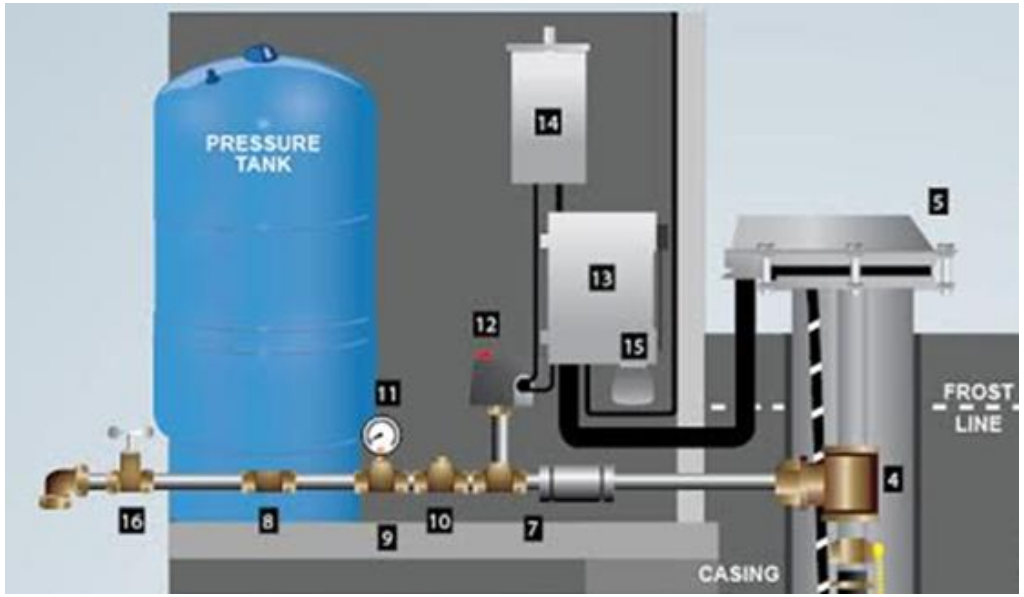
Components of a well

- Casing. Serves as the lining of your well. Keeps well from caving in
- Pit-less Adapter. Attached to the well casing and water line to the home.
- Well Cap. Seals the upper end of the well to prevent contaminants from entering well
- Well Pump. Raises water from the well and delivers it to the pressure tank.
- Pressure Tank. Tank that holds water from the well under pressure until it is needed.



