

3/3/05
hearing

ORDER NO. 27B

**UPPER REPUBLICAN NATURAL RESOURCE DISTRICT DETERMINATION
OF SCIENTIFIC DATA AND OTHER INFORMATION TO BE CONSIDERED
IN FORMULATING AND ADOPTING AN INTEGRATED MANAGEMENT
PLAN.**

I. Finding of Fact.

- 1.1. Prior to July 16, 2004, the effective date of LB962, which amended the Nebraska Ground Water Management and Protection Act (Act), the Upper Republican Natural Resource District (URNRD) adopted Order No. 27 which found, based upon the preliminary determination by the Nebraska Department of Natural Resources (DNR) that the use of hydrologically connected ground water and surface water resources within the entire area of the of the URNRD was contributing to the dispute over the Republican River Compact. Further, the dispute could be eliminated or reduced by the adoption of a joint action plan; the DNR and URNRD should proceed with the formulation, adoption and implementation of such a plan.
- 1.2. The Act replaced the term "joint action plan" with "integrated management plan". Pursuant to Neb.Rev.Stat. §46-717, the DNR, with input from the URNRD and other affected natural resource districts, was required to specify, by rule and regulation, the types of scientific data and other information to be considered in developing an IMP. After notice and hearing, the rule prepared by DNR was approved as provided by law and is codified at 454 NAC 13.001. The statute further mandated the URNRD adopt a similar rule and regulation specifying the types of scientific data and other information necessary for the purposes previously stated.
- 1.3. The following types of scientific data and other information will be considered in the adoption of an Integrated Management Plan by the URNRD pursuant to Neb.Rev.Stat. §46-717 (Reissue 2004).
 - 1.3.1. Historical data on stream flows within the proposed integrated management plan area.
 - 1.3.2. Past, present and potential future surface water use within the proposed integrated management plan area.
 - 1.3.3. Ground water supplies within the proposed integrated management plan area including hydraulic conductivity, saturated thickness, and other ground water reservoir information, and/or ground water models if available.

- 1.3.4. Local recharge characteristics and rates from any sources, if available.
 - 1.3.5. Precipitation and the variations including trends within the proposed integrated management plan area.
 - 1.3.6. Crop water needs within the proposed integrated management plan area.
 - 1.3.7. Water data collection programs.
 - 1.3.8. Past, present, and potential ground water uses within the proposed integrated management plan area.
 - 1.3.9. Proposed water conservation and supply augmentation programs within the proposed integrated management plan area.
 - 1.3.10. The availability of supplemental water supplies, including the opportunity for ground water recharge within the proposed integrated management plan area.
 - 1.3.11. Surface and ground water quality concerns within the proposed integrated management plan area.
 - 1.3.12. Opportunities to integrate and coordinate the use of water from difference sources of supply within the proposed integrated management plan area.
 - 1.3.13. Existing and potential subirrigation uses within the proposed integrated management plan area.
 - 1.3.14. The relative economic value of different uses of surface and ground water proposed or existing within the proposed integrated management plan area.
 - 1.3.15. Rules and regulations for ground water management developed by the natural resources district(s) affected by the integrated management plan.
- 1.4. A public hearing in the URNRD was held in Imperial, Nebraska, on March 3, 2005. All interested persons were allowed to testify and adduce evidence relevant to the purpose of the hearing.

IT IS THEREFORE ORDERED AS FOLLOWS:

- 1.1. The types of scientific data and other information set forth above, along with other information permitted under Neb.Rev.Stat. §46-717, will be considered in the adoption of the integrated management plan of URNRD. Such additional information includes, but is not limited to existing research data studies and computer modeling.
- 1.2. This Order shall become effective as provided by law.

Ordered this 3rd day of March, 2005, in Imperial, Chase County, Nebraska.

GREG PELSTER, Chairman
Upper Republican Natural Resource District

KENNY E. OWENS, Secretary
Upper Republican Natural Resource District

UPPER REPUBLICAN NATURAL RESOURCES DISTRICT
TECHNICAL MANUAL OF POLICIES AND PROCEDURES
TM-28

3/3/05
hearing

PART I

LEGISLATION ESTABLISHING
NATURAL RESOURCES DISTRICTS

Section 2-3201: Natural Resources, Declaration of Intent.

