

Do-It-Yourself Residential Customer Water Audit

This guide will assist you in understanding your water meter, checking for leaks that can waste water and cost you money, estimating your household's current water use, and making adjustments to your water use. As you read the information provided in this guide, use the Water Use Worksheet to record your water use. You should be able to estimate daily water use and water use for the month.

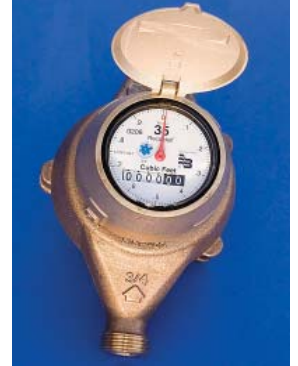
Your water meter

What your water meter can tell you

Your meter can tell you how much water you are using per day, week, month and year. You can monitor your meter yourself and check your figures against our figures to verify the accuracy of your water bill. Your meter can also show leaks in your water system.

How to find your water meter

Your water meter is inside a rectangular concrete box, flush with the ground, and is usually located near a roadway curb or sidewalk near the residence's property line. Be careful when opening the lid as there may be spiders, snakes, bees or bugs inside.



Do you have a leak?

How to detect leaks:

To test for leaks in your plumbing system, turn off all indoor and outdoor water use activity (sinks, dishwasher, sprinklers, etc.). Lift lid from meter and look for a small red diamond shaped dial or a silver colored disk on the meter face. If this is turning you have a leak. To estimate the severity of the leak, record the numbers on your water meter. Wait two to four hours (overnight if possible), then reread your meter. The meter registers in cubic feet, 1 cubic foot equals 7.48 gallons, 100 cubic feet equals 748 gallons or 1 billing unit.

If a leak is detected at the meter:

Turn off the house gate valve to determine if the leak is outside your home. The gate valve is usually located at a hose bib on an outside wall, generally in a direct line from the water meter. If the meter dial still moves, you should investigate the possibility of a leak in the line between the meter and the house.

Irrigation system leaks:

Leaks in your irrigation system won't always show on your meter due to their separate anti-siphon shut-off valves. To find leaks, walk your irrigation lines. Check for unusual wet spots, leaky or broken sprinkler heads, and use your meter to measure total irrigation use. Locate all hose bibs and check for leaks and drips. Replace washers if there are any leaks.

Pool and pool equipment leaks:

Your pool will naturally lose some water to evaporation and splash-out. You may also gain water from rainfall. A rule of thumb is that if you're routinely adding more than two inches of water to your pool per week, you may have a leak. It is worth spending some time and money to repair.

Pools are meant to be watertight but sealants will deteriorate while other parts of your pool shift and settle or just plain wear out. Pools can leak through any of the fittings or accessories, plumbing, or even right through the shell. It is important to repair leaks, not only to save water, heat, and chemicals, but also to prevent undermining pool structural components and washing away fill dirt.

Are there leaks at the equipment pad?

Look closely at the filter, pump, heater, and pool fill valve(s). Check the ground for moisture. Turn the pump on and off looking closely for spraying water when the pump is turned off.

Are there any wet areas around the pool?

Take a walk around the pool's edge and between the pool and the equipment pad. Check for wet soil and eroded areas.

Is your pool equipped with a vinyl liner?

If so, there are special considerations. Look for sinkholes where sand under the liner may have washed away. If an animal has fallen into your pool you may notice claw (tears) marks just below the water line. Spending time under water with a mask may be required to find a small leak in the liner. When the liner becomes old they may have small pinhole leaks.

Unsure of your evaporation rate?

Place a bucket of water beside the pool and mark both the water in the bucket and the pool water level. Wait 24 hours then check the loss of both. If the pool loses more water than the bucket, then you have a leak.

Toilet leaks:

Check toilets for leaks. Put a few drops of food coloring or other dark colored liquid in the tank. Don't flush. Wait 10 minutes. If color appears in the bowl, there is a leak in the toilet mechanism.

Water use outside the house

This section will help you to determine how much water you are using and show you ways to cut back on your water use.

Garden Hoses and Bibs:

Measure garden hose output by writing down the time needed to fill a 1 or 2 gallon bucket. Calculate the amount of water used in one minute. * A typical 5/8" garden hose can use 12 to 15 gallons a minute

Sprinkler System:

Perform a timed consumption test for your irrigation system

- Turn off all water use in the house
- Record the reading on the water meter
- Turn on the sprinklers for the usual water schedule
- When the sprinklers shut off, read the meter again
- Determine how much water is used each time you irrigate
- Enter this number in the Calculate Weekly Water Use section

Perform a catch-can test:

- Set out three (3) empty tuna fish cans or similar straight sided cans within the boundaries of a sprinkler station
- Turn on the system for fifteen (15) minutes
- Measure the depth of the water in each can with a ruler and take the average depth
- If you measured one-quarter inch (1/4") as the average, this would mean that your sprinkler system puts out one inch (1") an hour

Sprinkler Efficiency

Check the accuracy of the irrigation system controller by comparing the watering times of each station to the actual time shown on the controller. Look at all sprinkler heads and check for operating efficiency. Consider replacing non-efficient sprinkler heads with newer conserving models. Over-spray can increase your needed watering time. Check for over-spray onto paved surfaces and reposition the sprinkler head to make sure any over-spray is avoided.