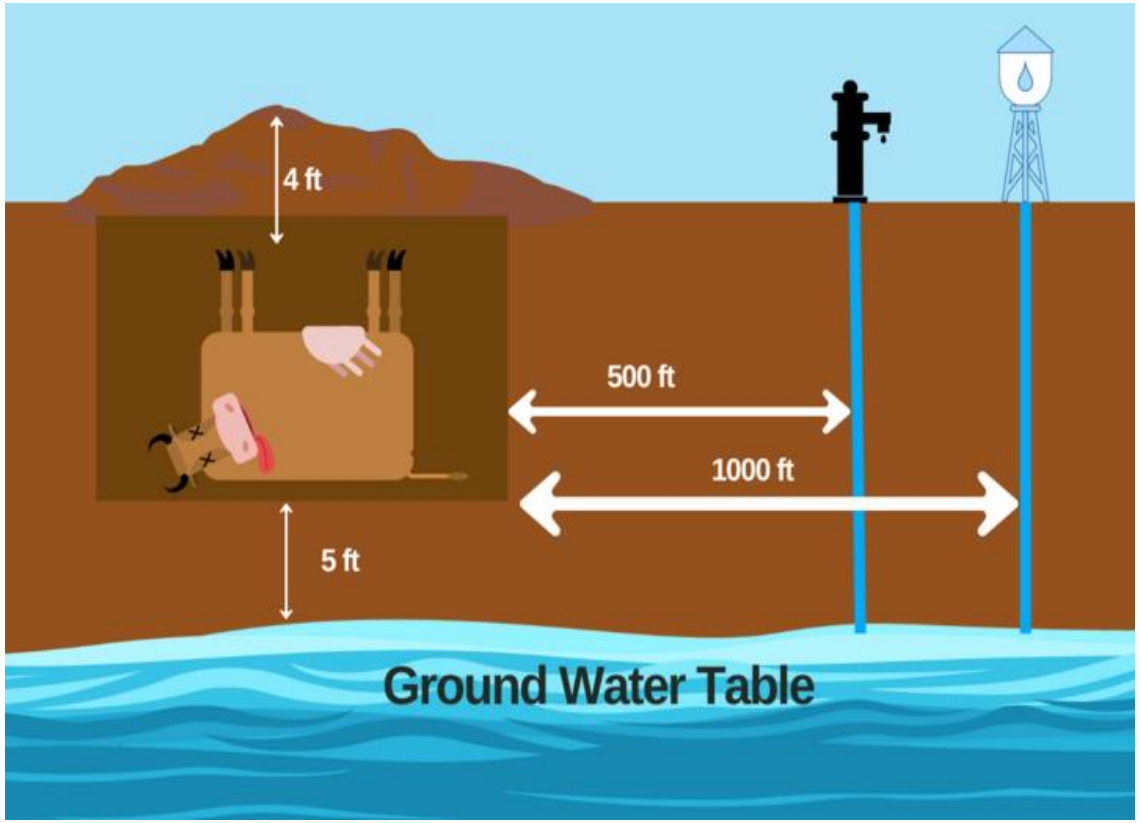
Components of a Well

- Sample Tap
  - Non threaded and as closed to the pressure tank as possible.
  - Additional sample taps may be needed.
- Drain Valve
- Pressure gauge
- Pressure switch
- Backflow preventer
- Pressure tank



Typical Well Deficiencies Seen Onsite

- Holes and cracks in casing
- Cracked or missing and unsecured well caps
- Buried well casings
- Exposed electrical wiring
- Unvented caps
- Non-rodent proof caps
- Leaks around pressure tanks
- Unsanitary conditions around Pressure tanks




a)


b)


c)


d)


DRIP
DRIZZLING

Well Location Considerations

- Where Is My Private Water System Located?
- Call GPH
- Locate Potential Contamination Sources
- Home Sewage Treatment System (>50ft)
- Fuel Oil Tanks Less Than 1000gal (>50ft)
- Animal Housing, Manure piles (>50ft)
- Sewage or Manure Land Application Approved by BOH (>200ft)

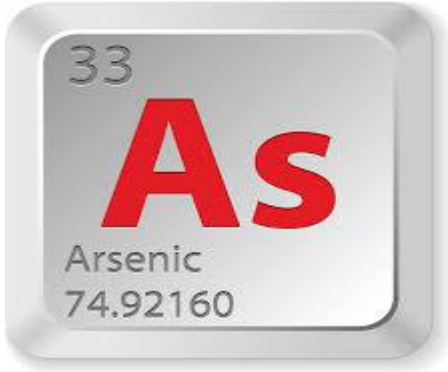
Yearly Homeowner well inspections

- It’s important to routinely inspect your well system to ensure it’s operating properly, prolong its life and protect your investment
- Keep hazardous chemicals away from your well and well components
- Inspect your wellhead & seal for signs of damage, insect or animal intrusion
- Ensure your well casing extends a min 12” from the ground surface and ground is sloped away from well casing
- Check the well casing for deterioration
- Check pressure tank fittings and piping for corrosion

- Protect your well from vehicles
- Record changes in your water quality (taste, odor, or color)
  - Record conditions around these changes
- Keep records of your well and maintenance activities
- Change filters routinely
- Keep up with maintenance and chemicals for water softeners
- Perform routine water quality testing (total coliform bacteria)
  - Disinfect your well when bacterial levels exceed the standard
  - Total coliform > 4.0 cfu/100mL
  - E. coli > 1.0 cfu/100mL

Safe Drinking Water Act 1974 Standards

- Primary Standards
  - A list of contaminants that can cause health affects.
  - Enforceable standards or Maximum Contaminate Levels (MCLs) established.
  - Public water supplies must be below these standards.
- Secondary Standards
  - A list of contaminates that do not cause health affects but affect the quality of the drinking water.
  - There is an established Secondary(MCL)
    - Cause taste and odor issues
    - Color and clarity
    - Corrosive or cause staining



Primary Contaminates

Contaminant	MCL or TT1	Potential health effects from long-term3 exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)2
Antimony	0.006	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	0.006
Arsenic	0.010	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes	0.000
Asbestos (fibers >10 micrometers)	7 million fibers per Liter (MFL)	Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	7 MFL
Atrazine	0.003	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	0.003
Barium	2.000	Increase in blood pressure	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2.000
Benzene	0.005	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills	zero
Benzo(a)pyrene (PAHs)	0.000	Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines	zero
Beryllium	0.004	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	0.004
Bromate	0.010	Increased risk of cancer	Byproduct of drinking water disinfection	zero
Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	0.005
Glyphosate	0.700	Kidney problems; reproductive difficulties	Runoff from herbicide use	0.700
Carbofuran	0.040	Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	0.040

Secondary Contaminates

Contaminant	Secondary Maximum Contaminant Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	Noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

Iron, Sulfur, and Manganese Bacteria in Water

Signs of Nuisance Bacteria

- Reddish-orange deposit in wells, streams and ponds.
- Red, orange, or black/ brown algal growth that may float on the waters surface.
- Foul odor or taste to water.
- Oil-like sheen on surface of water.

Will the Bacteria Make Me Sick?

- The growth of bacteria and algae generally pose no health risk.
- Algal growth may cause a bad taste in well water and/or odors.

What Are Iron Bacteria?

