

## **Your Water Meter is the Best Tool You Have for Conserving Water**

You may not be aware of this, but undetected water leaks account for an astounding 5-15% of total water use for single family homes and even more for businesses. A dripping fixture can waste nearly 500 gallons per month and if your leak is a steady stream through a ¼ inch hole, you could be wasting up to 400,000 gallons per month! The truth is, most homes and businesses have some type of water leak and many times, the owner or tenant has no idea that the leak exists. Finding that leak can be a challenge but with a bit of sleuthing, your water waste woes will soon be gone. Here are some simple ways to find that leak:

### **Finding that Elusive Leak**

Whether you think you have a leak or not, you should follow these steps periodically to ensure your home or business is not wasting water.

Start at the water meter. This will quickly tell you if you have a leak. First, locate your meter. It is usually near the sidewalk in front of your house. Commercial meters may be more of a challenge to find. You can call the City if you are having trouble locating your meter and we'll help you. Our phone number at the Department of Water Resources and Conservation is 707-778-4546. You can call Monday through Friday from 8am to 5pm. For other water conservation related items, please call our Conservation Hotline at 707-778-4507 or visit us online at [www.cityofpetlauma.net](http://www.cityofpetlauma.net).

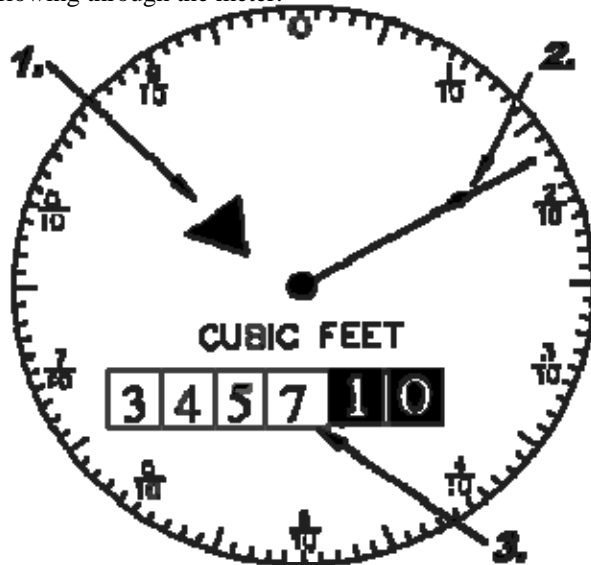
Now, turn off all of the water using fixtures in your house or business and make sure nobody turns any water on or flushes the toilet. Use a screw driver to open the lid to the meter box (use your screw driver to clear away any spider webs) and lift up the metal flap on the meter. The number inscribed on the metal flap is your meter number; write that number down, it may come in handy if you have questions about your service in the future. The lens (glass portion of the meter that you look through) on the meter may be dirty so wipe it clean if it is. Now you are ready to read your meter and determine if you have a leak.

### **Follow these Simple Steps to Read Your Meter:**

- **Find the Low-Flow Indicator**

The *low-flow indicator* is the triangle shaped object on the meter. It rotates whenever water flows through the meter, no matter how small the amount of water. If the triangle turns when all the water is off on your property, you have a leak. If the leak is a very slow leak, the triangle may not appear to be moving at first. You may need to watch the triangle for a while (a minute or so) before you notice movement. To keep your eyes from playing tricks on you, note where one of the points of the triangle is pointing to on the meter (in the illustration below, the point of reference that I would use is pointing to the second "C" in the word "CUBIC". You can also mark the

**1-Low-Flow Indicator** – the low-flow indicator will spin if any water is flowing through the meter.



**2-Sweep Hand** - Each full revolution of the *sweep hand* indicates that one cubic foot of water (7.48 gallons) has passed through the meter. The markings at the outer edge of the dial indicate tenths and hundredths of one cubic foot.

**3-Meter Register** - The *meter register* is a lot like the mileage odometer on your car. The numbers keep a running total of all the water that has passed through the meter. The register shown here indicates that 345,710 cubic feet of water has passed through this meter.

position of the triangle with a wax pencil or felt-tip pen (non-permanent, of course) and come back after 10-30 minutes to see if the triangle has moved (make sure you keep the water off during the 10-30 minutes). If the low-flow indicator hasn't moved after 30 minutes, you may not have a leak and you have finished sleuthing, but it could also mean that your leak is a more sporadic leak, see **Other Hidden Leaks** below.

