

RULES GOVERNING NEW WITHDRAWALS OF GROUND WATER IN WATER DIVISION 3 AFFECTING THE RATE OR DIRECTION OF MOVEMENT OF WATER IN THE CONFINED AQUIFER SYSTEM

ORDER OF THE STATE ENGINEER

BY THIS ORDER the State Engineer adopts the following rules governing new withdrawals of ground water in Water Division 3 that will affect the rate or direction of movement of water in the Confined Aquifer System.

Rule 1. Title

The title of these rules is “Rules Governing New Withdrawals of Ground Water in Water Division 3 Affecting the Rate or Direction of Movement of Water in the Confined Aquifer System.” The short title for these rules is “Confined Aquifer New Use Rules for Division 3,” and they may be referred to herein collectively as the “rules” or individually as a “rule.”

Rule 2. Authority

These rules are promulgated pursuant to the authority granted the State Engineer in section 37-90-137(12)(b)(I), C.R.S. (2003), and section 37-92-501, C.R.S. (2003), as amended by Senate Bill 04-222.

Rule 3. Scope and Purpose

A. These rules apply to any new withdrawal of ground water from the Confined Aquifer System in Water Division 3 that will affect the rate or

direction of movement of water in the Confined Aquifer System, including a well permit application for a new, increased, or additional supply of ground water from the Confined Aquifer System, but excluding applications to construct a replacement well located within 200 feet of the replaced well or to construct wells specified in paragraphs (a) to (d) and (f) of section 37-92-602(1), C.R.S. (2003).

- B. These rules establish criteria to determine if a new withdrawal of ground water from the Confined Aquifer System in Water Division 3 will affect the rate or direction of movement of water in the Confined Aquifer System.
- C. These rules establish requirements for new withdrawals of ground water from the Confined Aquifer System in Water Division 3 that will affect the rate or direction of movement of water in the Confined Aquifer System.
- D. These rules also establish requirements to ensure that a new withdrawal of ground water from the Confined Aquifer System in Water Division 3 will not cause fluctuations in the artesian pressures in the Confined Aquifer to fall outside the ranges that occurred during the period of 1978 through 2000 and to maintain average artesian pressure levels similar to those that occurred in 1978 through 2000.
- E. These rules are based upon specific study of the Confined Aquifer System as directed by section 37-90-137(12)(b)(I), C.R.S. (2003), and are intended to permit the development of the water resources of Water

Division 3 in a manner that will protect Colorado's ability to meet its interstate compact obligations and to prevent injury to senior appropriators in the order of their priorities, with due regard for daily, seasonal, and longer demands on the water supply.

- F. These rules have as their objective the optimum use of water consistent with preservation of the priority system of water rights and protection of Colorado's ability to meet its interstate compact obligations. These rules also have as their objective allowing fluctuations in the artesian pressures in the Confined Aquifer within the ranges that occurred during the period of 1978 through 2000, and allowing artesian pressures to increase in periods of greater water supply and to decline in periods of lower water supply in much the same manner and within the same ranges of fluctuation as occurred during the period of 1978 through 2000, while maintaining average artesian pressure levels similar to those that occurred in 1978 through 2000.

Rule 4. **Definitions**

- A. As used in these rules:
 - 1. "Confined Aquifer" means the formations, groups of formations, or parts of formations underlying portions of Water Division 3 consisting in part of unconsolidated clays, silts, sands, gravels, and interbedded volcanic rock and containing saturated permeable material that yields

water under artesian pressure that is or may be extracted and applied to a beneficial use. The Confined Aquifer includes any formation, group of formations, or part of a formation containing saturated permeable material that yielded water under artesian pressure during the period 1978-2000, whether or not the water level in the formation, group of formations, or part of a formation is under artesian pressure conditions at the time of the proposed new withdrawal of ground water.

