

WELLness

A GUIDE TO WATER QUALITY
IN YOUR WELL

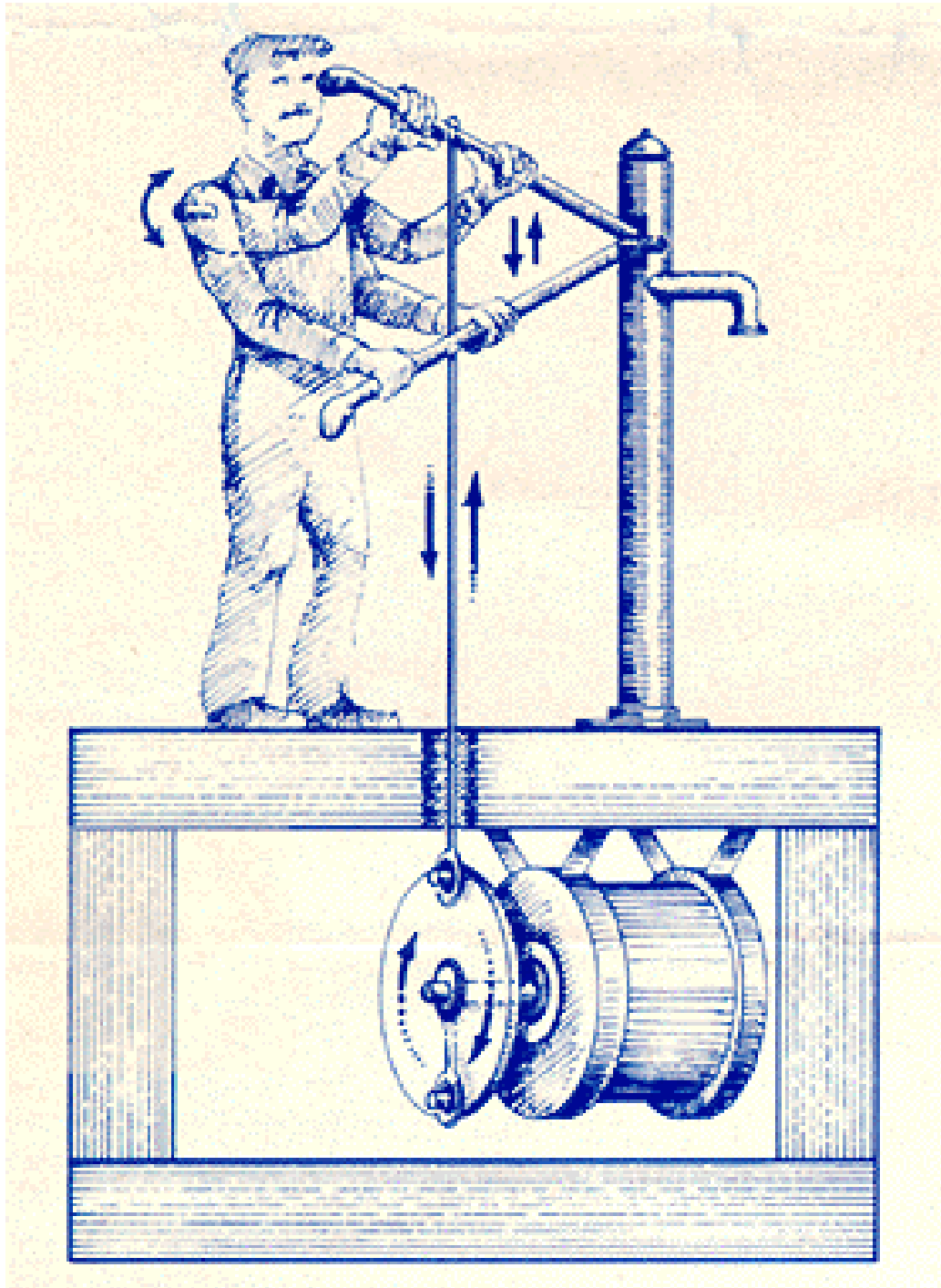


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INTRODUCTION

There are over 40,000 water wells in Sonoma County, the second most of any County in California. These wells pump groundwater from underground aquifers to serve many community needs, such as drinking, bathing, agriculture, and manufacturing.

Poorly built or maintained wells can provide channels for harmful contaminants to enter the groundwater, reducing its quality and posing a threat to the environment and users of water. Because of the importance of groundwater and wells, it is in everyone's interest to learn as much as possible about taking care of our wells and the groundwater they provide us.

The Sonoma County Division of Environmental Health Services offers this booklet to owners or operators of residential wells in Sonoma County. These materials are intended to provide basic knowledge that will help you understand groundwater, your well, how to prevent contamination of your well and what to do if you find that your well water is contaminated. We hope you find this information valuable.

Please keep in mind that this material is in no way intended to be a substitute for professional consultation or advice. It serves as an educational tool to increase your knowledge and awareness of groundwater, and to provide additional sources of information.