If the triangle is moving and you are not aware of any drips or leaks on the property, you now need to try to isolate the leak to determine if it is originating from inside the property or outside. The first step is to shut off all of the water to the inside of the property. Do this by finding your shut-off valve. On houses it is usually the round handle below a hose bib. Commercial shut-off valves are not so obvious and you may need to solicit the assistance of your maintenance engineer or plumber.

After you have located the shut-off valve, turn it off all the way. For residential homes, open the lowest faucet (a hose bib outside) and highest faucet (a fixture upstairs - or downstairs if one story) to drain your pipes (this will help to reduce water hammer when you turn the water back on). Once the system is drained and no more water is coming out, close the two faucets that you opened. Don't forget to put a bucket under the lowest faucet to save that water you just drained for your plants! Go back to the meter and observe the low-flow indicator for movement. If it is still moving, you've isolated your leak to the outside somewhere between the shut-off valve and the meter. It could be an irrigation valve that is slowly leaking. Check all of your sprinkler heads while the irrigation is off. If water is coming out of any of the heads, you have a leaking valve.

Look up “irrigation valve repair” online or have a plumber or licensed landscape contractor repair your valve. Remember, the leak you are looking for now is a leak when your irrigation system is off. Be sure to turn the system on after you have completed this process to see if you have any leaks in your system while it is running.

The leak could also be in the pipes going from your meter to your building. Look for wet areas in your landscape or hardscape, areas of high weed growth, or algae growth. Look for any drips at hose bibs that are not connected to the building. Do you have a fountain or water feature that has an auto-fill feature? Check your fountain for leaks. If you notice wet areas, you’ll need to either call a plumber or start digging to find the leaky pipe and repair it.

If the low-flow indicator is not moving, you’ve isolated the leak to the inside of the building or home. Slowly turn the water back on at the outside shut-off valve. The biggest culprit for an inside leak is a toilet. Turn off the valve below the toilet and monitor the water level in the tank. If it drops, you’ve found the leak. Otherwise, check all of the water using fixtures in your home, including the hose bibs outside, as they are connected to your house water. Look for drips or other leaks. Don’t forget to check above and below your water heater. Check the connections to your washing machine and under all sinks for the connections to each faucet. How about your refrigerator? If you have an automatic ice machine or water dispenser, check the connections behind the fridge.

### **Other Hidden Leaks**

Keep in mind that some leaks, especially in pools and toilets, are very sporadic, and only occur when the pool or toilet level falls below the auto-fill line. In this case, the leak is occurring steadily but not showing on the meter as a steady leak. When the pool or toilet refills itself, the meter will move. This refilling could occur more irregularly throughout the day so you’ll need to be aware of your toilet or pool refilling itself. You can also turn off the pool’s auto-fill mechanism and/or turn off the toilet at the shut off valve below the toilet. Monitor you pool and toilet levels. If you see a rapid drop in the toilet tank or pool level, you found your leak. Generally for pools, the loss of one-quarter inch of your pool level in a two day period could indicate a hidden leak. Mark your pool level and monitor the rate of drop.

Hopefully, by going through this process, you will have found your leak and learned a lot about your property and water meter along the way. If you still haven’t found your leak, call a licensed plumber or leak detection company to help you.

The City of Petaluma can help you for free by performing our Water Wise HouseCall. Call 1-800-548-1882 to schedule your free residential survey or call our water conservation hotline at 707-778-4507 to schedule a commercial survey. Our surveyors will come to your house or business and check your meter and all of your water using fixtures for efficiency. We’ll also run through your irrigation system and recommend irrigation schedules for you, all for FREE! The surveyors may indicate that you have a

leak somewhere but may not spend a great deal of time locating the leak if it is a hidden one, but now you know how to do it!

Thanks for doing your part to conserve water and keep our community “Green”.



### Some staggering Leak Facts

#### DRIP, DRIP, DRIP:

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

#### STEADY STRAM

- 3" long stream = 1,095 gal/mo
- 6" stream = 2,190 gal/mo
- 9" stream = 3,290 gal/mo

#### HOLEY WATER WASTE – leaks through an opening:

- $\frac{1}{4}$ " = 400,000 gal/mo
- $\frac{3}{16}$ " = 225,000 gal/mo
- $\frac{1}{8}$ " = 100,000 gal/mo
- $\frac{1}{16}$ " = 25,000 gal/mo
- $\frac{1}{32}$ " = 6,300 gal/mo