Oil Sheen Resulting From Iron Bacteria

Algal Growth

Because iron and bacteria are naturally present in soils and water, it can be found in wells, streams, and lakes. Iron bacteria are organisms that consume iron to survive and produce deposits of iron and brownish-red slime, "biofilm" in the water. Iron Bacteria get their energy from the reduced iron present in the water and do not always need oxygen to survive. During the process of obtaining energy from iron, the bacteria can oxidize iron from ferrous iron (dissolves in water) to ferric iron (does not dissolve in water) and a precipitate of ferric hydroxide is formed. The bacteria can also cause a sheen on the water's surface, which is often mistaken for oil. The two can be distinguished by poking at the sheen with a stick. If the sheen goes back together after removing the stick, the sheen is most likely from oil. If the sheen breaks apart into pieces, it is likely that iron bacteria are present.

Iron Bacteria Deposits

wellcare® **information for you about**

IRON BACTERIA & WELL WATER

What is Iron Bacteria?

Iron bacteria are small living organisms that naturally occur in soil, surface, and groundwater. These nuisance bacteria combine iron or manganese with oxygen to form deposits of "rust", bacterial cells, and slimy materials that stick to well casings, pumps, pipes, plumbing fixtures, and water appliances often damaging them.

Iron bacteria can be orange, brown, or red in color. Sometimes it floats in the water like orange algae and sometimes you may notice an orange slime that coats the inside of the toilet tank that can be wiped off with a finger. You may also notice an oily sheen on the water surface.

Iron bacteria often produce unpleasant tastes and odors commonly reported as: "swampy", "oily", "cucumber", "sewage", "rotten vegetation", or "musty". The taste or odor may be more noticeable if the water is stagnant for some time. Iron bacteria does not produce hydrogen sulfide (the "rotten egg" smell) but can create an environment where sulfur bacteria can grow and produce hydrogen sulfide.

What are the health effects of Iron Bacteria?

Although iron bacteria can affect how water tastes and smells, there are no associated health risks. However, iron bacteria can clog filters and screens reducing well yield and the effectiveness of some water treatment devices.

If you suspect contamination or experience illness, stop drinking and cooking with the water immediately, and do not resume use until testing has proven it to be safe to use. Always seek the advice of your medical doctor if you have any health concerns.

How do I test for Iron Bacteria?

The Environmental Protection Agency (EPA) has not set a maximum contaminant level (MCL) for iron bacteria in drinking water. Too much iron bacteria in water will cause the water to be too unpleasant to drink. Therefore, if you suspect that you have iron bacteria, you should have the water tested. Contact your state or local health department for a list of state-certified laboratories in your area or use our interactive map. The characteristics listed are typical of iron bacteria. However, objectionable stains, tastes, or odors may be due to other causes including iron, sulfate, hydrogen sulfide, or manganese. Testing for these contaminants is also recommended to determine proper treatment.

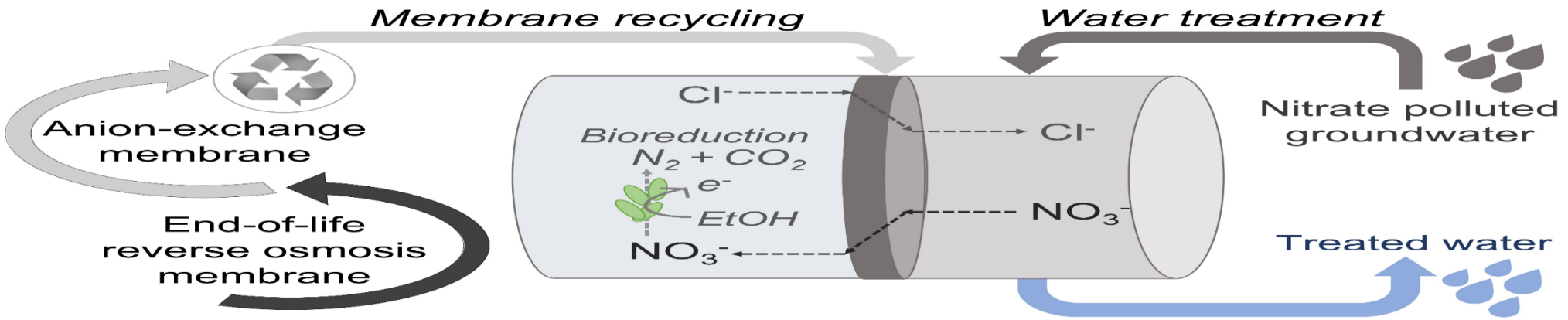
Contaminants of Concern

- Nitrate: Chemical contaminant; presence indicates surface contamination. Most commonly from fertilizer

  - Babies are most sensitive: Blue Baby Syndrome

  - 5mg/L requires sample to be sent to an approved lab for analysis

  - May be treated with reverse osmosis or ion exchange filtration



Bacteria In Your PWS

- Total Coliform: Bacteria used as an indicator organism
  - Where is it coming from
  - Not normally harmful to health individuals
  - With disinfection devices should be 0 CFU, safe levels 4 CFU's or less.
- E. coli: Species of coliform bacteria; can cause illness
  - Where is it coming from
  - Commonly found in the intestines of humans & animals
  - Water should not be consumed
  - Can cause abdominal cramping, diarrhea, vomiting. Dangerous to elderly or immune compromised
  - With and without disinfection devices should be 0 CFU

Ohio Department of Health

Bureau of Environmental Health and Radiation Protection

"Protect and improve the health of all Ohioans by preventing disease, promoting good health and assuring access to quality care."