The Legislature hereby recognises and declares that it is essential to the health and welfare of the people of the State of Nebraska to conserve, protect, develop and manage the natural resources of this state. The legislature further recognises the significant achievements that have been made in the conservation, protection, development and management of our natural resources and declares that the most efficient and economical method of accelerating these achievements is by creating natural resources districts encompassing all of the area of the state, as provided by this Act.

The Legislature further declares that the functions heretofore performed by Soil and Water Conservation Districts, Watershed Conservancy Districts, Watershed Districts, Advisory Watershed Improvement Boards and Watershed Planning Boards shall be consolidated and made functions for the Natural Resources Districts," and the governing boards of such districts and boards shall complete, before July 1, 1972, the necessary transfers and arrangements so that such boards may on that date, begin the operation of Natural Resources Districts, as provided by this Act.

This legislation created twenty-four Natural Resources Districts in the State of Nebraska. The initial twenty-four (now 23) NRD District boundaries were based on the approximate hydrologic boundaries of the recognised river basins of the State.

The Upper Republican Natural Resources District, which encompasses Dundy, Perkins, and Chase Counties, began operations on July 1, 1972. On that date, the District accepted the assets, liabilities, and obligations of the Dundy, Chase, and Perkins County Soil and Water Conservation Districts.

PART II
PURPOSE, GOALS AND OBJECTIVES
OF THE
UPPER REPUBLICAN NATURAL RESOURCES DISTRICT

Purpose

The Board of Directors of the URNRD recognise that the underground aquifer partially underlying the District is a laterally confined aquifer and that there have developed, and will continue to develop, conflicts among users. Such conflicts have been based on a steadily declining water table within the aquifer in the URNRD. Therefore, the actions of the Board become of utmost importance in protecting all uses of groundwater, which include domestic, agricultural, municipal, industrial, wildlife, and recreational uses, from unmanageable declines and from degradation in quality.

Goals

It is the goal of the Upper Republican Natural Resources District Board of Directors to extend groundwater reservoir life to the greatest extent practicable consistent with beneficial use of the groundwater and best management practices, and to protect the quality of the groundwater aquifers within the District boundaries.

The primary short-term goal of the Upper Republican Natural Resources District is to measure, monitor and allocate the groundwater resource within the District.

Objectives

One objective of the Board is to ascertain the amount of groundwater being withdrawn from the aquifer within the Management Area. A second objective is to reduce the amount of groundwater being withdrawn from the aquifer within the Management Area, relative to the amount that might be withdrawn if no restraints were imposed upon groundwater users. A third objective is continued monitoring of groundwater quality to ensure that the groundwater quality remains the same or is improved.

Information from monitoring of groundwater quality and use is to be used to set groundwater allocations so that the groundwater aquifer will be available for present and future generations. It is believed that reduced consumption of groundwater and protection of groundwater quality within the Management Area will result in a longer economic life for the aquifer and thereby, continued and enhanced prosperity will ensue.

PART III

GOVERNANCE OF THE URNRD

An eleven member Board of Directors governs the Upper Republican Natural Resources District. All eligible electors of the District may vote for Board Members at general elections. The District is divided into ten sub-districts. One Board Member is elected from each sub-district and one at-large member is elected.

Candidates for sub-district Board positions must reside in the sub-district for which they are elected. The at-large Board member must reside within the boundaries of the Upper Republican Natural Resources District. The Board of Directors will appoint an eligible person to fill any unexpired term.

Board Of Directors

The Board is responsible for establishing District policies, programs, rules and regulations, and adopting the necessary budget, in order to fulfil the responsibilities of the District as authorized and required by law. The Board is also responsible for overseeing management to insure that the policies, programs, regulations, and budget are carried out as intended, and for approving District expenditures. The day-to-day management is the General Manager's responsibility. In general, the Board sets policy and the staff carries it out.

The Board holds regularly scheduled monthly meetings on the first Tuesday of each month, at which time the Board shall take action and make determinations as necessary and required by law. These meetings shall comply with the Open Meetings Law, and each Director shall receive a copy of meeting notices and agendas.