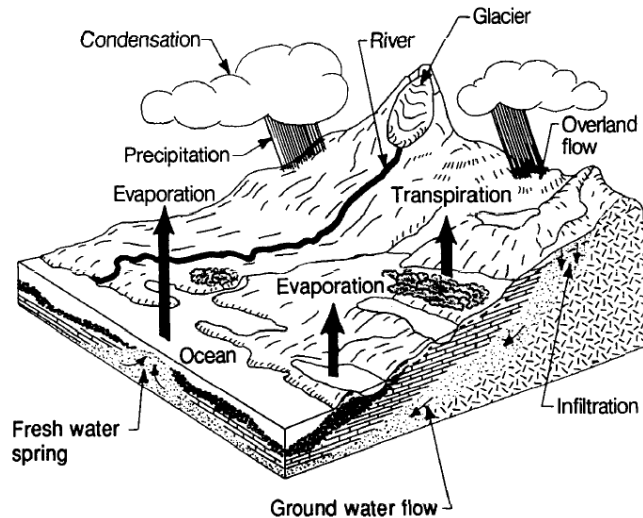
If you have any questions, comments or suggestions on how we can continue to improve these materials, please contact the Sonoma County Department of Health Services at:

475 Aviation Blvd., Suite 220
Santa Rosa, CA 95403
(707) 565-6565
<http://www.sonoma-county.org/health/eh>

WHERE DOES GROUNDWATER COME FROM?

The hydrologic cycle is a complex process that moves water from the earth's surface, into the atmosphere and back to earth again¹ as rain or snow.

Over centuries the water falling as rain or snow seeps underground to become groundwater. Groundwater is stored in what are called aquifers. Aquifers are sponge-like basins of sandstone, sand, gravel or fractured rock. The water table is the top of the water in these aquifers. A myth held by many is that groundwater exists as fast-moving underground 'rivers'. While underground rivers do occur in some regions of the world, there are no such rivers of water known to exist in California or Sonoma County. Instead, groundwater flows very slowly through the porous materials of the aquifer. The speed that groundwater flows through a given aquifer, depends on the size of the pores in the soil or rock, the connections between these spaces, and weather conditions.



Groundwater comes brought to the surface of the earth in different ways. It surfaces naturally out of springs, discharges into lakes and streams or is pumped out of the ground through water wells. Over 50% of drinking water used in the United States comes from water wells. In California, we depend heavily on this high quality resource. To ensure that future generations have access to this extremely valuable resource, we need to increase our understanding of groundwater, water wells and how to maintain our wells.

Want more information?

Download "Groundwater Facts" from the California Department of Water Resources Drought Preparedness Website at:

http://watersupplyconditions.water.ca.gov/pdf/water_facts_6.pdf

Or order from: Bulletins and Reports, CDWR, P.O. Box 942836 Sacramento, CA 94236-0001 1.916.653.1097

¹ Graphic from the State of California Department of Water Resources *Groundwater Water Facts* brochure

WHAT IS A WELL ? HOW ARE THEY BUILT ?

Simply stated, a well is a hole drilled into the earth to obtain water. Slotted plastic or metal well casing is placed in the hole and a pump is installed to pump the water out. Wells are constructed by a *C-57 licensed well driller*.

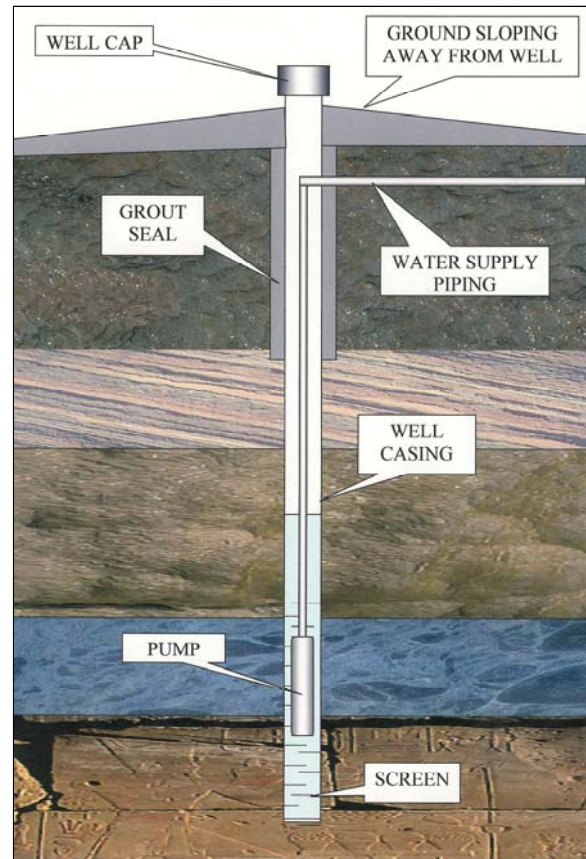
The driller notes the type and depth of material that the drill passes through during drilling. This information is recorded on a *well driller's log* that is provided to the homeowner and submitted to the Well & Septic Division of the Sonoma County Permit and Resources Management Department, Sonoma County's permitting agency for wells. By State statute a well log is a confidential document that can only be reviewed with the well owner's written permission.

After the hole has been drilled, steel or plastic pipe called *well casing* is installed. The well casing houses the pumping equipment and prevents the wall of the well from collapsing. Where water is located, the casing has thin perforations and is called the *well screen*. To keep fine sediment from entering the well screen, the well driller installs a *filter pack* between the well screen and the hole.

To prevent poor quality surface water from getting to the groundwater the driller installs *grout* cement to form an *annular seal* between the blank casing and the hole. The annular seal is extended up to the surface from a depth of at least 20 feet. After the pump is installed an outward sloping concrete pad can be formed on the ground surface. This concrete pad prevents physical objects, small children, vermin and polluted surface water from entering the well. The well casing extends at least one foot above the ground. This is called the *wellhead*.