E. coli

Answers to Frequently Asked Health Questions

What is *E. coli*?

Simply put, *E. coli* is a bacterium. E. coli is the abbreviated name of the bacterium named Escherichia coli.

Where do you find *E. coli*?

E. coli bacteria are everywhere in the environment. *E. coli* and other kinds of bacteria are found in our intestines and are necessary for us to digest food and remain healthy. *E. coli*, along with other species of bacteria in our intestine, provide many necessary vitamins including Vitamin K and B-complex vitamins. We have billions of *E.coli* bacteria in our bodies, making things we need, helping digest our food and maintaining our health. Because these bacteria can be found in human and animal intestines, you can find these bacteria in the waste (feces) we produce. Sanitarians and those who test water look for these bacteria to alert people to the possible dangers and suggest proper treatments to remove the *E. coli* bacteria from the water.

Can *E. coli* harm your health?

Although most *E. coli* are harmless and are a needed bacterium for health, there are some strains of *E. coli* bacteria that can be very harmful to our health. A **rare** strain of *E. coli* that you may have seen in the news can cause potentially dangerous outbreaks and illness. This strain is *E. coli* O157:H7. This *E. coli* can produce a toxin called Shiga-like toxin (SLT).

How do you come in contact with *E. coli*?

You come into contact with *E. coli* by ingesting (eating and drinking) *E. coli* bacteria-contaminated items. Again, *E. coli* bacteria are everywhere in the environment. Because they are found in virtually all animals, any time we eat something, drink something or put our hands on something that has been near where persons or animals are, there is always the potential we might ingest these bacteria. The harmful *E. coli* bacteria have been found in unpasteurized apple juice and milk, meat (especially ground beef), sprouts, lettuce, salami and in sewage-contaminated water.

What are some of the health effects of harmful *E. coli*?

The harmful strain of *E. coli* bacteria can cause abdominal cramping, diarrhea* and occasionally vomiting. Usually little or no fever is present. Dehydration, even in mild cases of diarrhea, can easily occur. Normally the illness resolves in 5 to 10 days. In 5%-10% of cases, hemolytic uremic syndrome (HUS), which is characterized by kidney failure and loss of red blood cells, can occur. In severe cases of the disease, 2%-7% may have permanent kidney damage. Dehydration is particularly dangerous to small children who are too small to tolerate much blood and fluid loss. The presence of these bacteria can also be very dangerous to the elderly population or persons who are already ill.

* Sometimes persons may have bloody diarrhea.

Bureau of Environmental Health

"To protect and improve the health of all Ohioans"

Total & Fecal Coliform Bacteria

Answers to Frequently Asked Health Question

What is coliform?

Total coliform bacteria are a collection of relatively harmless microorganisms that live in large numbers in soils, plants and in intestines of warm-blooded (humans) and cold-blooded animals. Coliform aid in the digestion of food.

Where do you find coliform?

There are 16 species of total coliform found in soils, plants and in animal and human waste. A subgroup of coliform, called fecal coliform bacteria, is different from the total coliform group because they can grow at higher temperatures and are found only in the fecal waste of warm-blooded animals. There are six species of fecal coliform bacteria found in animal and human waste. *E. coli* is one type of the six species of fecal coliform bacteria. A rare strain of *E. coli* that you may have seen in the news can cause potentially dangerous outbreaks and illness. This strain is called *E. coli* 0157.

How do you come in contact with coliform?

Coliform are a family of bacteria common in soils, plants and animals. You can come in contact with these bacteria by eating or drinking (ingesting) soils on plants and in water sources such as ponds, lakes and rivers. Fecal coliform bacteria can be found in water contaminated by domestic sewage or other sources of human and animal waste.

Can coliform harm your health?

Finding coliform or other bacteria in water does not necessarily always mean you will become ill. However, if these organisms are present, other disease-causing organisms may also be present. The presence of fecal contamination is a sign that a possible health risk exists for individuals exposed to this water. Health symptoms related to drinking or swallowing water contaminated with fecal coliform bacteria generally range from no ill effects to cramps and diarrhea (gastrointestinal distress). Sanitarians and those who test water look for total and fecal coliform bacteria to alert people to the possible dangers and suggest proper treatments to remove potentially harmful bacteria from the water. The presence of any fecal coliform in drinking water is of immediate concern as many diseases can be spread through fecal transmission.