2. "Confined Aquifer System" means the Confined Aquifer and those areas in Water Division 3 not overlying a confining layer, but which provide inflow to the Confined Aquifer.
3. "Well permit application" means an application to construct a well in accordance with the provisions of section 37-90-137, C.R.S.
4. "Nonirrigated native vegetation" means native grasses, sedges, rushes, shrubs, trees, or other plants that rely upon precipitation or shallow ground water for their water supply, including, without limitation, rabbit brush, greasewood, creosote, cottonwoods, and willows.
5. "Rio Grande Compact" means the interstate compact between the states of Colorado, New Mexico, and Texas apportioning the waters of the Rio Grande and codified at section 37-66-101, C.R.S. (2003)

6. "RGDSS" means the Rio Grande Decision Support System, including the RGDSS ground water model, developed by the Colorado Water Conservation Board and the Colorado Division of Water Resources.
7. "RGDSS ground water model" means the finite difference model and its associated modular computer programs developed by the U.S. Geological Survey to simulate, among other things, the flow of ground water (commonly known as "MODFLOW"), as adapted and applied by the Office of the State Engineer to simulate the unconfined aquifer and the Confined Aquifer System. The RGDSS ground water model means the model as it currently exists and as it may be revised from time to time as new data or knowledge of the relationship between the unconfined aquifer, the Confined Aquifer System, and surface streams becomes available. The current exterior boundaries of the RGDSS ground water model are shown on the attached Exhibit 1.
8. "New withdrawal of ground water" means the withdrawal of ground water from a well not yet in existence, the withdrawal of a new, increased, or additional supply of ground water from an existing well, or the conversion of an existing observation or monitoring well into a production well.

B. Any term used in these rules that is defined in sections 37-90-103 or 37-92-103, C.R.S., shall have the same meaning given therein unless the context requires otherwise.

Rule 5. **Principles and Findings**

- A. In adopting these rules, the State Engineer has been guided by the recognition that the Rio Grande Basin is a separate entity, that aquifers are geologic entities and that different aquifers possess different hydraulic characteristics even though such aquifers underlie the same river in the same water division, that there exists a shallow unconfined aquifer and a Confined Aquifer System underlying portions of Water Division 3, that rules applicable to one type of aquifer need not apply to another type, and that the hydrology and geology of the shallow unconfined aquifer and the Confined Aquifer System and their relationship to surface streams in Water Division 3 are unique and among the most complex in the state.

- B. In adopting these rules, the State Engineer has considered the particular qualities and conditions of the unconfined aquifer and the Confined Aquifer System and has considered the relative priorities and quantities of all water rights and the anticipated times of year when demands will be made by the owners of such rights for waters to supply the same. The State Engineer has also considered Colorado's obligations under the Rio Grande Compact and the manner of administration of water rights necessary for Colorado to comply with its obligations under the Rio Grande Compact.

- C. The Confined Aquifer is a multi-layered aquifer. Different formations, group of formations, or parts of a formation in the aquifer have different

hydraulic properties that affect the rate and direction of movement of water in the Confined Aquifer System and the artesian pressures at various depths in the Confined Aquifer.

- D. A ground water model is necessary to consider all the particular qualities and conditions of the Confined Aquifer System and to determine whether new withdrawals of ground water from the Confined Aquifer System will affect the rate or direction of movement of water in the Confined Aquifer System, as well as the effects of such withdrawals on the unconfined aquifer, fluctuations in artesian pressures in the Confined Aquifer, and the flows of natural streams.

- E. While there remains some uncertainty about the effect of ground water withdrawals affecting the Confined Aquifer System upon the natural stream and aquifer systems in Water Division 3, RGDSS provides a basis for understanding the relationship between surface streams and the Confined Aquifer System and the effect of ground water withdrawals from the Confined Aquifer on fluctuations in the artesian pressures in the aquifer. Based upon specific study of the Confined Aquifer System, these rules establish reasonable requirements for any new withdrawal of ground water within the scope of these rules that will affect the rate or direction of movement of water in the Confined Aquifer System so as to permit the development of the water resources of Water Division 3 in a manner that will protect Colorado's ability to meet its interstate compact obligations and

will prevent injury to senior appropriators in the order of their priorities, and with due regard for daily, seasonal, and longer demands on the water supply

- F. The Rio Grande Basin in the State of Colorado, including the unconfined aquifer and the Confined Aquifer System, is over-appropriated. New withdrawals of ground water from the Confined Aquifer System will cause changes in the artesian pressures in the Confined Aquifer and will affect the rate and direction of movement of ground water in the Confined Aquifer System. Unless properly augmented, new withdrawals of ground water within the scope of these rules that will affect the rate or direction of movement of water in the Confined Aquifer System will materially injure vested water rights and increase the burden of Colorado's scheduled deliveries under the Rio Grande Compact.