After the well is installed the well is *developed* which involves removing enough water so that it runs clear and relatively free of fine sediment. While the well is being developed the quantity of water is usually measured. This is called a *Yield Test* and usually takes around an hour.

Before hooking up the water supply to the customer's plumbing system, the well is disinfected and remains capped to provide sanitary protection until it is hooked up. The cap requires an *air vent*, which equalizes the air pressure between the inside of the casing and the atmosphere, and releases unpleasant or explosive gases.



RULES FOR CONSTRUCTING WELLS IN SONOMA COUNTY

Because improperly constructed wells, including hand-dug wells and some older wells, may allow contaminants to enter the well, numerous laws are in place to govern the construction, modification, destruction or abandonment of wells in Sonoma County.

- ❑ Permits for new wells, modifications of existing wells, or destruction of existing wells must be obtained from the Sonoma County Permit and Resources Management Division's Well & Septic Office at (707) 565-1900.
- ❑ A C-57 licensed contractor must perform work on wells in California. Be sure to check with any potential contractor to make sure they have this license.

Want to learn more about the laws and regulations for water wells?

Read the Sonoma County Code, Chapter 25B (copies available at PRMD) for an in-depth description of local rules and regulations.

Read *California Laws for Wells* Available for download at the Department of Water Resources Division of Planning and Local Assistance website:

www.dpla.water.ca.gov/cgi-bin/supply/gw/main.pl

WHAT ARE THE NATURAL CAUSES OF WELL WATER CONTAMINATION?

Water wells can be contaminated by numerous natural substances. Hazardous materials may exist naturally in rocks and soils. Below are a few of the more common natural causes of well water contamination.

Nitrates and Nitrites- nitrates and nitrites can derive from the breakdown of nitrogen compounds in the soil.

Fluoride- high levels of naturally occurring fluoride can contaminate groundwater.

Radionuclides- radionuclides are radioactive elements such as uranium and radium. These elements are often present in underlying rock. Radon, a gas by-product of the breakdown of uranium can be transported via the household water supply and contribute to increased radon levels in the home.

Heavy Metals- underground rocks and soils may contain heavy metals such as arsenic, cadmium, chromium, lead and selenium. These naturally occurring materials may migrate to groundwater and are only dangerous when elevated levels are found.

Microorganisms- bacteria, viruses and parasites are frequently found in water.

Animals- small animals and insects seek water and shelter in improperly sealed or constructed wells. Their waste materials can contaminate groundwater.

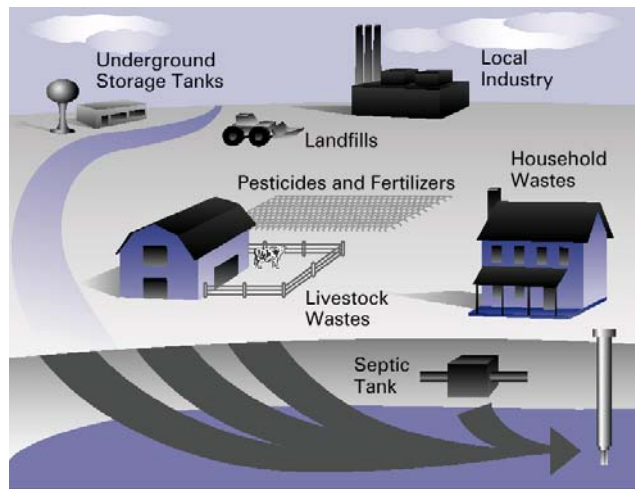
Dust and Other Organic Debris- dust and organic matter such as leaves grass and twigs that carry bacteria can find their way into wells and contaminate groundwater.

Want to learn more about groundwater and how it can be contaminated?

Read this series of fact sheets on groundwater written by the Hazardous Substances Research Center at Michigan State University:
www.envirotools.org/factsheets/groundwater.shtml

WHAT ARE THE HUMAN CAUSES OF WELL WATER CONTAMINATION?²

Many human activities that contaminate groundwater. The picture to the right shows general categories of human activities that can potentially contaminate groundwater. The following discusses some of the more common contaminants and sources of contamination.



Nitrates and Nitrites- from sewage disposal systems, confined animal feeding operations, and chemical fertilizers

Microorganisms- contamination from bacteria, parasites or viruses is frequently caused by faulty sewage disposal systems or faulty well construction.

Heavy Metals- mining, construction or pesticide application to former agricultural land can release large amounts of heavy metals into groundwater.

Fertilizers, Herbicides and Pesticides- hundreds of different chemical products have important uses in agriculture and landscaping.

Industrial Products and Wastes- many chemicals are widely used in local businesses and industry. Solvent plumes containing Perchloroethylene (PCE), Trichloroethylene (TCE) and Carbon Tetrachloride have been discovered in Sonoma County. Gasoline and its constituents MTBE, Benzene, Toluene, Ethylbenzene and Xylene (BTEX) are common contaminants found in Sonoma County groundwater, generally originating from sites with leaking underground fuel storage tanks.

Household Wastes – Cleaning solvents, paint thinners, soaps and detergents pose a threat. These materials often reach the groundwater through improper disposal into sewage disposal systems or are disposed directly to the ground.

Lead & Copper – household plumbing materials are the most common source of contamination in the drinking water.