How can you reduce coliform contamination?

Groundwater (underground drinking water) in a properly constructed well should have minimal-to-no coliform bacteria. If coliform are found in a well it generally means bacterial and mineral slimes have built up and your well needs to be professionally cleaned by a registered private water system contractor.

Homeowners who use cisterns, springs or ponds as a drinking water source should use treatment devices to disinfect and filter the water to remove coliform bacteria. The presence of total coliform in a water sample means the disinfection system is not working properly.

Improperly maintained treatment devices can be sources of contamination. Home water filters and other water-treatment devices should be changed and maintained in accordance with manufacturer's recommendations.

References:

Ohio Department of Health, Bureau of Environmental Health, Private Water Program, 2004.

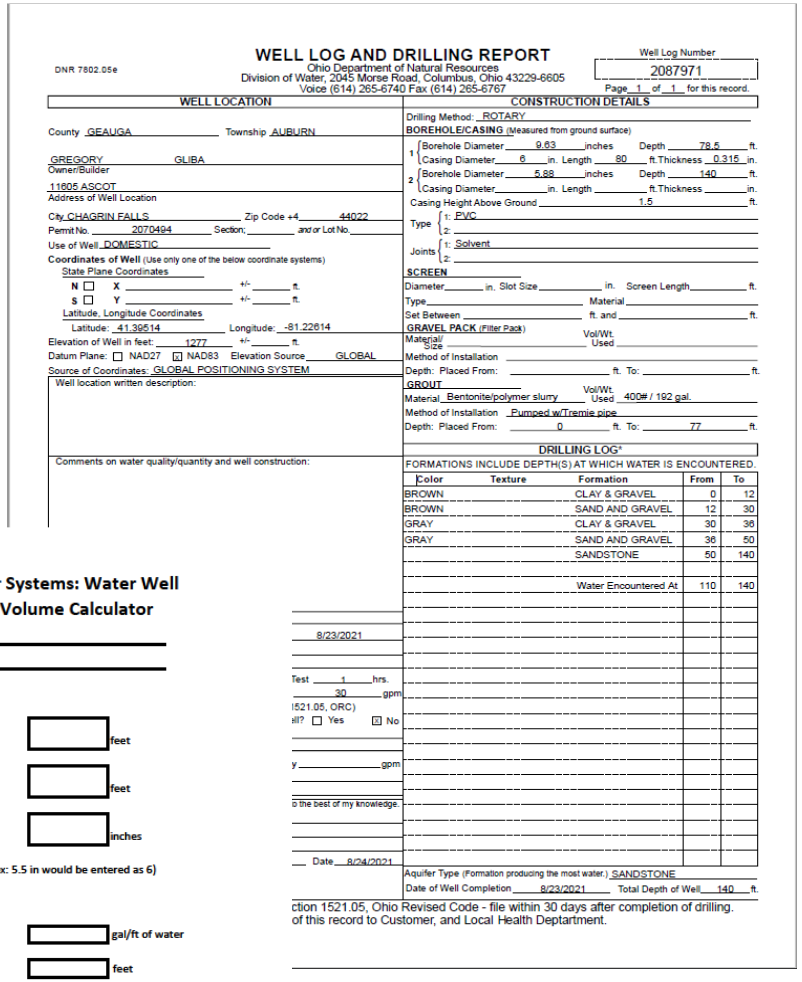
Vermont Department of Health, Safe Water Resource Guide, A Fact Sheet on Coliform Bacteria in Water (electronic).

Kentucky Water Watch, Fecal Coliform Bacteria (electronic).

This document was created by the Bureau of Environmental Health, Health Assessment Section and supported by funds from the Agency for Toxic Substances and Disease Registry (ATSDR).

Water Well Disinfection

- Ohio Department of Health (ODH)
  - Homeowner simplified procedure
  - Should disinfect after positive bacteria result or for general maintenance.
- Equipment and supplies
  - Unscented household beach
  - White vinegar
  - 5 gallon bucket
  - Garden hose
  - Well log
  - ODH Disinfection calculator
  - Chlorine test strips (Optional)



DNR 7802.05e

WELL LOG AND DRILLING REPORT
Ohio Department of Natural Resources
Division of Water, 2045 Morse Road, Columbus, Ohio 43229-6605
Voice (614) 265-6740 Fax (614) 265-6767

Well Log Number 2087971
Page 1 of 1 for this record.

