TO: Environmental Health Managers **GMP #119**
District Health Directors
OEHS Staff
VPI/SU Soil Constultants

FROM: Robert B. Stroube, M.D., M.P.H.
State Health Commissioner

SUBJECT: DECLARATION OF SUSPENSION: 12 VAC 5-630, PRIVATE WELL REGULATIONS

BACKGROUND

On July 31, 2002, Governor Warner declared that the drought and related conditions currently affecting the Commonwealth constitute a natural disaster "wherein human life and public and private property are imperiled." In Executive Order 31 (2002) Governor Warner declared that a state of emergency exists throughout the Commonwealth and he directed that state and local government agencies render assistance to "prevent and alleviate any conditions resulting from drought…and to implement prevention and recovery operations and activities so as to alleviate impacted areas from the effects of these conditions insofar as possible."

Section 160 of the *Private Well Regulations* (12 VAC 5- 630-10 et seq.) provides that the commissioner may authorize the suspension of the *Private Well regulations* for specifically affected localities in cases of man-made or natural disasters upon a finding that "certain regulations cannot be complied with and that the public is better served by not fully complying with this chapter." In such cases the commissioner may institute a provisional regulatory plan until the disaster is abated.

Since July 1st local health departments across the Commonwealth have received more than 2,230 applications for permits to replace private wells. These include applications to replace both drinking water wells and irrigation wells. Section 240 of the *Private Well Regulations* requires that VDH issue a construction permit no later than 60-days after receipt of a complete application. Many district and local health departments cannot deliver timely service to these applicants and maintain mandated services in other

programs. In addition, environmental health resources in many localities have been severely affected by the need for increased surveillance and monitoring for the West Nile virus. It is my finding, therefore, that that the public would be better served by not fully complying with certain requirements of the *Private Well Regulation*s.

EMERGENCY SUSPENSION

I am hereby suspending §§ 220, 310, 320, and 330 of the *Private Well Regulations* and implementing a provisional regulatory plan until December 31, 2002, unless the disaster is abated prior to this date. Section 220 requires a person to obtain a written construction permit before constructing, altering, rehabilitating, abandoning, or extending a private well. That section also prohibits a person from placing a private well into service, except for testing the mechanical soundness of the system, until VDH has:

1) received a properly executed Uniform Water Well Completion Report) signed by the contractor (§§ 310, 440);
2) inspected the well and found it to be satisfactory (§ 320);
3) received laboratory test results showing satisfactory water quality (§ 370);
4) received documentation that the well has been properly disinfected (§ 430); and
5) issued an inspection statement (§ 330).

PROVISIONAL REGULATORY PLAN

This provisional regulatory plan is intended to allow a property owner in the Commonwealth to construct, alter, rehabilitate, or extend a private well to replace an existing well without first obtaining a construction permit from VDH. In addition, the provisional regulatory plan allows an owner to place a private well into service without first submitting to VDH the required Uniform Water Well Completion Report, laboratory test results, or documentation of disinfection. Under the provisional regulatory program an owner may begin to use a replacement well before it has been inspected by the local health department. The following procedures or requirements shall apply:

Scope and Applicability:

1. The provisional regulatory program shall apply only to *emergency well replacement* which is defined at 12 VAC 5-630-10 as "the replacement of an existing private drinking water well, heat pump well, or commercially dependent well that has failed to deliver the water needed for its intended use. Such failure requires the drilling a new well or extensive modification to the exiting well. The replacement of failed noncommercial irrigation wells, and other types of private wells are not considered emergencies."

2. Express Class IV well permitting (§§ 260, 270) is not affected by this action.

3. This emergency suspension and provisional regulatory program applies only to private wells and shall in no way affect the permitting and approval procedures for public water supplies.

4. This emergency suspension does not apply to the construction of private wells to serve new uses such as new homes, businesses, etc. The recently adopted *Authorized Onsite Soil Evaluator (AOSE) Regulations* (12 VAC 5-615) allow local health departments to accept evaluation reports and designs for private wells from AOSEs and to issue construction permits pursuant to those reports and designs without the requirement for a site visit by VDH. Citizens are strongly encouraged to secure the services of an AOSE when seeking a private well permit, either in an emergency well replacement situation or in the case of a new use. This will expedite the well permitting process.

Procedures:

1. Prior to drilling a private well or causing or allowing a private well to be drilled the owner shall file a complete application with the appropriate local health department. A complete application will consist of the completed application form that is included with this policy signed by the owner of record (not an agent), a site plan and the appropriate fee, if necessary. The application form is specific for this provisional regulatory plan and acknowledges the owner's responsibility for complying with the *Private Well Regulations*. The application provides a statement that gives VDH personnel permission to enter the property later to verify the location and construction of the well.

2. In accordance with the *Fee Regulations* (12 VAC 5- 620-10 et seq.) and VDH policy, no fee shall be charged for a replacement well. A replacement well is a well that is being constructed to take the place of an existing well, which is being taken out of service and properly abandoned. If the existing well is not permanently abandoned, a fee will be charged.