Water Treatment Chemicals – improperly handling common water treatment chemicals, such as corrosion inhibitors or disinfectants, can cause contamination in drinking water.

² Graphic from EPA's "Drinking Water From Household Wells"

HOW DO I TAKE CARE OF MY WELL TO PREVENT CONTAMINATION?

Maintaining your well is essential to ensuring that it is not contaminated. Here are some useful tips:

Maintaining Complete Well Records

Keeping complete records of your well's construction and maintenance history is a key part of maintaining your well and preventing contamination. Below are a few standard types of records that you can keep to ensure the best possible health and performance of your well.

Drillers Log- this is the confidential document, which describes the construction of the well, its geology, and the depth that water is drawn from (the perforated interval). This is a very important document for a landowner to keep safe and to use for troubleshooting problems. Licensed contractors are required by law to provide the well owner a copy of this log after construction.

Pump Test Data- each year conduct a pump test of your well to measure the amount of water it produces. This is important information to assess well performance as it ages.

Distribution Map- draw a map of the locations of the well and water-related infrastructure on the property. If you share a well with neighbors, or if you purchase or sell a property, this information useful to prevent unneeded exploration or harm to infrastructure. Being able to promptly locate the infrastructure is also important in case emergency repairs are necessary.

Maintenance Records- keep all receipts and records of maintenance work performed on the well.

Water Quality Data- keep records of all water quality testing data. This will allow you to compare data over time to identify potential problems with water quality. Having your water periodically tested to monitor water quality is encouraged.

Conducting a Wellhead Inspection

It is important that you conduct a visual inspection of your well at least twice a year. Here are some tips to help you with the inspection:

- ❑ Make sure the well cap is in place and tight fitting.
- ❑ Look for openings through which contaminants can enter the well. Plug or seal openings immediately.

- ❑ Look for cracks in the concrete pad through which surface water may enter. Seal cracks or pour a new concrete pad.
- ❑ Look for water flowing out of the top of the well. Contact a C-57 licensed contractor to make repairs.
- ❑ Remove weeds, leaves and other material from around your well.
- ❑ Wells not in use for a period of one year are considered abandoned by the State of California. Abandoned wells, by law, are required to be destroyed.
- ❑ If you have an inactive standby well and are not required to destroy it, turn on the pump a few times per year to ensure proper function.

Monitor Deteriorating Well Performance

Well performance declines over time as equipment ages and groundwater levels fluctuate. Common contributors to a decline in well performance include:

- ❑ Change in groundwater levels
- ❑ Mineral encrustation or bacterial encrustation of the well screen
- ❑ Physical plugging of well screen, filter pack and surrounding soils by silt and other fine particles
- ❑ Corrosion of well casing
- ❑ Pump malfunction or improper pump sizing

Many of these problems can be prevented by proper well design and construction, pump sizing, and maintenance. If not allowed to progress too far, most well performance issues can be corrected. To prevent or correct performance problems work with a licensed water well and/or pump contractor.

Destroying Unused Wells

Wells not in use for a period of one year are considered abandoned by the State of California. To eliminate the potential of an abandoned acting as a vertical pathway for contamination, the well needs to be destroyed by filling the entire well casing with cement-based sealing materials. A C-57 licensed contractor must perform well destruction work under permit from Sonoma County and.

Protect Your Well Structure

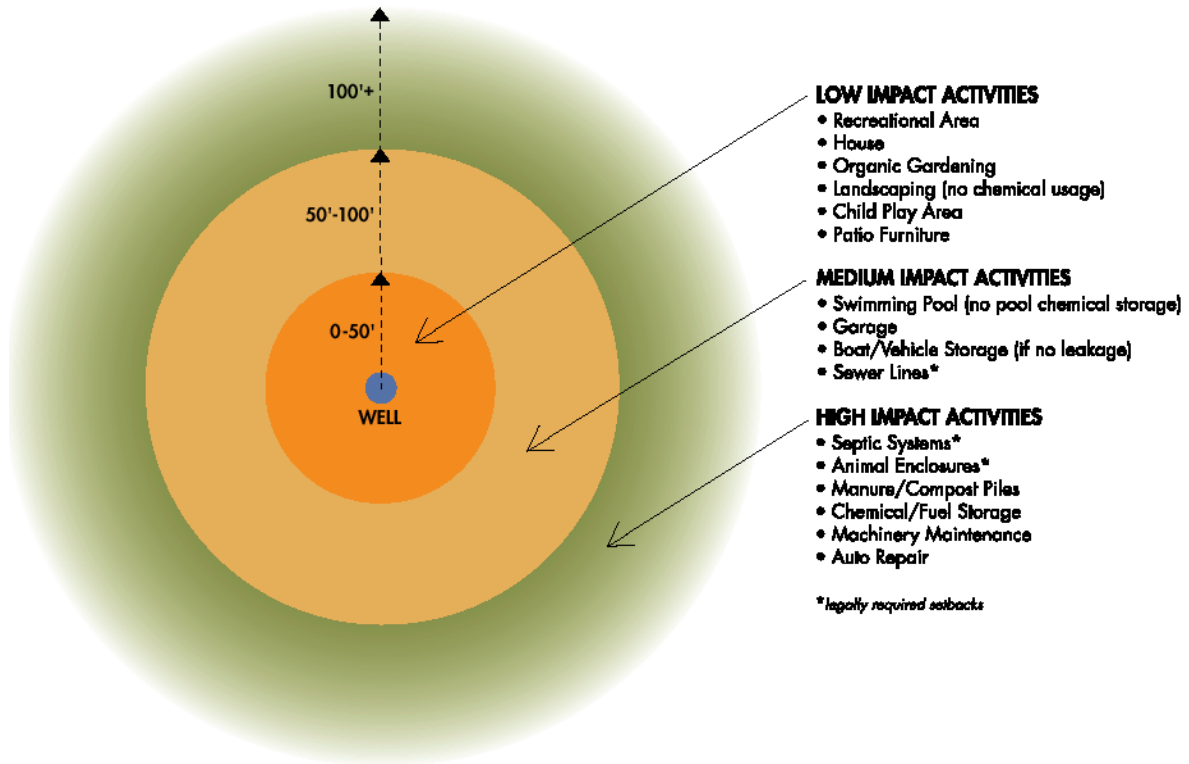
Protect your well from costly physical damage by building a small structure or fence around the well that continues to ensure ease of access. Put a lock the well enclosure to minimize potential for vandalism.