WELL LOCATION

County GEAUGA Township AUBURN

GREGORY GLIBA
Owner/Builder

11605 ASCOT
Address of Well Location

City CHAGRIN FALLS Zip Code +4 44022
Permit No. 2070494 Section: and/or Lot No.
Use of Well DOMESTIC
Coordinates of Well (Use only one of the below coordinate systems)
State Plane Coordinates
N ☐ X +/- ft.
S ☐ Y +/- ft.
Latitude, Longitude Coordinates
Latitude: 41.39514 Longitude: -81.22614
Elevation of Well in feet: 1277 +/- ft.
Datum Plane: ☐ NAD27 ☒ NAD83 Elevation Source GLOBAL
Source of Coordinates: GLOBAL POSITIONING SYSTEM
Well location written description:

Comments on water quality/quantity and well construction:

CONSTRUCTION DETAILS

Drilling Method: ROTARY
BOREHOLE/CASING (Measured from ground surface)
1 Borehole Diameter 9.63 inches Depth 78.5 ft.
Casing Diameter 6 in. Length 80 ft. Thickness 0.315 in.
2 Borehole Diameter 5.88 inches Depth 140 ft.
Casing Diameter in. Length ft. Thickness in.
Casing Height Above Ground 1.5 ft.
Type 1: PVC
Type 2:
Joints 1: Solvent
Joints 2:
SCREEN
Diameter in. Slot Size in. Screen Length ft.
Type Material
Set Between ft. and ft.
GRAVEL PACK (Filter Pack)
Material Vol/Wt. Used
Size
Method of Installation
Depth: Placed From: ft. To: ft.
GROUT
Material Bentonite/polymer slurry Vol/Wt. Used 400# / 192 gal.
Method of Installation Pumped w/Tremie pipe
Depth: Placed From: 0 ft. To: 77 ft.

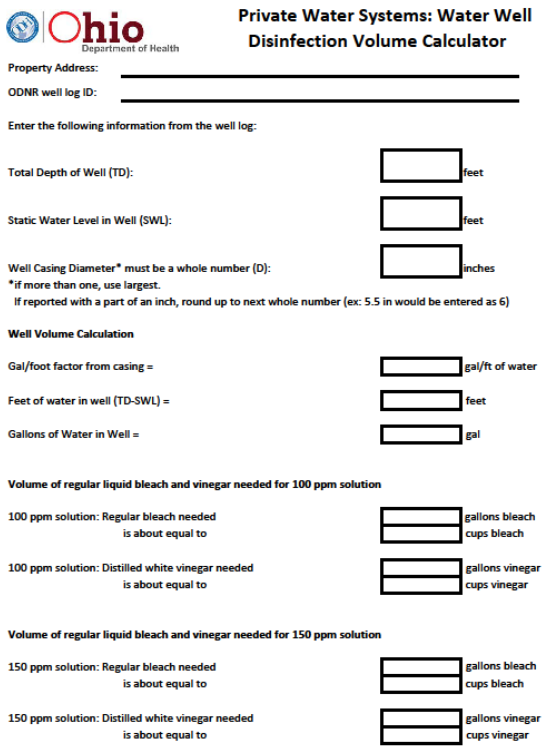
DRILLING LOG

FORMATIONS INCLUDE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.

Color	Texture	Formation	From	To
BROWN		CLAY & GRAVEL	0	12
BROWN		SAND AND GRAVEL	12	30
GRAY		CLAY & GRAVEL	30	36
GRAY		SAND AND GRAVEL	36	50
		SANDSTONE	50	140
		Water Encountered At	110	140

8/23/2021
Test 1 hrs.
30 gpm
1521.05, ORC)
ell? ☐ Yes ☒ No
y gpm
o the best of my knowledge.
Date 8/24/2021

Aquifer Type (Formation producing the most water.) SANDSTONE
Date of Well Completion 8/23/2021 Total Depth of Well 140 ft.
ction 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.
of this record to Customer, and Local Health Deptartment.



Ohio Department of Health

Private Water Systems: Water Well Disinfection Volume Calculator

Property Address:

ODNR well log ID:

Enter the following information from the well log:

Total Depth of Well (TD): feet

Static Water Level in Well (SWL): feet

Well Casing Diameter* must be a whole number (D): inches
*if more than one, use largest.
If reported with a part of an inch, round up to next whole number (ex: 5.5 in would be entered as 6)

Well Volume Calculation

Gal/foot factor from casing = gal/ft of water

Feet of water in well (TD-SWL) = feet

Gallons of Water in Well = gal

Volume of regular liquid bleach and vinegar needed for 100 ppm solution

100 ppm solution: Regular bleach needed is about equal to gallons bleach / cups bleach

100 ppm solution: Distilled white vinegar needed is about equal to gallons vinegar / cups vinegar

Volume of regular liquid bleach and vinegar needed for 150 ppm solution

150 ppm solution: Regular bleach needed is about equal to gallons bleach / cups bleach

150 ppm solution: Distilled white vinegar needed is about equal to gallons vinegar / cups vinegar

December 2014

Disinfection calculator

Ohio Department of Health

Private Water Systems: Water Well Disinfection Volume Calculator

Property Address: 11605 Ascot Lane

ODNR well log ID: 2087971

Enter the following information from the well log:

Total Depth of Well (TD):	140	feet
Static Water Level in Well (SWL):	54	feet
Well Casing Diameter* must be a whole number (D):	6	inches

