

## The Facts About Your Water Meter

### General Information

Your water meter is owned and maintained by the City of Newark (CON), and is a highly accurate and dependable water measuring device. Located in a small box in the ground near the street or edge of the property, it registers all the water used in your home or building in gallons. The meter is read by a meter reader every month.

### Meter Accuracy

The design of the water meter does not allow for CON to adjust the dials or the accuracy of the meter. Much like an automobile or other mechanical device, the meter slows down with age and eventually can stop registering completely, but it cannot arbitrarily run faster than it was designed to run. The mechanical parts **ARE NOT** capable of “speeding up” or registering a significantly higher reading than actual. Having a meter register 20,000 gallons of consumption when the usage was actually 4,000 gallons would be like a vehicle with a maximum speed of 100 mph suddenly being able to intermittently run at speeds of 500 mph, it isn’t mechanically possible.

All meters are calibrated and tested in the factory before they are shipped. The American Water Works Association requires meters to be within 98.5 and 101.5% accuracy to be usable. This means an error rate of 1.5% low or high. All of your water bills are charged per 1,000 gallons, which is the industry standard. This means if your perfectly accurate usage was 1,000 gallons, the registered consumption could actually be 15 gallons high or low per 1,000 each month and be within the AWWA guidelines. To put this in perspective, if you had an average billed consumption of 7,000 gallons, you could have actually used a minimum of 6,895, or 105 fewer gallons per month if the meter was running fast but within the AWWA guidelines. Over a year, this would amount to a total overbilling of 1,260 gallons. Since we round all consumption amounts down to the nearest 1,000 gallons, this would result in an excess charge of only \$5.00 **for an entire year** using our current rates. On the contrary, you also could be just as easily undercharged the same amount based on this acceptable meter variance. In reality, rarely does a meter test high enough to exceed the 100% and significantly more often the meter slows down to a point where it under-registers and will eventually stop.

### Your Meter Reading

The meter dial is like the odometer on your car. It continually reads your water consumption and is a cumulative total of the water that has run through the meter since it was installed. At any point in time you get the consumption for a period of time by comparing the beginning reading to the ending reading. The first digit on the right is a “dead zero” because it doesn’t actually move. This is because each 10 gallons is registered by the sweep hand on the face of the register. The red hand that sweeps the dial measures usage by the gallon. Each revolution of this hand is 10 gallons of usage and moves the second dial on the right one unit. Each dial to left then turns every time the dial to its right turns over to zero. Since CON only bills per 1,000 gallons, the meter reader only reads the four digits in white. This reading is subtracted from the previous reading for your account by the billing software, not your meter reader, to arrive at your consumption.

In order for you to monitor the accuracy of your meter reading, you can do the following:

- Note on your bill the approximate read date on your previous bill.
- Write down your reading on approximately the same date of the following month.
- Using only the digits to the left (in white most likely) subtract this reading from the previous reading on your bill to determine your consumption during this period.
- Note that the exact reading date may be a few days before or after the date you read due to scheduling, weekends, etc.
- Compare your calculated consumption to your next bill.
- If want to narrow down the time period for excess consumption, take your reading on a weekly basis (or daily if you're really ambitious!)

Is it possible for the meter to be read incorrectly? Although, it is very uncommon, the meter reader can incorrectly read the meter or it could be incorrectly entered into the computer. For this reason, CON runs a monthly report that "kicks out" any suspected high or low consumption numbers. This report is reviewed and suspected misreads are automatically scheduled to be reread and corrected if necessary.