Hand Dug Wells

Hand dug wells are risky, highly subject to contamination, and present a safety hazard. A new well should be constructed with a minimum 20-foot annular seal.

Maintaining Well Setback Distances³

It is important to carefully manage your activities around the well and water supply infrastructure. Here is a chart meant to serve as a guide for your decisions and activities around the well.



Want to Learn More about Wells?

Visit www.wellowner.org, an excellent website sponsored by the National Groundwater Association

³ From Santa Clara County Water Authority's "A Guide for the Private Well Owner"

Reducing the Use of Hazardous Materials around the Well⁴

To further prevent groundwater contamination consider reducing the amount of hazardous substances used around the home or well. Here are some tips suggested by the Sonoma County Waste Management Agency:

1. Restrict the use of household products marked **Poison** or **Danger**

By law, hazardous products must have warning labels. These products can cause groundwater contamination



Reduce the Need for Garden and Yard Pesticides

Many pesticides are poisons that can seep through the soil to groundwater aquifers.

2. Use Less Toxic Cleaners

Some cleaners contain very hazardous ingredients that can burn your eyes, skin and lungs. Look for safer name-brand substitutes at your grocery store, or use simple alternatives such as baking soda and vinegar.

3. Do Not Store Toxic Chemicals in Your Well House.

Want to learn more about recycling and reducing your use of hazardous substances around the home?

Visit the Sonoma County Waste Management Agency's website at www.recyclenow.org or call their Eco-Desk Hotline at (707)-565-DESK (3375)

For further discussion about safer alternatives to many hazardous materials used around the home visit www.peerreview.com

⁴ Graphic and text adapted from Sonoma County Waste Management Agency website at www.recyclenow.org

Maintaining your Septic System ⁵

Your home's septic system is an on-site sewage disposal and treatment system for your home's wastewater. Sewage disposal systems that are properly designed constructed and maintained are very effective and pose little risk of contaminating groundwater. If improperly designed, constructed or maintained, they can, however, pose a risk for contaminating groundwater with harmful nitrates, bacteria and viruses.

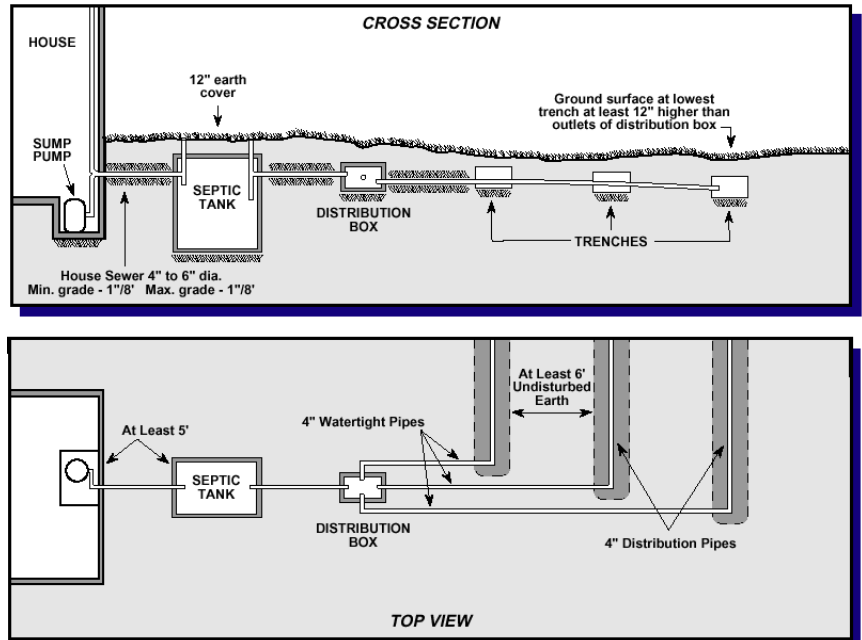
If you have a sewage disposal system, understand that whatever goes down the drain may find its way into groundwater. A 100 ft. setback between the septic tank and well provides relatively good protection against viruses and bacteria. However there is no setback for solvents, photography chemicals, paint, automotive wastes, or hazardous art supplies that may not break down or filter easily. Here are a few tips to ensure the proper function of your sewage disposal system:

- ❑ Inspect and have your septic tank pumped every 3-5 years by a permitted and experienced professional
- ❑ Do not dispose of foreign objects in the system
- ❑ Do not put toxic chemicals down drains.
- ❑ If you observe a green or soggy area around the leach field or sewage disposal tank call an inspector from Sonoma County PRMD
- ❑ Do not park vehicles over leach/drain field

Want more information on sewage disposal systems?