3. The well must be drilled by a contractor holding a valid WWP (Water Well/Pump) Contractors license (A, B, or C) from the Department of Professional and Occupational Regulation. Environmental Health Specialists are not required to make a site visit to the property either to verify the proposed well location and design (if not already constructed) or to verify the ‘as built’ location and construction details in the field.

4. An AOSE may conduct an inspection and certify the location and construction of a well constructed following this provisional regulatory program.

5. The owner shall submit to the local health department all the following information that is required of a normal well construction permit within 30 calendar days of the well completion:

    1. A properly executed Uniform Water Well Completion Report) signed by the contractor (§§ 310, 440);
    2. Laboratory test results showing satisfactory water quality (§ 370); and
    3. Documentation that the well has been properly disinfected (§ 430).
    4. An "As-Built" drawing triangulating the well location relative to the house, property lines, sewage system, or other significant land features or structures. The "As-Built" drawing must include the location of dry holes bored and the location of abandoned wells. VDH encourages the owner to seek the assistance of a qualified surveyor.

Commonwealth of Virginia
Application for Replacement Water Supply

Health Department ID#_____(VDH Use)

NOTICE: Replacement Well Construction Permits are valid for 6 months only.
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Owner _____ Address _____ Phone_____

_____ Email_____

Agent _____ Address _____Phone_____

_____ Email_____

Directions to Property: _____

_____

Subdivision_____ Section _____ Block_____ Lot_____

Other Property Identification_____ Map Reference_____

Dimension/size of Lot/Property_____

Water Supply:

Describe Proposed Well :_____

The property lines, building location and water supply are clearly marked and the property is sufficiently visible to see the topography. I have attached a site plan (sketch) showing the dimensions of the property, proposed and/or existing structures and driveways, underground utilities, recorded easements, soil absorption systems and other actual or proposed sources of contamination, bodies of water, drainage ways, wells and springs within 100 feet radius of the proposed replacement well. Distances may be paced or estimated. I give permission to VDH personnel to enter the property later to verify the location and construction of the well.

Notice: I acknowledge as the owner of the proposed, replacement well that all parts of the *Private Well Regulations* will be adhered to and that all information contained in this application is accurate. I agree to assume responsibility for any problems incurred with improper construction or location of the proposed well. I agree to correct such problems as directed by the Agency when notified to do so. I understand that VDH may not perform a site evaluation or construction inspection of this well.

_____ _____

Signature of Owner Date

This constitutes authorization to construct the replacement well according to the Declaration of Suspension of §§ 220, 310, 320, and 330 of the *Private Well Regulations* and implementation of a provisional regulatory plan by the State Health Commissioner dated August 20, 2002, and described in GMP #119.

_____ _____

Signature of Local Health Dept. Official Date

Form established: 8/20/02

Residential Water Conservation

There are two principal strategies for *passively* reducing residential water use: fixing leaks and installing water conserving fixtures. Fixing leaks is often easy and inexpensive and can result in some remarkable and unexpected water savings. Replacing fixtures is normally more costly and more time consuming. In many cases the water savings can offset or in some cases more than offset the cost of installing the fixture. If your home is served by a well that is only producing marginal quantities of water, low flow fixtures may make the difference between needing replacement well and being able to live comfortably with your existing well.

Here are some practical water conservation practices that may be of help to you.

Toilet Leak Detection

Leaking toilets waste more water than any other fixture in the home. Even a silent toilet leak (that's one you normally can't hear) will waste from 30 to 500 gallons of water per day! The ones you can hear will waste much, much more. Such wastage can normally be attributed to a faulty water level adjustment or to a leaky flapper.

Leaky flappers and the "dye test"

Most people will say their toilet does not leak. There is one sure way to find out. Put some food dye in the tank and then leave for 15 minutes. When you return, look into your bowl to see if there is now dye color in the water spot. If there is color, or if you already can hear and or see water running in your bowl, it's time for a new flapper!

Source: www.h2ouse.org

Faucet Leaks

Most faucet leaks are plainly visible as drips coming out of the faucet aerator. Occasionally faucets may leak in other places such as the on/off handle or in the pipes below the basin. If you are unsure if your faucet is leaking you might try using your water meter to detect the leak.

Leaks should be fixed immediately since they can quickly develop into a serious break. Temporary repairs are only temporary, and wrapping the pipe usually fails. If you find a fixture that is leaking, turn off the shutoff valve for that device. Then locate the leak. Try to tighten any fittings that leak. A quarter or half turn with a wrench might do the trick. Be careful not to over-tighten fittings. Another possible cause is that the pipes are undersized and the water velocity is too high.

Estimated faucet leakage rates

Drips
60 drops per minute = 192 gallons per month
90 drops per minute = 310 gallons per month
120 drops per minute = 429 gallons per month

Stream
3" stream = 1,095 gallons per month
6" stream = 2,190 gallons per month
9" stream = 3,290 gallons per month

Source: www.h2ouse.org

Plumbing

Individual residential water users can conserve water by using low-flow plumbing fixtures. These are one-time conservation measures that can be implemented automatically with little or no additional cost over their life times and in some cases, they can even save the resident money over the long term. In one example, it was estimated that an average three-member household could reduce its water use by 54,000 gallons annually.