*if more than one, use largest.
If reported with a part of an inch, round up to next whole number (ex: 5.5 in would be entered as 6)

Well Volume Calculation

Gal/foot factor from casing =	1.50	gal/ft of water
Feet of water in well (TD-SWL) =	86.00	feet
Gallons of Water in Well =	129.00	gal

Volume of regular liquid bleach and vinegar needed for 100 ppm solution

100 ppm solution: Regular bleach needed	0.32	gallons bleach
is about equal to	5 1 / 4	cups bleach
100 ppm solution: Distilled white vinegar needed	0.97	gallons vinegar
is about equal to	15 2 / 4	cups vinegar

Volume of regular liquid bleach and vinegar needed for 150 ppm solution

150 ppm solution: Regular bleach needed	0.52	gallons bleach
is about equal to	8 1 / 4	cups bleach
150 ppm solution: Distilled white vinegar needed	1.5	gallons vinegar
is about equal to	24 3 / 4	cups vinegar

December 2014

DNR 7602.05e

WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources
Division of Water, 2045 Morse Road, Columbus, Ohio 43229-6605
Voice (614) 265-6740 Fax (614) 265-6767

Well Log Number: 2087971
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WELL LOCATION

County GEAUGA Township AUBURN

GREGORY GLIBA
Owner/Builder

11605 ASCOT
Address of Well Location

City CHAGRIN FALLS Zip Code +4 44022

Permit No. 2070494 Section: ____ and or Lot No. ____

Use of Well DOMESTIC

Coordinates of Well (Use only one of the below coordinate systems)

State Plane Coordinates

N ☐ X ____ +/- ____ ft.
S ☐ Y ____ +/- ____ ft.

Latitude, Longitude Coordinates

Latitude: 41.39514 Longitude: -81.22614

Elevation of Well in feet: 1277 +/- ____ ft.

Datum Plane: ☐ NAD27 ☒ NAD83 Elevation Source GLOBAL

Source of Coordinates: GLOBAL POSITIONING SYSTEM

Well location written description:

Comments on water quality/quantity and well construction:

WELL TEST *

Pre-Pumping Static Level 54 ft. Date 8/23/2021

Measured from GROUND LEVEL

Pumping test method AIR

Test Rate 30 gpm Duration of Test 1 hrs.

Feet of Drawdown 56 ft. Sustainable Yield 30 gpm

*(Attach a copy of the pumping test record, per section 1521.05, ORC)

Is Copy Attached? ☐ Yes ☒ No Flowing Well? ☐ Yes ☒ No

PUMP/PITLESS

Type of pump ____ Capacity ____ gpm

Pump set at 100 ft. Pitless Type ____

Pump installed by STREETSBORO SALES

I hereby certify the information given is accurate and correct to the best of my knowledge.

Drilling Firm SOUTHWIND DRILLING COMPANY

Address 8480 GIRDLE RD

City, State, Zip MIDDLEFIELD OH 44062

Signed BRIAN R. WILSON (Filed Electronically) Date 8/24/2021

ODH Registration Number 1504

CONSTRUCTION DETAILS

Drilling Method: ROTARY

BOREHOLE/CASING (Measured from ground surface)

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Casing Diameter 6 in. Length 80 ft. Thickness 0.315 in.

2 Borehole Diameter 6.88 inches Depth 140 ft.
Casing Diameter ____ in. Length ____ ft. Thickness ____ in.

Casing Height Above Ground 1.5 ft.

Type 1: PVC
Type 2: ____

Joints 1: Solvent
Joints 2: ____

SCREEN

Diameter ____ in. Slot Size ____ in. Screen Length ____ ft.

Type ____ Material ____

Set Between ____ ft. and ____ ft.

GRAVEL PACK (Filter Pack)

Material/Size ____ Vol/Wt. Used ____

Method of Installation ____

Depth: Placed From: ____ ft. To: ____ ft.

GROUT

Material Bentonite/polymer slurry Vol/Wt. Used 400# / 192 gal.

Method of Installation Pumped w/Tremie pipe

Depth: Placed From: 0 ft. To: 77 ft.

DRILLING LOG*

FORMATIONS INCLUDE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.

Color	Texture	Formation	From	To
BROWN		CLAY & GRAVEL	0	12
BROWN		SAND AND GRAVEL	12	30
GRAY		CLAY & GRAVEL	30	36
GRAY		SAND AND GRAVEL	36	50
		SANDSTONE	50	140
		Water Encountered At	110	140

Aquifer Type (Formation producing the most water) SANDSTONE

Date of Well Completion 8/23/2021 Total Depth of Well 140 ft.