Contact The Well and Septic Office of the Sonoma County PRMD
(707) 565-1900

Or visit the National Small Flows Clearinghouse Website
www.nesc.wvu.edu/nsfc



⁵ Graphic courtesy of State of California Department of Water Resources "Groundwater Water Facts" brochure

HOW DO I KNOW IF MY WELL IS CONTAMINATED?

Many substances that contaminate water can be noticed without chemical testing. Below are some of the most easily observed water conditions. Recognizing these conditions can help prevent more serious problems and provide direction regarding what types of laboratory analysis may be needed.

Visible

- ❑ Scale, scum or encrustation from calcium or magnesium salts in water
- ❑ Unclear/turbid water from dirt, clay salts, silt or rust in water
- ❑ Green stains on sinks or faucets may be caused by high acidity
- ❑ Brown or black stains may be due to high levels of Manganese (Mn) and/or Iron (Fe).
- ❑ Blue water or blue deposits on fixtures may be due to high levels of copper (Cu), especially if coupled with corrosive water.
- ❑ Orange-red water or stains on sinks dishwasher or clothes in wash may be due to dissolved iron in water
- ❑ Cloudy, colored or frothy water may be due to suspended particulates, poorly working pump or filters, sewage waste or detergents.
- ❑ Plumbing system with older lead pipes, fittings or solder joints may cause lead (Pb), cadmium (Cd) and/or zinc to leach from lead pipes, fittings or solder joints.
- ❑ Corroding water heater or metal pipes may be due to corrosive water.

Taste

- ❑ Salty or brackish taste from high sodium content in water
- ❑ Alkali/soapy taste from dissolved alkaline minerals in water
- ❑ Metallic taste from acidity or high iron content in water
- ❑ Chemical taste from volatile or semivolatile organic compounds (VOCs) or pesticides.

Smell

- ❑ A rotten egg odor can be from dissolved hydrogen sulfide gas or certain bacteria in water. Turpentine odor in water may be due to methyl tertiary butyl ether (MTBE).
- ❑ A detergent odor and water that foams when drawn could be seepage from sewage disposal tanks into your groundwater well
- ❑ A musty/earthy smell or rotting flesh smell may be from decaying organic matter in water
- ❑ Chlorine smell may be due to excessive chlorination

HOW DO I TEST MY WELL FOR WATER QUALITY?

Although your water may taste and smell fine, the only way to know for sure that your water is safe is by testing it. Harmful bacteria or chemicals that you cannot see, smell or taste could be present. There are many tests that can be performed on your well water to determine its water quality. This is a list of the most commonly performed tests and their recommended testing frequencies. Because bacteria and nitrate are the most common contaminants of well water, they should be tested most frequently. The minerals test is recommended for the purposes of developing a baseline understanding of your water and as a way to indicate water quality changes.

Bacteria: (At least twice a year). If the lab report shows the presence of total coliform bacteria look for the cause, eliminate it if possible, and continue to test the water at an increased frequency. You may consider installing a treatment system such as distillation, chemical disinfection or ultraviolet radiation. Consult a water treatment professional for more advice. *(Total Coliform and Fecal Coliform), EPA Collert Method*

Nitrates: (Every five years) If ≥ 45 mg/l NO₃ or ≥ 10 mg/l NO₃-N, install a treatment device or find an alternative water supply. Increase the testing frequency. Filtration using reverse osmosis, will remove some of the nitrate. Consult a water treatment professional for more advice. *EPA Method 200 series*

Minerals: Test mineral levels in your water every 5 years OR if taste, color or if commercial/industrial development increases in the area. (Most water testing companies offer a group minerals test for all of these). Be sure to compare the results with previous results. *EPA Method 200 series*

Aluminum(Al), 1.0 mg/l

Barium (Ba), 1.0 mg/l

Chromium (Cr) 0.05 mg/l

Iron (Fe), 0.3 mg/l

Manganese (Mn), 0.05 mg/l

Selenium (Se), 0.05 mg/l

Arsenic (As), 0.05 mg/l

Cadmium (Cd), 0.005 mg/l

Fluoride(F), 2.0 mg/l

Lead (Pb), .015 mg/l

Mercury (Hg), 0.002 mg/l

Silver (Ag) 0.1 mg/l

If mineral levels are greater than or equal to the levels above⁶, you should install a treatment system or determine an alternative supply of water. An appropriate treatment system is dependent on the minerals you are interested in removing. Consult a water treatment professional for more advice.

⁶ Levels from the State of California CCR Standards for drinking water.