A majority of the voting members of the Board shall constitute a quorum, and the concurrence of a majority of the Directors present at any regular or special meeting at which such quorum is present shall constitute official action of the entire Board. If less than a quorum is present at a meeting, no official action shall be taken, and the presiding officer shall adjourn the meeting. If a quorum cannot convene for any reason, the General Manager shall have the authority to approve recurring bills and salaries, and forward them to the District Treasurer for his or her signature, as funds are available in the District treasury.

Each Director present at regular or special meetings shall be entitled to one vote upon each matter submitted to a vote, including the chairman if he chooses to vote. The Board shall follow Robert's Rules of Order in conducting District business. Action taken on any question or motion, duly moved and seconded, shall be by roll call vote of the Board in open session, and the record shall state how each member voted, or if the member was absent or abstaining.

OFFICERS OF THE BOARD

Officers of the Board shall include Chairperson, Vice Chairperson, Secretary, and Treasurer. The officers of the Board are elected by majority vote of Board members present.

The officers shall hold office for a one (1) year term and until his/her successor has been duly elected and qualified, or until he/she vacates the office due to death, disability resignation, relocation, removal, or other disqualification. A vacancy in any office on the Board due to death, disability, resignation, removal, or other disqualification shall be filled by election of the Board for the unexpired term of the office.

Duties

- A. Chairperson shall be the principal officer of the Board and subject to the control of the Board. The Chair shall be empowered to make non-policy decisions between meetings in carrying out the works, policies, and intents of the District. He/she will preside at all meetings of the Board of Directors. He/she may sign, with any proper officer, any agreements, contracts, or other instruments, which the board has authorized to be executed. Exceptions would be in cases when the signing and execution shall be expressly delegated by the District Board, or by the bylaws, to some other officer of the Board, or shall be required by law to be otherwise signed and executed. The Chairman shall perform all duties incident to the office of chairman, and the Board may prescribe such other duties.
- B. Vice Chairperson, in the absence of the Chairperson or in the event of his inability to act, shall perform the duties of the Chairperson. When so acting, he will have all the powers of, and be subject to all the restrictions upon, the Chairperson. The vice-chairperson shall perform other duties from time to time that may be assigned to him/her by the Chairperson or by the Board.
- C. Secretary- Treasurer shall keep the minutes of the Board, see that all notices are given in accordance with Board policies or as required by law. In general, the incumbent will perform all the duties incident to the office of Secretary-Treasurer and such other duties from time to time that may be assigned to him by the Chairperson or by the Board. He/she shall keep an accurate account of all funds received and expended by the District, be bonded in the amount required by statutes, and see that all approved bills payable are paid and receipts received, and be empowered to sign checks on the District's account to retire approved bills and debts of the District.

In case of temporary absence of any officer for any reason that the Board may deem sufficient, the Board may delegate the powers and duties of such officer to any other officer, or to any other Director of the Board, for the time of the temporary absence, provided a majority of the Board concurs.

Committee Responsibilities

Committee Responsibilities are divided into different sections represented by five standing Board Committees. The Executive Committee shall appoint membership to the other four standing committees. The committees shall have and exercise duties in the best interests of the District. The committees have individual responsibilities of overseeing District functions and activities and making recommendations to the Board of Directors as necessary to carry out the responsibilities of the District. The Chairperson or the Board, may, from time to time, assign additional duties to specific committees.