Low-Flush Toilets. Residential demands account for about three-fourths of the total urban water demand. Indoor use accounts for roughly 60 percent of all residential use, and of this, toilets (at 3.5 gallons per flush) use nearly 40 percent. Toilets, showers, and faucets combined represent two-thirds of all indoor water use. More than 4.8 billion gallons of water is flushed down toilets each day in the United States. The average American uses about 9,000 gallons of water to flush 230 gallons of waste down the toilet per year (Jensen, 1991). In new construction and building rehabilitation or remodeling there is a great potential to reduce water consumption by installing low-flush toilets.

Conventional toilets use 3.5 to 5 gallons or more of water per flush, but low-flush toilets use only 1.6 gallons of water or less. Since low-flush toilets use less water, they also reduce the volume of wastewater produced, which can actually enhance the operation of conventional onsite sewage systems by increasing retention time in treatment devices.

Effective January 1, 1994, the Energy Policy Act of 1992 (Public Law 102-486) requires that all new toilets produced for home use must operate on 1.6 gallons per flush or less. Toilets that operate on 3.5 gallons per flush will continue to be manufactured, but their use will be allowed for only certain commercial applications through January l, 1997 (NAPHCC, 1992).

Even in existing residences, replacement of conventional toilets with low-flush toilets is a practical and economical alternative. The effectiveness of low-flush toilets has been demonstrated in a study in the City of San Pablo, California. In a 30-year-old apartment building, conventional toilets that used about 4.5 gallons per flush were replaced with low-flush toilets that use approximately 1.6 gallons per flush. The change resulted in a decrease in water consumption from approximately 225 gallons per day per average household of 3 persons to 148 gallons per day per household a savings of 34 percent! Although the total cost for replacement of the conventional toilets with low-flush toilets was about $250 per unit (including installation), the water conservation fixtures saved an average of $46 per year from each unit's water bill. Therefore, the cost for the replacement of the conventional toilet with a low-flush toilet could be recovered in 5.4 years.

Toilet Displacement Devices. Plastic containers (such as plastic milk jugs) can be filled with water or pebbles and placed in a toilet tank to reduce the amount of water used per flush. By placing one to three such containers in the tank (making sure that they do not interfere with the flushing mechanisms or the flow of water), more than l gallon of water can be saved per flush. A toilet dam, which holds back a reservoir of water when the toilet is flushed, can also be used instead of a plastic container to save water. Toilet dams result in a savings of 1 to 2 gallons of water per flush.

Low-Flow Showerheads. Showers account for about 20 percent of total indoor water use. By replacing standard 4.5-gallon-per-minute showerheads with 2.5-gallon-per-minute heads, which cost less than $5 each, a family of four can save approximately 20,000 gallons of water per year. Although individual preferences determine optimal shower flow rates, properly designed low-flow showerheads are available to provide the quality of service found in higher-volume models.

Whitcomb (1990) developed a model to estimate water use savings resulting from the installation of low-flow showerheads in residential housing. Detailed data from 308 single-family residences involved in a pilot program in Seattle, Washington, were analyzed. The estimated indoor water use per person dropped 6.4 percent after low-flow showerheads were installed (Whitcomb, 1990).

Faucet Aerators. Faucet aerators, which break the flowing water into fine droplets and entrain air while maintaining wetting effectiveness, are inexpensive devices that can be installed in sinks to reduce water use. Aerators can be easily installed and can reduce the water use at a faucet by as much as 60 percent while still maintaining a strong flow. More efficient kitchen and bathroom faucets that use only 2 gallons of water per minute--unlike standard faucets, which use 3 to 5 gallons per minute--are also available.

Pressure Reduction. Because flow rate is related to pressure, the maximum water flow from a fixture operating on a fixed setting can be reduced if the water pressure is reduced. For example, a reduction in pressure from 100 pounds per square inch to 50 psi at an outlet can result in a water flow reduction of about one-third.

Homeowners can reduce the water pressure in a home by installing pressure-reducing valves. The use of such valves might be one way to decrease water consumption in homes that are served by municipal water systems. For homes served by wells, reducing the system pressure can save both water and energy. Many water use fixtures in a home, however, such as washing machines and toilets, operate on a controlled amount of water, so a reduction in water pressure would have little effect on water use at those locations.

A reduction in water pressure can save water in other ways: it can reduce the likelihood of leaking water pipes, leaking water heaters, and dripping faucets. It can also help reduce dishwasher and washing machine noise and breakdowns in a plumbing system.

A study in Denver, Colorado, illustrates the effect of water pressure on water savings. Water use in homes was compared among different water pressure zones throughout the city. Elevation of a home with respect to the elevation of a pumping station and the proximity of the home to the pumping station determine the pressure of water delivered to each home. Homes with high water pressure were compared to homes with low water pressure. An annual water savings of about 6 percent was shown for homes that received water service at lower pressures when compared to homes that received water services at higher pressures.

Source: USEPA Web Site (http://www.epa.gov/water/you/chap3.html)