

# STATE OF COLORADO

## GROUND WATER COMMISSION

Division of Water Resources  
Department of Natural Resources

1313 Sherman Street, Room 818  
Denver, Colorado 80203  
Phone (303) 866-3581  
FAX (303) 866-3589



Bill Owens  
Governor

Greg E. Walcher  
Executive Director, DNR

Hal D. Simpson, P.E.  
Executive Director

April 8, 1998

## POLICY MEMORANDUM 95-3

APPROVED BY THE COMMISSION ON FEBRUARY 24, 1995  
AMENDED BY THE COMMISSION ON FEBRUARY 13, 1998

**POLICY OF THE COLORADO GROUND WATER COMMISSION PURSUANT TO RULE 8, OF THE RULE AND REGULATIONS FOR THE MANAGEMENT AND CONTROL OF DESIGNATED GROUND WATER, CONCERNING THE USE OF FLOW METERS OR POWER METERS (AS AN ALTERNATE METHOD OR DEVICE FOR WATER MEASUREMENT)**

### 1. SCOPE

This policy is applicable to all high capacity wells located in Designated Ground Water Basins that have permits with conditions requiring measurement of withdrawals of water.

### 2. DEFINITIONS

**2.1** The following definitions are applicable to this policy governing the measurement of high capacity wells in Designated Ground Water Basins:

**2.1.1** "Compound system" means a system where the power meter records electrical usage from any electrical device other than the pumping systems from a single well and its attached sprinklers.

**2.1.2** "Complex system" means any system where the total dynamic head at the pump will vary due to multiple discharge locations in a pipeline, or where the method of delivery will vary between open discharge, gated pipe, or sprinkler system during a single irrigation season, or where multiple wells discharge in to a common pipeline.

**2.1.3** "District" means a Ground Water Management District organized under Article 37-90 of the Colorado Revised Statutes.

**2.1.4** "High capacity well(s)" are those wells issued pursuant to 37-90-107, C.R.S., that produce designated ground water as defined in section 37-90-103(6), C.R.S.

**2.1.5** "Inactive well" means any well that is not in use and is disconnected from a power source.

**2.1.6** "Power coefficient" means the amount of electrical energy expressed as kilo-watt hours (KWH) consumed in pumping one acre-foot of water.

**2.1.7** "Field certified" means to verify that a flow meter is in accurate working condition under field conditions when installed or to verify that testing procedures approved by the Commission are properly adhered to when determining a power coefficient. These procedures are to be conducted under the supervision of an individual or entity annually approved for field certification by the Colorado Division of Water Resources.

**2.2** Any other term used in this policy that is defined in Article 37-90 or 37-92 is used with the meaning given therein.

### **3. GENERAL REQUIREMENTS**

**3.1** All wells within the scope of this policy shall either be equipped with a totalizing flow meter that is installed and maintained according to manufacturer's specifications and recommendations or be tested to determine a power coefficient.

**3.2** The Commission may adopt standards and specifications for the installation, calibration, testing, repair and maintenance of flow meters, or for well testing procedures to determine power coefficients.

**3.3** If the well is part of a compound system, or if the pump is driven by an internal combustion engine, the owner or user of the well must utilize the totalizing flow meter method and the provisions of section (4) of this policy.

**3.4** If the well is part of a complex system the owner or user of the well must utilize the totalizing flow meter method and the provisions of section (4) of this policy shall apply; except that the power coefficient method may be utilized after obtaining Commission approval and subject to the following:

**(a)** That power coefficients are field certified for the well under every method of delivery and for every irrigation system configuration for which the well will be operated, or as required by the Commission.

**(b)** The Commission shall use the lowest power coefficient to calculate annual withdrawal from the well.

**(c)** Calculated water withdrawals obtained by using the lowest power coefficient method are not acceptable for any type of future historic use determination.

**3.5** All flow measuring equipment or devices utilized in field certification must have an accuracy within plus or minus 2 percent.

**3.6** No water shall be withdrawn from any well not in compliance with this policy except to determine a power coefficient or to field certify a totalizing flow meter.

### **4. USING A TOTALIZING FLOW METER**

**4.1** Any owner of a well within the scope of this policy who installs a totalizing flow meter after the effective date of this policy shall provide written documentation, to the Commission and the district on a form prescribed by the Commission, verifying the proper meter installation and field certification. This documentation shall be received by the Commission and the district prior to any use of the well.

**4.2** The owner of any well with a flow meter that is required pursuant to Rule 8 of the Designated Basin Rules may be required to submit the form specified in section (4.1) of this policy at the request of the Commission.

**4.3** A totalizing flow meter shall be considered acceptable for the purpose of this policy if it meets the following specifications:

**4.3.1** The totalizing flow meter is capable of having an operating accuracy of plus or minus 5 percent under the manufacturer's recommendations.

**4.3.2** The totalizing flow meter shall be constructed from a material acceptable to the Commission of suitable strength and rigidity to maintain its shape and integrity under all normal field conditions. Where metals subject to rust or corrosion (cast iron, steel, or aluminum) are used, the entire surface of the body of the meter shall be protected with an impervious coating applied by the manufacturer.