Petroleum Hydrocarbons: (Every three to five years). There is no drinking water standard for petroleum hydrocarbons however, if petroleum hydrocarbons are suspected or detected at all, then the well also should be tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE) which do have standards. If petroleum hydrocarbons, BTEX or MTBE are detected then a treatment device can be used or the homeowner may seek an alternative water supply. Consult a water treatment professional for more advice. *Petroleum hydrocarbons by EPA Method 8015 and BTEX/MTBE by EPA Method 8260.*

Solvents: (Every three to five years). Each solvent has a specific drinking water standard. If solvents are detected then a treatment device can be used or the homeowner may seek an alternative water supply. Consult a water treatment professional for more advice. *Volatile Organic Compounds (solvents) by EPA Method 8260.*

Pesticides or Herbicides: (Every three to five years). Each pesticide has a specific drinking water standard. If pesticides are detected then a treatment device can be used or the homeowner may seek an alternative water supply. Consult a water treatment professional for more advice. *Organichlorine Pesticides by EPA Method 8080. Herbicides by EPA Method 8150.*

Laboratories Certified by the State of California Department of Health Services for Bacterial and/or Chemical Analysis

Scott Laboratories
2220 Pine View Way
P O Box 4559
Petaluma, CA 94955-4559
Telephone (707) 765-6674
(bacteriological and chemical testing)

Brelje and Race Laboratories, Inc.
425 South E Street
Santa Rosa, CA 95404
Telephone (707) 544-8807
(bacteriological and chemical testing)

County of Sonoma
Public Health Division Laboratory
3313, Chanate Road

Santa Rosa, CA 95404
Telephone (707) 565-4711
(bacteriological testing)

Cal-Test Analytical Laboratory
1885 North Kelly Road
Napa, CA 94558
Telephone (707) 258-4000
(bacteriological and chemical testing)

Sequoia Analytical
1455 McDowell Boulevard North, Ste D
Petaluma, CA 94954
Telephone (707) 792-1865
(bacteriological and chemical testing)

Want information on laboratories certified by the California Department of Health Services?

Here is a list of Laboratories certified for work in California
<http://www.dhs.ca.gov/ps/ls/elap/html/LablistStart.htm>

HOW DO I TREAT MY WELL FOR BACTERIAL CONTAMINATION?

If your well test shows levels of bacteria follow these steps

1. If the water is cloudy, attempt to clear as much as possible by pumping the well to waste.
2. Mix 3 cups of unscented household bleach (Chlorox, Purex, White Magic, Sanichlor, Vano etc.) containing 5.25% sodium hypochlorite with 3 gallons of water. Greater amounts of chlorine solution should be used for wells more than 100 feet deep.
3. Pour the chlorine solution into the well. It may be necessary to lift the pump, but some wells have openings that can be used for this purpose.
4. With taps, faucets, and hydrants closed, surge the well by starting and stopping the pump several times.
5. Open every tap, faucet, or hydrant in the water distribution system. Run the pump until a strong odor of chlorine can be detected at the end point of the distribution system. This is usually the tap farthest away from the well.
6. Stop the pump and close all taps, faucets, or hydrants. Do not operate the pump for 24 hours.
7. After 24 hours, open all outside taps, faucets and hydrants and let the water flow until the odor of chlorine is gone. Do not discharge heavily chlorinated water into a septic tank or onto the surface of the ground where landscaping could be affected.
8. Close the taps, faucets, or hydrants and use the system normally.
9. A water sample should be obtained for bacteriological analysis one week or more after disinfecting the well.

Alpha Analytical Laboratories
860 Waugh Lane, H-1
Ukiah, CA 95482
(707) 468-0401

Analytical Sciences
Liberty Street
Petaluma, CA 94952
(707) 769-3128

Brelje and Race Laboratories, Inc.
425 South E Street
Santa Rosa, CA 95404
(707) 544-8807

CalTest Analytical
1885 North Kelly Road
Napa, CA 94558
(707) 468-0401

County of Sonoma
Public Health Laboratory
3313 Chanate Road
Santa Rosa, CA 95404
(707) 565-4711

Sequoia Analytical
1455 McDowell Blvd.
Petaluma, CA 95954
(707) 792-1865

Want More Information?

Visit the website of the American Groundwater Trust for an online workbook on bacteria in the well.

www.agwt.org/bacteria.htm

HOW DO I TREAT MY WELL FOR NON-BACTERIAL CONTAMINATION?

This guide presents options available for non-bacterial contaminants. Treatment devices are generally of three types: Point of use, (faucets), point of entry, (on main water line entering the house), and well head (at the well). Some contaminants can be adequately treated at indoor taps. Others however volatilize and harmful vapors might be released such as when using showers, washing machines etc. These are impractical for point of use filters. They would be better treated at the point of entry or the wellhead. Wellhead treatment technologies are currently unproven, experimental, or impractical. The Sonoma County Department of Health Services recommends that you talk with a water treatment professional about your specific situation to assure that the system you are considering will work for your needs.

To ensure that any treatment device considered is certified as to its effectiveness by the State of California, contact the Sonoma County Department of Health Services, Division of Environmental Health or visit the website below for a list of certified treatment devices.

Contaminant	Activated Alumina Filters	Activated Carbon Filters	Mechanical Filtration	Oxidizing Filters	Ozonation	Reverse Osmosis
Arsenic	X					X
Asbestos		X				X
Benzene		X				X
Chlorine		X				
Color		X		X	X	
Flouride	X					X
Hardness						
Hydrogen Sulfide		X		X		
Inorganics, minerals (some)						X
Iron/Manganese-dissolved				X		
Iron/Manganese- insoluble			X	X		
Lead						X
Mercury		X				X
MTBE		X				
Nitrate						X
Odor and taste		X		X	X	X
Pesticides (some)		X			X	X
Salt						X
Sand, silt, clay (turbidity)			X			
Uranium	X					
Volatile organic compounds		X				X

Table and footnotes adapted from "A Guide for the Private Well Owner" published jointly by the Santa Clara Valley Water District and Santa Clara County Department of Environmental Health.