- G. In adopting these rules, the State Engineer has recognized that new withdrawals of ground water from the Confined Aquifer System shall not be allowed to cause fluctuations in the artesian pressures in the Confined Aquifer to fall outside of the ranges that occurred during the period of 1978 through 2000, while maintaining average artesian pressure levels similar to those that occurred in 1978 through 2000.

**Rule 6. Requirements for New Withdrawals of Ground Water in Water
Division 3 Affecting the Confined Aquifer System**

- A. The State Engineer shall not issue any well permit that involves a new withdrawal of ground water within the scope of these rules, including a well permit for an increased or additional supply of ground water, except pursuant to a judicially approved plan for augmentation.
1. To determine whether a new withdrawal of ground water from the Confined Aquifer System will affect the rate or direction of movement of water in the Confined Aquifer System, the State Engineer shall rely upon the RGDSS ground water model.
 2. In determining whether a new withdrawal of ground water from the Confined Aquifer System will affect the rate or direction of movement of water in the Confined Aquifer System, it shall be recognized that unappropriated water is not made available and injury is not prevented as a result of the reduction of water consumption by nonirrigated native vegetation.
- B. Any new withdrawal of ground water within the scope of these rules must prevent injury to the vested water rights of others that would be caused by the new withdrawal. In addition to all other lawful requirements, the following requirements shall apply to any new withdrawal of ground water within the scope of these rules:
1. The applicant for a new withdrawal of ground water from the Confined Aquifer System shall specify the depth of the well from which the new

withdrawal is proposed, the perforated intervals for the well casing, and the zones where cement grout will be placed. Any decree approving a plan for augmentation that allows a new withdrawal of ground water from the Confined Aquifer System shall require that the well shall not be deepened beyond the depth specified by the applicant without approval of the State Engineer.

2. Except as provided in Rule 6.B.2.d, to prevent injury to the vested water rights of others, the applicant for a new withdrawal of ground water from the Confined Aquifer must change the point of diversion of or permanently retire an existing vested water right or rights to withdraw ground water from the Confined Aquifer with historical withdrawals from the Confined Aquifer equal to the new, increased, or additional supply of ground water to be withdrawn from the Confined Aquifer.
 - a. The vested water right or rights to be changed or permanently retired must be at a location such that the water to be made available by permanently retiring the right or rights will prevent injury to the vested water rights of others from a new withdrawal. There shall be a rebuttable presumption that any vested water right to be changed or retired that (1) is located in a different hydrologic zone, as shown on the map attached as Exhibit 1, than the point of diversion of the new withdrawal, or (2) withdraws from a different

layer in the Confined Aquifer, as defined in the RGDSS ground water model, than the new withdrawal, is not in a location that will be sufficient to prevent such injury.

- b. The historical withdrawals of the vested water right or rights to be changed or permanently retired must be supported by records of totalizing flow meter(s), power records, aerial photographs or other evidence from which the historical withdrawals can be determined.
- c. If the point of diversion of the vested water right or rights to be permanently changed or retired is a well that will no longer be used, the well must be plugged and sealed in accordance with the Water Well Construction Rules adopted by the Board of Examiners of Water Well Construction and Pump Installation Contractors before a new well permit will be issued involving any new withdrawal of ground water from the Confined Aquifer.
- d. Nothing in this Rule 6.B.2 shall preclude an applicant for a new withdrawal of ground water from the Confined Aquifer from proposing and demonstrating that injury to the vested water rights of others that would be caused by the new withdrawal, including fluctuations in the artesian pressures in the Confined Aquifer that would fall outside the ranges that occurred during the period of 1978 through 2000, can be prevented through recharge or injection of water into the Confined Aquifer System.