- A. Executive Committee: The Executive Committee, consisting of the Chairperson, The Vice- Chairperson, and the Secretary- Treasurer, is responsible for Board organization, functions, ethics, and discipline. The Committee oversees personnel (including salary, wages, and benefits), buildings, and equipment needs, as well as general management of the District, and makes recommendations to the Board regarding these responsibilities.
- B. Budget Committee: The Budget Committee oversees the financial management and long range planning of the District. The annual budget of all the District's activities are reviewed and approved by this Committee which then makes recommendations to the Board, prior to Board consideration of approval of the budget.
- C. Variance Committee: The Variance Committee meets with all individuals who request a variance from the rules and regulations of the Board. The Committee reports to the Board at a Regular Board meeting. The variance requests are reviewed by the Board and placed on the agenda for the next Regular Board meeting for decision.
 - 1. All information for a variance request should be brought to the NRD Office at Imperial and discussed with the Manager.
 - 2. The Manager will distribute all information concerning the variance to the Variance Committee, all other Board members, and person(s) requesting the variance.
 - 3. The Variance Committee will meet with person(s) requesting a variance at the time set by the Manager to hear the variance request.
 - 4. The Variance Committee will report to the Board at a regular or special Board meeting the information received for the variance requested.
 - 5. The variance request will be voted on at the next regular Board meeting. At that time the Variance Committee will make a recommendation to the Board concerning the variance request.
- D. Groundwater Control Committee: The Groundwater Control Committee reviews all information received from the staff, and state and federal agencies. The Committee shall make recommendations to the full Board on needed studies and research projects; amendments to the Groundwater Control Rules and Regulations; date, time, and place to hold information meetings and public hearings; and material that should be made available to the public at information meetings and public hearings.
- E. Education and Information Committee: The Committee oversees both the education and information dissemination activities of the Board, which include the following: habitat, tree planting, public relations, education, and informing the public of District activities.

Standing Committee Membership

Executive Committee

Greg Pelster, Chairman
Tom Terryberry, Vice Chairman
Kenny Owens, Secretary/Treasurer

Information and Education Committee

Jerry Kuenning, Chairman
Mike Mosel
Terry Martin
Michael Strand

Budget Committee

Donn Gengenbach, Chairman
Jerry Kuenning
Kerry Bernhardt
Kenny Owens

Variance Committee

Kenny Owens, Chairman
Terry Martin
Donn Gengenbach
Michael Strand
Tim Schilke

Groundwater Control Committee

Dean Large, Chairman
Tom Terryberry
Kerry Bernhardt
Terry Martin

EQIP Local Work Group

Terry Martin, Dundy
Greg Pelster, Perkins
Jerry Kuenning, Chase

Building Committee

Donn Gengenbach, Chairman
Terry Martin
Tim Schilke
Kenny Owens

URNRD Special Assignments 2005

Republican River Basin Coalition

Greg Pelster
Dean Large

NARD

Mike Mosel, Delegate
Terry Martin, Alternate

Negotiating Committee

Greg Pelster
Tom Terryberry
Kenny Owens
Dean Large
Terry Martin

Upper Republican NRD Staff

Imperial Office

308-882-5173

Jasper Fanning, Manager
Debra Hayes, Administrative Assistant
Mike Nesbitt, Conservation Programs Coordinator
Heather Francis, Conservation & Information Specialist
John Lemon, Conservation Technician
Todd Burrell, Conservation Technician
Sid Bartels, Water Quality Conservation Technician

URNRD Field Office Secretaries

Located in NRCS Offices

Wilma Zimbelman, Benkelman
308-423-2696
Rebecca Spady, Imperial
308-882-4263
Patty Clough, Grant
308-352-4776

PART IV
CONVERSION TABLES
And
ANNUAL ALLOWABLE WITHDRAWAL FORMULA

WATER EQUIVALENTS

1-acre-foot	326,850 gallons
1 acre-inch	27, 154 gallons
1 acre-foot covers 1 acre of land 1 foot deep	
1 acre-inch covers 1 acre of land 1 inch deep	
10.833 acre-feet	1 in./ac. on 130 acres
157.08 acre-feet	14.5 in./ac. on 130 acres
98.05 hr. @ 600 gpm	1 in./ac. on 130 acres
73.54 hr. @ 800 gpm	1 in./ac. on 130 acres
58.83 hr. @ 1000 gpm	1 in./ac. on 130 acres

ANIMAL UNIT EQUIVALENTS

Slaughter Steer/Heifer	1.0
Cow --1000 Pounds	1.0
Dairy Cow	1.4
Cow/Calf Pair	1.4
Sheep (Ewe)	0.1
Swine- -Under 55 pounds	0.05
Swine --Over 55 pounds	0.4
Horse --{Medium Size)	1.0

PART V

ANNUAL ALLOWABLE WITHDRAWAL FORMULA

In the evaluation of the Annual Allowable Withdrawal for any purpose, the following three-mile radius circle formula shall be used:

$$A = \frac{640(D)(S.Y.) 3.1416 R^2 H}{(1.0 - Ir)t} + \frac{640(f)(Pr) 3.1416 R^2}{12(1.0 - Ir)}$$

where,

A = Annual allowable withdrawal within the circle being evaluated in
acre-feet per year