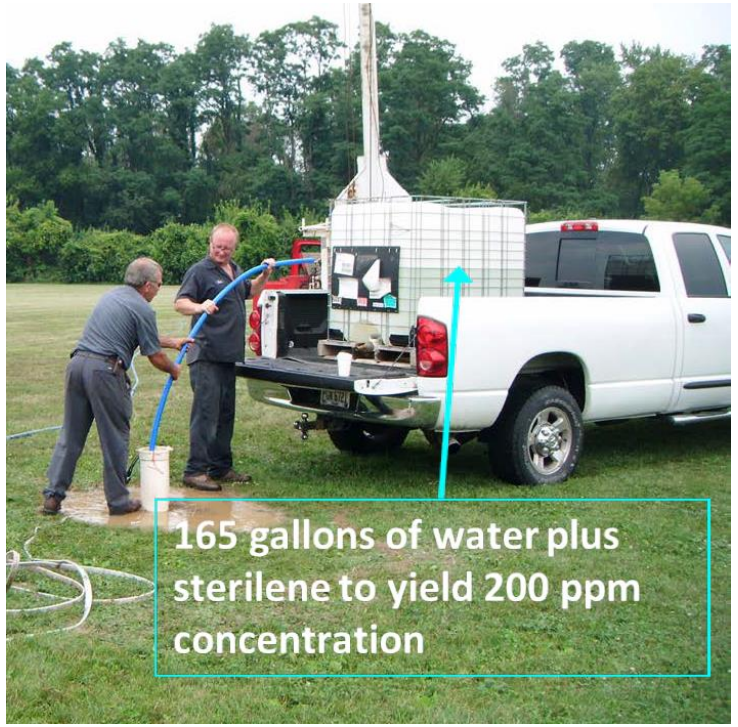
Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.
Distribute copies of this record to Customer, and Local Health Deptartment.

Disinfection Procedure

1. Secure some water for drinking, and do some laundry.
2. By-pass all water treatment units (softener).
3. It is recommend to pump the well for 24 hours (this may not be possible).
4. Use the disinfection calculator for to determine the volume of bleach and vinegar needed (Example ~1/3 gal of bleach, ~1 gal vinegar).
5. In a 5 gallon bucket mix water, vinegar, and bleach.
   - Fill the bucket with 2 – 3 gallons of water, add vinegar and mix, then add the bleach.
6. Remove well cap and add the solution to the well.
7. Use a garden hose to flush the sides of the well and recirculate the water
   - May see some sediment or debris in the water.
   - Purge the well until the debris is minimized or water is clear.

Enhanced Disinfection

- Performed by a private water contractor when the water cannot meet the water quality limits for bacteria.
- Deep cleaning of the well and entails the removal of the pump and lines.
- The casing is cleaned with wire brush and swab.
- May also involve a chemical cleaning if large amounts of deposits are noticed.
- Well must be redeveloped and the sediment removed.
- Well is disinfected and must sit for 24 hours.
- Purge the well, check for residual chlorine.
- Retest for total coliform bacteria (48 – 72 hours)



Continuous Disinfection

- Needed when the well cannot meet water quality criteria for bacteria.
  - May be required after enhanced disinfection fails.
  - A dye test and camera inspection should be performed to confirm the well casing is structurally sound.
- Continuous disinfection requires and alteration permit form the Board of Health.
  - U.V Light Sterilizers
  - Chemical disinfection with chlorine (bleach)

Why don’t people test their wells?

- We’ve been drinking it for years.
- Don’t know what to test for.
- Don’t understand how and where to sample.
- Didn’t know that I should be testing the water.
- Testing cost to much.
- Better to wait until there is an issue.
- Results are complicated.

Well Interpretation tools

Ohio State University Extension

- https://ohiowatersheds.osu.edu/know-your-well-water/well-water-interpretation-tool

Be Well Informed

- https://www4.des.state.nh.us/DWITool/Welcome.aspx
- https://bewellinformed.info/workbench
- Contact your local health department

Cryptosporidium		count/100gal
E. coli		CFU/100mL
Fecal coliform		CFU/100mL
Giardia lamblia		count/100gal
Total Coliform Bacteria		MPN/100mL
Total Coliform Bacteria (Counts)		CFU/100mL

Homeowners Can Take Their Own Samples

The Geauga County Laboratory is a multifaceted lab with capabilities that range in both water and wastewater analysis. Each of our analysts hold water and wastewater certifications through the State of Ohio.

Semi annually we participate in Federal and State proficiency testing and have random and scheduled surveys through the EPA and the Health Department.

- Homeowners can schedule with the lab to drop of water samples.
- **Sample bottles** shall be purchased at the Department Office, Monday – Friday from 7am to 4pm.
- Laboratory located at 13335 Aquilla Rd. Chardon, OH 44024
- Contact Number: 440-279-1975

Do I Have Access to Public Water?

- Look for fire hydrants along the roadside
- No state requirements to tie into city water if accessible
- Call Geauga Water Resources to determine if water is accessible
- Call Geauga Public Health Department to determine current Private water system on site

Questions?

Dan Sinclair

dsinclair@geaugacountyhealth.org