Water Use Inside your Home

Kitchen and Bathroom

Aerators can reduce water flow in half. Aerators can be purchased at your local hardware store. You can also reduce pressure and flow by turning down the valve under the sink that supplies water to the faucet.

Analyze faucets in the kitchen sink and bathroom sink

Put a one (1) gallon jug under a faucet and turn on to the normal flow and write down how long it takes to fill completely.

Showerheads

Put a one (1) gallon or larger bucket under the showerhead and turn on the water full blast. Check number of seconds it takes to fill the bucket. Calculate how many gallons flow out in one 1 minute (gallons per minute, GPM). If the showerhead output is more than 3 GPM, replace the showerhead with a water conserving model of 3 GPM or less. You may also check the meter before and after running the shower for five minutes to determine the volume of water used within the five minute test.

Toilets

Check the tank size. The size may be stamped on the inside walls on the tank or lid. If the size is not marked on the toilet, turn off handle to shut-off valve located on the wall behind the tank. Flush the toilet. The tank should be empty. Use a one (1) gallon bucket to refill the tank to its normal level. If you needed more than 3 gallons of water to fill the tank, consider replacing the toilet with a more efficient model using 1.6 gallons or less.

Calculating Weekly Water Use

Irrigation System: Take the water use calculation from your timed consumption test (on previous page). Multiply this by the number of times your sprinkler system is operating during a seven (7) day period to determine your total weekly irrigation use.

$$\begin{aligned} &\text{Amount of water used during one (1) sprinkler cycle} \quad \underline{\hspace{2cm}} \\ &\quad \times \text{ number of times sprinklers run per week} \quad \underline{\hspace{2cm}} \\ &\quad = \text{my total weekly irrigation use} \quad \underline{\hspace{2cm}} \end{aligned}$$

Indoor and Misc. Water Use: Use the worksheet on page X to determine your total weekly indoor use and other water use calculation. After completing the worksheet on page X enter your total below.

$$\begin{aligned} &\text{My total daily water use indoors} \quad \underline{\hspace{2cm}} \\ &\quad \times 7 \text{ days} = \text{my weekly indoor water use} \quad \underline{\hspace{2cm}} \end{aligned}$$

Total Use: Add the weekly irrigation use total and the weekly indoor totals together.

$$\begin{aligned} &\text{weekly irrigation use} \quad \underline{\hspace{2cm}} \\ &+ \text{weekly indoor water use} \quad \underline{\hspace{2cm}} \\ &= \text{Total weekly water use} \quad \underline{\hspace{2cm}} \end{aligned}$$

Household Indoor Water Use Calculation Worksheet

Use this worksheet to help calculate your average daily indoor household water use. The best and most accurate way to measure your indoor water use is to read your meter for each of the following activities when you are using the water – be sure to only measure one activity at a time. The numbers listed are a guideline but could be very different in your household. You may also run the tests throughout this audit and use the numbers listed below to help figure out your approximate household indoor water use. Keep in mind that without reading your meter the number will not be completely accurate.

Activity	Average Gallons	Our Household
Showers		
Regular flow head (7 gal/minute)	49 gallons	
Low-flow head (3 gal/minute)	21 gallons	
Ultra-low flow (1.75 gal/minute)	12.25 gallons	
Baths		
Full tub	38 gallons	
Toilets – per flush		
Older standard size	7 gallons	
Conserving models	3.5 gallons	
Ultra-low flush	1.6 gallons	
Brushing Teeth		
Faucet running – 3 minutes (faucets do vary)	9 gallons	
Fill drinking cup	8 ounces	
Shaving		
Faucet running – 15 minutes	30 gallons	
Fill basin	1 gallons	
Automatic Dishwasher		
Full cycle	12 gallons	
Short cycle – water miser	8 gallons	
Washing dishes by hand		
Water running – 15 minutes	45 gallons	
Fill sink	3 gallons	
Washing machine – per load		
Full load	43 gallons	
Short water level – water miser	34 gallons	
High – efficiency washer	18 gallons	
Leaking faucets (at 60 drops/minutes per day)	7 gallons	
Leaking toilets per day (approximate)	60 gallons	

TOTAL _____