3. For any new well to withdraw ground water from the Confined Aquifer System, and if the point of diversion of the vested water right or rights to be changed or permanently retired is a well that will continue to be used, a totalizing flow meter or meters must be properly installed and maintained by the applicant in accordance with the manufacturer's specifications at the applicant's expense, properly calibrated at the applicant's expense, and records of withdrawals from the well(s) must be provided to the State Engineer at least annually. The Division Engineer must approve totalizing flow meters in advance of their use and shall establish a list of approved meters. The totalizing flow meter(s) must be calibrated at the applicant's expense every four (4) years by a tester certified by the State Engineer; however, the Division Engineer may require the meter(s) to be calibrated more often due to changed circumstances. The State Engineer may approve alternative means of measuring withdrawals if the applicant can establish that the alternative means are at least as accurate as measurement by a totalizing flow meter.

4. A new withdrawal of ground water from the Confined Aquifer System shall not be allowed to cause fluctuations in artesian pressures in the Confined Aquifer to fall outside of the ranges that occurred during the period of 1978 through 2000, and average artesian pressure levels similar to those that occurred in 1978 through 2000 shall be maintained.

5. Because there are only limited times when depletions to the flows of natural streams in the Rio Grande Basin in Water Division 3 will not cause injury to senior appropriators or impair Colorado's ability to meet its interstate compact obligations under the Rio Grande Compact, the applicant must demonstrate that replacement water necessary to meet the lawful requirements of a senior appropriator at the time and location and to the extent the senior would be deprived of his or her lawful entitlement, and to meet Colorado's interstate compact obligations under the Rio Grande Compact, will be available to replace all depletions to the flows of natural streams, including a natural stream defined in section 37-82-101(2) and 37-92-102(1)(b), caused by a new withdrawal of ground water from the Confined Aquifer System.

6. The RGDSS ground water model shall be used by the State Engineer to determine the amount, time, and location of depletions and fluctuations in artesian pressures that would be caused by any new withdrawal of ground water from the Confined Aquifer System. There shall be a rebuttable presumption that the version of the RGDSS ground water model in use at the time an application for a plan for augmentation is filed accurately determines the amount, time, and location of depletions and fluctuations in artesian pressures that would be caused by a new withdrawal of ground water from the Confined Aquifer System.

7. In determining the amount, timing, and location of depletions that would be caused by any new withdrawal of ground water from the Confined Aquifer System, it shall be recognized that unappropriated water is not made available and injury is not prevented as a result of reduction of water consumption by nonirrigated native vegetation. In particular, the reduction of water consumption resulting from the eradication of phreatophytes or the reduction of water consumption by nonirrigated native vegetation may not be used either: (a) to offset depletions caused by a new withdrawal of ground water from the Confined Aquifer System; or (b) as a source of unappropriated water available for new ground water withdrawals that will affect the rate or direction of movement of water in the Confined Aquifer System.

Rule 7. Effect of Rules

Well permits issued pursuant to these rules are not exempt from the requirements of any other lawful rules governing the use of ground water in Water Division 3, whether now existing or hereafter adopted.

Rule 8. Severability

If any rule or part thereof is found to be invalid by a court of law, the remaining rules shall remain in full force and effect, including any part thereof not found to be invalid.

Rule 9. Effective Date.

These rules shall take effect sixty days after publication in accordance with section 37-92-501(1)(g), C.R.S. (2003), and shall thereafter remain in effect until amended as provided by law. In the event that protests are filed with respect to these rules pursuant to section 37-92-501, C.R.S., the effective date of such rules shall be stayed until such protests are judicially resolved pursuant to the procedures set forth in section 37-92-304, C.R.S.

IT IS FURTHER ORDERED that any person who wishes to protest these proposed rules may do so by filing a protest in writing with the Division 3 Water Clerk in Alamosa, Colorado, in the same manner as for the protest of a ruling of the referee. Any such protest must be filed by the end of the month following the month in which these proposed rules are published.