Want information on water treatment devices?

Visit the DHS Online Directory of Water Treatment Devices at:

<http://www.dhs.cahwnet.gov/ps/ddwem/technical/certification/device/table.htm>

WHAT ARE MY RESOURCES?

LOCAL GOVERNMENT

Sonoma County Department of Health Services Division of Environmental Health

3273 Airway Drive, Suite D
Santa Rosa, CA 95403-2097
(707) 565-6565 www.sonoma-county.org/health/eh

Contact regarding:

- ❑ Drinking water standards and health risks
- ❑ State certified testing laboratories
- ❑ Well and drinking water system disinfection
- ❑ Water systems between 5 and 15 connections.

Sonoma County Permit and Resource Management Division

Well and Septic Office
2550 Ventura Ave.
Santa Rosa, CA 95403
(707) 565-1900

Contact Regarding

- ❑ Well Construction, Repairs, Abandonment and Destruction Permitting
- ❑ On Site Sewage Disposal Systems (Septic Systems)

Household Hazardous Waste Disposal

Sonoma County Waste Management Agency
Eco-Desk Hotline at (707)-565-DESK (3375)
www.recyclenow.org

Contact regarding:

- ❑ Identification, disposal and recycling of hazardous materials
- ❑ Drop-Off Locations

STATE AND REGIONAL GOVERNMENT

California Department of Health Services (CADHS)

The Division of Drinking Water and Environmental Management (DDWEM) is responsible for the regulation and monitoring of public water systems, systems serving 15 or more homes.

(916) 323-6111 www.dhs.cahwnet.gov/ps/ddwem

California Department of Water Resources (DWR)

The Department of Water Resources provides information on groundwater management issues throughout California. The web page has a list of useful publications on groundwater.

(916) 227-7590 www.dpla.water.ca.gov/cgi-bin/supply/gw/main.pl

Department of Toxic Substances Control (DTSC)

The Department of Toxic Substances Control can help answer questions about what is a hazardous waste, how to reduce household hazardous waste, where to report spills and illegal dumping, as well as provide information on specific hazardous waste disposal or handling facilities. They also provide information regarding specific chemicals and health effects.

(916) 324-1788 www.dtsc.ca.gov

Regional Water Quality Control Board- North Coast Region (NCRWQCB)

North Coast Regional Water Quality Control Board

5550 Skylane Boulevard, Suite A,
Santa Rosa, California 95403

(707) 576-2220 www.swrcb.ca.gov/rwqcb1/index.html

Regional Water Quality Control Board- San Francisco Bay Region (SFRWQCB)

San Francisco Bay Regional Water Quality Control Board

1515 Clay Street, Ste 1400
Oakland, California 94612

(510) 622-2300 www.swrcb.ca.gov/rwqcb2/index.html

FEDERAL GOVERNMENT**USEPA Safe Drinking Water Hotline**

The U. S. Environmental Protection Agency's Safe Drinking Water Hotline is available to help the public, drinking water stakeholders, and state and local officials understand the regulations and programs developed in response to the Safe Drinking Water Act. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline. The hotline and web page also provide information on testing and protecting private well water and where to find more information.

(800) 426-4791 <http://www.epa.gov/safewater/pwells1>

Food and Drug Administration (FDA)

Among other things, the Food and Drug Administration regulates the bottled water industry. Contact the FDA if you have questions about the safety or regulation of bottled water.

(800) 532-4440 www.fda.gov

PRIVATE ORGANIZATIONS

California Groundwater Association (CGA)

The California Groundwater Association (CGA) is a non-profit organization. Its members include water well drilling and pump contractors, suppliers and manufacturers, geologists, engineers, hydrologists, government employees and others working in the groundwater field throughout California. Contact CGA for information on the quantity, quality and availability of California's groundwater resources.

(707) 578-4408 www.groundh2o.org

The Groundwater Foundation (GWF)

The Groundwater Foundation is a not-for-profit organization that is dedicated to informing the public about groundwater resources. They provide numerous educational programs and publications for all ages on the importance of groundwater and groundwater protection. The GWF also offers recognition and support for Groundwater Guardian Communities and Affiliates.

(800) 858-4844 www.groundwater.org

National Ground Water Association (NGWA)

The National Ground Water Association is a not-for-profit organization whose mission is to enhance the skills and credibility of all groundwater professionals, develop and exchange industry knowledge, and promote the groundwater industry and understanding of groundwater resources. Contact the NGWA for information on groundwater studies and publications nationwide, for answers to frequently asked questions about groundwater, and for the latest groundwater news and legislation.

(800) 551-7379 www.ngwa.org

National Small Flows Clearinghouse (NSFC)

The National Small Flows Clearinghouse is funded by the U.S. Environmental Protection Agency to provide small communities with technical assistance on wastewater issues and groundwater quality in general. Contact the NSFC if you have questions about on site sewage disposal system design, installation or maintenance.

(800) 624-8301 www.estd.wvu.edu/nsfc/NSFC_homepage.html

National Well Owner Association (NWOA)

The National Well Owners Association is an online association providing comprehensive and up-to-date information on the construction and maintenance of water wells.

(800) 749-0234 www.wqa.org