D = Allowable depletion (expressed as a decimal)

S.Y. = Specific yield (dimensionless)

R = Radius of circle (miles)

H = Average saturated thickness within the circle (feet)

t = Time period during which depletion, **D**, occurs (years)

Pr = Precipitation recharge (inches/yr.)

f = Fraction of **Pr** that is available for appropriation in the circle (dimensionless)

Ir = Fraction of **A** that returns to the aquifer as deep percolation, i.e., irrigation return
(dimensionless)

The constants in the above equation are:

$$D = 0.26, R = 3 \text{ miles}, t = 100 \text{ years}, f = 0.2 \text{ and } Ir = 0.15$$

Saturated thickness, H, shall be determined by evaluation of the 3 year average contour maps developed from spring well measurements conducted by the NRD as well as other pertinent available water level data.

Specific yield, S.Y., and **Precipitation Recharge, Pr**, will be determined from Figure 19, page 34 and Figure 20, Page 40, respectively, "Simulated Response of the High Plains Aquifer to Ground-Water Withdrawals, Upper Republican Natural Resources District, Nebraska," Water-Resources Investigations Report 95-4014, USGS, 1995, as well as other pertinent available water level data.

Definitions

Unless expressly stated otherwise the following terms when used in these Rules shall have the meaning indicated in this Rule.

"Allowed Average Annual Amount of Withdrawal" means the average amount of water in acre-feet that a permittee may withdraw from a well in a calendar year.

"Saturated Aquifer Material(s)" means those aquifer materials containing sufficient water that can be drained by gravity and placed to beneficial use.

"Specific Yield" means the volume of water which can be drained by gravity from a saturated volume of aquifer material divided by the volume of material. This ratio can be expressed as a percentage.

"Three-Mile Circle" or "Circle" means a circle with a radius of three miles centered at the location of the well or proposed well used to appropriate water from the Highplains Aquifer.

An Example Calculation using the AAW Formula to solve for -

A = Annual allowable withdrawal within the circle being evaluated in acre-feet per year

where,

- D = .26 Allowable depletion (expressed as a decimal)**
- S.Y. = 0.2 Specific yield (dimensionless)**
- R = 3 Radius of circle (miles)**
- H = 200 Average saturated thickness within the circle (feet)**
- t = 100 Time period during which depletion, D, occurs (years)**
- Pr = 2 Precipitation recharge (inches/yr.)**
- f = 0.2 Fraction of Pr that is available for appropriation in the circle (dimensionless)**
- Ir = 0.15 Fraction of A that returns to the aquifer as deep percolation, i.e., irrigation return (dimensionless)**

$$A = \frac{640(D)(S.Y.) 3.1416 R^2 H}{(1.0 - Ir)t} + \frac{640(f)(Pr) 3.1416 R^2}{12(1.0 - Ir)}$$

$$A = \frac{(640)(.26)(0.2)(3.1416)(3^2)(200)}{(1.0 - 0.15)100} + \frac{(640)(0.2)(2)(3.1416)(3^2)}{12(1.0 - 0.15)}$$

$$A = \frac{(904.78)(200)}{85} + \frac{804.26(9)}{10.2}$$

A = 2838.53 Acre Feet of annual allowable withdrawal

This number is compared to the total acre feet of allocated water for all the Certified Irrigated Acres contained within the circle as part of the evaluation of the impact of any proposed transfers or other water management techniques.

PART VI

WELL SPACING REQUIREMENTS

Table 1. Well spacing requirements

Minimum Spacing Requirements for Wells Drilled After April , 2005			
	New Wells	Replacement Wells	
		Well to be replaced is not within 1320 ft. of another land owner's domestic or livestock well or 5280 ft. of any other well	Well to be replaced is within 1320 ft. of another land owner's domestic or livestock well or 5280 ft. of any other well
Domestic	Not regulated	Not regulated	Not regulated
Livestock	Not regulated	Not regulated	Not regulated
Commercial Livestock	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Irrigation	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Industrial	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Municipal	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced

Map 1. Upper Republican Natural Resource District

3/3/05
hearing