Dated this 30th day of June, 2004.



Hal D. Simpson
State Engineer
State of Colorado

Hydrologic Zones

RGDSS Ground Water Model

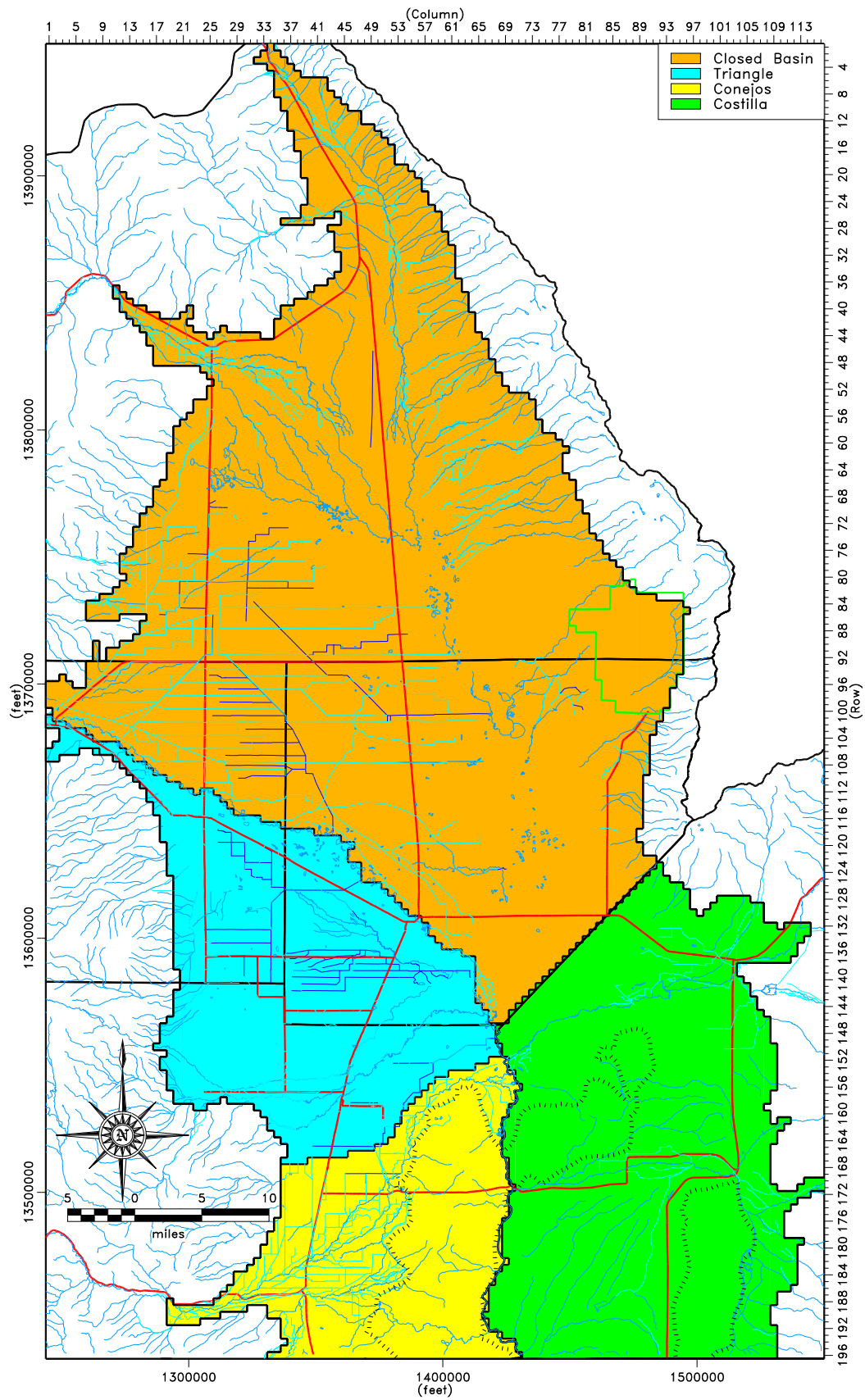


Exhibit 1