### **High Consumption**

We also take calls from customers who report that their consumption is much higher than normal and these accounts are reread as well. When we do these rereads, we also do a visual check for evidence of leakage as indicated on the meter. Most of our meters have "flow indicators" and steady movement of this indicator while there is no water usage taking place in the residence indicates there is usage taking place that is not visible to the casual observer. This indicator can show even the smallest amount of consumption. If this dial is moving with nothing using water visibly inside the premises, then there is leak or dripping taking place somewhere in the system. If the leak seems serious, you may wish to turn off your master valve until the problem is located and repaired. If you do not have a master valve, you may call CON to turn off your service. However, be aware that by CON ordinance, all customers are required to have their own shut-off valve so that CON should not have to shut off your water when you want to perform plumbing repairs. It is to your advantage to repair all leaks and drips as soon as detected.

### **Maintaining Your Meter Box**

To assist the reader, please keep the meter box free of garbage cans, boxes, piles of yard waste or parked cars, as it is against the CON ordinance to cause a meter to be inaccessible. Please do not install fences or plant trees or scrubs which restrict access to your meter or they may need to be removed. It is very common for meter boxes to become filled with dirt, leaves and other yard debris. There are many factors contributing to this. Meter boxes are generally slightly lower than ground level and are also typically at lower spots in your yard, so all run-off makes it into the meter box. It is our procedure to clean out the meter boxes so that the meter register is free from dirt and debris and easily read. However, it is common to clean out a meter box one month only to find the meter covered the following month. All it takes is a good rain or watering of the lawn for dirt to resettle over your meter from run-off. Dirt over the meter does not mean your meter is not being read. Your meter reading has to be entered into our system in order to be billed and cannot be estimated by the meter reader. Usually when we have reports of meter boxes being full of dirt and debris, the

debris is easily cleared away and a meter reading can be taken. Dirt that is cleared away to read the meter can recover the meter even from insect or rodent activity or the result of slamming down the meter box lid.

### **Meter Maintenance**

CON has a schedule to check your meter periodically to be sure it is working correctly and to repair if necessary. The meter won't cheat you—meters in need of repair will under-register, rather than over-register your water usage. However, if you feel strongly that your meter is not working properly, you may request that your meter be tested. The charge for a meter test is \$50, but if test results show that the meter is over-registering water usage, you will not be charged for the test.

### **Meter Change-Out Program**

CON regularly replaces meters which are ten or more years old. When your meter is changed, a meter employee will knock on the door and notify you that your water will be turned off briefly while your meter is changed. There is no direct charge for a new meter, however, note that since meters typically slow down as they get older, chances are a new meter may result in higher consumption due to more accurate readings compared to the old under-registering meter.

### **Some Facts on Water Leaks**

Toilets can run without visible or audible evidence. This type of leakage can cause the most difficult to detect type of leak, an intermittent leak that is only detectible on the flow indicator if it is occurring while you are looking at the meter. This can easily be occurring at night or when you are at work, without any noticeable evidence. To help detect this problem, put some food coloring in the tank of your toilet before going to bed or while you are at work and let it sit without flushing. If there is leakage occurring, the food coloring will travel to your toilet bowl without it being flushed. To prevent this type of leak, replace your internal toilet mechanisms annually.

When your excess occurs during the summer months while you are using your sprinkler system, you may have a malfunctioning sprinkler timer that is running your system longer than you plan or on more days than you intend. You may also have an underground leak in your sprinkler system that will not be visible above ground and only affects your water bill during months when you are using your sprinkler system. You may be able to determine if this is the problem by monitoring your consumption by doing meter readings daily for a period of time and calculating your usage on days you use the sprinkler versus those days you do not. You can also do the meter readings before and after turning on your sprinkler for a cycle to really get a clearer picture of your water usage for the sprinkler system alone. You may be surprised to find this accounts for your excess consumption and you can call your sprinkler maintenance company to investigate.

Many leaks occur underground and because of gravity and saturation of the ground, can leak tens of thousands of gallons of water per month without visible evidence. Note below how many gallons even a very small leak can use during one month:

1/16"	25,000
1/8"	100,000
3/16"	220,000
1/4"	400,000

A leak detection company or plumber may have electronic devices that can detect underground leaks that may be using thousands of gallons.