**4.3.3** Totalizing flow meters shall be equipped with a direct reading odometer type totalizing register and rate of flow indicator sealed in a water tight (weather proof) case equipped with a viewing glass. The totalizing register shall provide direct readings in acre-feet or gallons, and have sufficient recording digits to assure that "roll over" to zero does not occur within three years. The rate of flow indicator shall be either a direct display of rate of flow in gallons per minute, or a center sweep hand indicating gallons or acre-feet per revolution.

**4.3.4** The totalizing register and rate flow indicator may be required by the Commission, to be sealed with a device or procedure acceptable to Commission (e.g. a wire and lead seal) to prevent tampering or unauthorized removal.

**4.4** When a totalizing flow meter is used, it shall be the owner's responsibility to keep the meter in acceptable operating condition as to provide a cumulative, accurate record of withdrawals.

**4.5** The Commission and the District shall be notified in writing of the date and person performing the field certification of a flow meter 3 days in advance of this procedure.

**4.5.1** Totalizing flow meters installed within the scope of this policy on or after the effective date of this policy shall be field certified when installed.

**4.5.2** Totalizing flow meters installed on said wells as of the effective date of this policy shall be field certified prior to any use of the well in the calendar year following the effective date of this policy, and be field certified every four years thereafter; except that any meter installed and field certified on or after February 24, 1995 and prior to the effective date of this policy shall be field certified every four years thereafter from the date of the last field certification.

**4.5.3** Totalizing flow meters installed on wells that are required to be administered pursuant to Rule 7 of the Designated Basin Rules are required to be field certified every four years after the date of original installation.

**4.5.4** Other flow meters that are required to be installed pursuant to Rule 8 of the Designated Basin Rules may be required to be field certified at the request of the Commission.

**4.6** If the flow meter is not operational, the well shall not be pumped unless an operating flow meter is installed or unless a specific backup water measurement program approved by the Commission is put into effect.

## **5. USING A POWER COEFFICIENT**

**5.1** Any owner of a well within the scope of this policy who utilizes a power coefficient method shall provide written documentation, to the Commission and the district on a form prescribed by the Commission, evidence that the power coefficient was properly determined prior to any use of water from the well.

**5.2** Power coefficients in existence on said wells as of the effective date of this policy shall be field certified on or after the effective date of this policy and field certified every four years thereafter; except that any field certification of a power coefficient determined on or after February 24, 1995 and prior to the effective date of this policy shall be field certified every four years thereafter from the date of the last field certification.

**5.3** The Commission and the District shall be notified in writing of the date and person performing the field certification 3 days in advance of the field certification.

**5.4** When doing a field certification, it shall be conducted when the pumping system has stabilized, i.e., both operating pressure and pumping drawdown has not changed more than 10% in the last hour.

**5.5** If there is any change or adjustment of the well pump, pump motor, irrigation system (e.g. piping, nozzling, etc.), system pressure, pumping lift or any other equipment or factor that would affect the efficiency of the pumping system and thus change the power coefficient the well must be field certified.

**5.5.1** The Commission and District shall be notified within 7 days of the change or adjustment.

**5.5.2** The well must be field certified within 30 days of reinitiating the use of the well to determine a new power coefficient.

## **6. DATA SUBMITTAL**

**6.1** Data as to the annual amounts of water pumped from wells within the scope of this policy shall be for the calendar year and shall be filed with the Commission and District no later than February 15, of each year for the prior years withdrawals.

**6.2** Data for wells which are required to measure withdrawals but are not presently required to report these withdrawals to the Commission or District, shall record the meter readings as required by the Commission or District, and to retain these records and submit such data at the request of the Commission or District.

**6.3** Data shall be complete and shall be submitted on forms prescribed by the Commission. Incomplete forms will not be considered adequate to fulfill the data submittal requirements of this policy.

**6.4** Consent to release power company data to the Commission and the District shall be included with the data submittal.

## **7. INACTIVE WELLS**

**7.1** Inactive wells are excluded from this policy provided a sworn affidavit, on a form prescribed by the Commission, is filed with the Commission and District by February 15 of each year, stating the status of the well as inactive.

**7.2** If the well owner desires to have the power to the well remain connected for any reason, written approval of such must be first obtained from the Commission.

**7.3** Should the well become active at any time, all aspects of this policy are immediately in effect.

## **8. COMPLIANCE**

**8.1** Failure to comply with any of this policy may subject the well owner and/or user to court proceedings and the Commission's and the District's costs, including reasonable attorneys fees, associated with enforcement of this policy pursuant to section 37-90-110, C.R.S.

**8.2** Prior to filing any court action, the Commission and District shall notify the well owner of the violation in writing and shall advise the well owner of the date by which the violation must be corrected to avoid court proceedings, which date shall be at least ten days following the mailings of the notice to the well owner or personal service on the well owner.

## **9. SEVERABILITY**

If any portion of this policy is found to be invalid, the remaining portion of the policy shall remain in force and unaffected.

## **10. VARIANCE**

When the strict application of any provisions of this policy would cause unusual hardship, the Commission may grant a variance for a specific instance provided a written request for the variance is made to the Commission and the Commission finds the request justifiable.

---

Hal D. Simpson  
Executive Director  
Colorado Ground Water Commission