



## Flow Meters

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The North Platte Natural Resources District requires the installation and use of approved flow meters on all regulated wells within the Over-appropriated and Fully-appropriated Areas of the District.

Flow meters must be capable of measuring all the ground water pumped by that well or by all wells hooked in a series for each certified use. All water (including any ditch water mingled with well water) measured through a flow meter will be metered as groundwater.

### Flow Meter Resources

Around the beginning of every October, NRD flow meter technicians go around and take the readings from every meter in the NRD. Tips and tools to get prepared are listed below.

- [Flow Meter Rules - Full Text](#)
- [Flow Meter Water Use Calculator](#) (Using Beginning and Ending Readings)
- [View Over-appropriated Map in Detail](#) (The Over-appropriated Area includes the boundary lines established by the Department of Natural Resources - indicated in pink).

### Types of Meters

The North Platte NRD has designated specific brands of flow meters as conforming flow meters. Contact us for more information about flow meters, meter maintenance, or other any other inquiries.

Approved Flow Meter Brands:

- McCrometer
- Mastermeter
- Netafim Octave

### Using Your Flow Meter

Most flow meters have a volume totalizer that registers in acre-feet, acre-inches, cubic feet, or gallons.

It is useful to know how to convert your meter registration value to acre-inches since groundwater allocations in the North Platte NRD are measured in acre-inches.

#### Example 1: Converting Gallons to Acre-Inches

**Left: Standard 8 meter dial face with gallon totalizer.** Remember to note the multiplier beneath the totalizer. In this case, the meter reads "GALLONS x 100, so we add 2 zeros to the 6-digit dial face reading. Gallons = 89,057,200

**Present Meter Reading** 89,057,200 gallons

**Subtract Previous Reading** 79,488,700 gallons

**Total Gallons Used** 9,568,500 gallons

To convert gallons to acre-inches divide gallons used by 27,154

Example: 9,568,500 divided by 27,154 = 352.38 acre-inches

To figure acre-inches used, divide acre-inches by acres in field (example: 125 acres) 352.38 acre-inches divided by 125 acres = 2.82 acre-inches applied

#### Example 2: Converting Acre-Feet to Acre-Inches

**Left: Dial face with acre feet totalizer.** Remember to note the multiplier beneath the totalizer. In this case, the meter reads "ACRE FEET X .001, so we place a decimal point three places to the left. Acre Feet = 974.602

- Present Meter Reading** 974.602 acre-feet
- Subtract Previous Reading** 968.176 acre-feet
- Total Acre-Feet Used** 6.426 acre-feet

To convert acre-feet to acre-inches, multiply acre-feet used by 12

Example: 6.426 x 12 = 77.112 acre-inches

To figure acre-inches used, divide acre-inches by acres in field (example: 64 acres)

77.112 divided by 64 acres = 1.20 acre-inches applied

## Why Meter?

Flow meters accurately record the amount of water pumped and the rate at which water is passing through an irrigation system. Flow meter information not only helps an irrigator monitor the efficiency of irrigation wells but also allows water to be appropriately applied to match a crop's evapotranspiration (ET) rate.

The move toward metering came in 2006 after months of work by the North Platte NRD's Water Resources Subcommittee to come up with ways of dealing with drought-related water shortage issues and allegations by downstream water users of over-pumping in the North Platte NRD. Subcommittee members agree that the best way to substantiate ground water use is through metering.

## Troubleshooting Flow Meter Problems

The following are typical problems encountered by NRD staff when servicing and repairing flow meters:

Condensation Under Lens
Flow meter should be repaired immediately to prevent further damage to the meter.
Meter Lid is Broken or Missing

Lid should be replaced or meter cap installed to prevent excessive heat build-up in the meter.
Gray Dust on Dial Face
Excessive vibration will damage the meter. The meter may need to be relocated.
Meter is not running
Contact your NRD immediately.

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