

**ANNUAL REPORT OF WATER USE ACTIVITIES
IN THE PLATTE BASIN WITHIN TRI-BASIN NRD
TO MEET THE REQUIREMENTS OF THE JOINT INTEGRATED MANAGEMENT PLAN
FOR THE 2010 BASIN-WIDE MEETING**

I. SUMMARY

The purpose of this report is to convey information that Tri-Basin Natural Resources District (TBNRD) agreed to supply to the State of Nebraska as part of a joint Integrated Management Plan for the fully and overappropriated portions of the Platte River basin.

II. INTRODUCTION

TBNRD encompasses portions of the Republican, Platte and Little Blue River Basins (see map #1, Appendix A). The district also contains an area commonly referred to as the "Groundwater Mound," a large area spanning portions of all three basins that is characterized by groundwater levels that are higher than historic "pre-development" groundwater elevations.

More than 100,000 acres of cropland within the Platte Basin portion of TBNRD are irrigated with water diverted from the Platte River and distributed through the canals of the Central Nebraska Public Power and Irrigation District (CNPPID). Surface irrigation water and the canals that distribute it enhance recharge of groundwater supplies within the district. In addition to helping sustain groundwater supplies, this incidental recharge has increased streamflows in the Platte and Republican tributaries. High groundwater levels have also saturated soil and sub-soil in parts of northern Phelps and Kearney counties, requiring the TBNRD to construct drainage ditches (Improvement Project Areas or IPAs) in an attempt to stabilize groundwater levels below the crop root zone. The TBNRD has designated portions of the Platte Basin as a "High Groundwater Management Area" pursuant to TBNRD rule 8.6 for purposes of groundwater quantity management.

III. CERTIFIED IRRIGATED ACRES

The district began certifying irrigated acres in the Platte Basin in 2004. The initial certification process in the Platte Basin ended on June 15, 2005. Since that time corrections and revisions to the certified acre database have occurred with a net result as of December 31, 2009, of 297,633.94 certified acres. Detailed data regarding the location and number of certified irrigated acres can be found in Appendix B.

IV. APPROVED CERTIFIED ACRE AND GROUNDWATER TRANSFERS

A. TBNRD allows certified irrigated acres to be transferred from one parcel to another within the Platte Basin portion of the district, with some limitations. These limitations include a prohibition on transfers from the fully appropriated portion of the district to the overappropriated area. Certified irrigated acres also cannot be transferred from parcels with surface water or commingled water

resources to parcels that have groundwater wells as their only water source. Since January 1, 2006, the district has approved 27 transfers. A total of 506.32 certified irrigated acres were involved in these transfers. Detailed data regarding the location, amount and conditions associated with each transfer can be found in Appendix C.

B. TBNRD regulates groundwater pumping off of overlying land by requiring landowners to secure groundwater transfer permits before they can pump groundwater to adjoining properties that are not under the same ownership. Groundwater transfer permits can only be used to supply groundwater for irrigation of certified irrigated acres. Landowners are required to install flowmeters on wells that are permitted for transfers and to report pumping from these wells annually to the TBNRD. TBNRD has issued 25 groundwater transfer permits in the Platte Basin since January 2006 (see Appendix D).

V. WELL CONSTRUCTION PERMITS

A. Since 1989, TBNRD has required landowners to secure well construction permits before they drill new, replacement or conditional replacement wells capable of pumping more than 50 gallons per minute. The district issues three categories of well permits: new well permits, conditional replacement well permits, and replacement well permits. New well permits are issued to irrigators only in situations where certified irrigated acres are transferred to parcels that do not have a previous history of irrigation.

TBNRD requires landowners to agree to several conditions on the operation of new wells and conditional replacement wells before permits are issued. These conditions are listed in an agreement that is signed by landowners when they apply for these types of well permits. A copy of that agreement is attached to this report as Appendix F.

B. Following is a breakdown of well permits that TBNRD has issued in the Platte Basin since January 1, 2006. A detailed listing of well permits is included in Appendix E.

1. New well permits (variances)=5
 - a. irrigation=2 (associated w/ Cert. Ac. Transfers)
 - b. municipal=2
 - c. industrial=1
2. Replacement well permits=69
 - a. irrigation=68
 - b. municipal=0
 - c. industrial=1
3. Conditional replacement well permits=39
 - a. irrigation=39
 1. Supplemental to surface water=33
 2. Supplemental to groundwater=6
 - b. municipal=0
 - c. industrial=0

VI. VARIANCES

TBNRD issues new well permits to landowners only after they have transferred sufficient certified irrigated acres for the intended new use. The TBNRD Board must also approve a variance to the rule prohibiting new well construction before new well permits can be issued. Five new well construction permit variances have been issued in the Platte Basin since January 1, 2006, as shown in V.B.1 above.

VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

TBNRD collects water use data annually from all municipalities and industries within the district. Municipal and industrial water use data for communities and industries located in the Platte Basin that was previously reported to TBNRD is included in Appendix G. More detailed monthly water use data for municipalities and industries will be provided when it becomes available.

VIII. FLOW METER DATA

TBNRD requires flowmeters be installed and annual water use to be reported to the TBNRD whenever landowners drill new wells, conditional replacement wells, receive irrigation-related cost-share funds or when groundwater is transferred from one property to another. Landowners currently report data from 301 flowmeters in the Platte Basin. The metered wells irrigate 35,312.62 certified irrigated acres. District flowmeter data is reported annually to DNR for purposes of Republican River Basin Compact Administration accounting. Platte Basin flowmeter data is included in Appendix H.

IX. OTHER WATER BANKING ACTIVITIES

TBNRD is considering establishing a water bank of some sort, but no policy has yet been agreed upon by the TBNRD Board of Directors.

X. RETIRED ACRES AND OTHER STREAM FLOW ACCRETION ACTIVITIES

Tri-Basin NRD paid CNPPID to divert 2906 acre-feet of water from the Platte River into Elwood Reservoir in Gosper County. Tri-Basin NRD accrued 755 acre-feet credit for Platte diversions into Elwood Reservoir in 2008 and 2009. These diversions were made from the Platte when streamflows exceeded target flows, or when irrigation deliveries were suspended due to heavy rainfall in the CNPPID irrigated area. They were above and beyond normal diversions into the reservoir for irrigation deliveries.

Tri-Basin NRD also accrued credit for 316 acre-feet of water pumped into the Platte River near Kearney in 2009 through a wastewater pipeline from the KAAPA ethanol plant near Axtell. This pipeline was constructed in 2007.

TBNRD cooperated with Ducks Unlimited to retire 73.12 certified irrigated acres in one parcel in the Platte Basin. TBNRD landowners have also signed up to temporarily cease irrigation on 1146.7 certified irrigated acres in

the Platte Basin, through USDA CREP, EQIP and related programs, as of 2009 (see Appendix I).

Landowners reported to the TBNRD on district Groundwater Quality Management Area crop reports that conservation tillage practices have been adopted on 17,285 certified irrigated acres in the Platte Basin portion of the district (see Appendix J). It is estimated that no till or minimum tillage practices have been adopted on more than 100,000 irrigated acres in the Platte Basin portion of the district. Recent university research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as 3" per acre on irrigated cropland, as compared to conventional tillage systems, so if the estimates of no-till acres are accurate, as much as 25,000 acre-feet of water was conserved in the Platte Basin in TBNRD in 2009 through this conservation practice.

Finally, Tri-Basin NRD is in the final stages of negotiating a contract to lease irrigation water rights from CNPPID. It is anticipated that, beginning in 2010, 1633 acre-feet of irrigation water will be delivered to the Platte to offset depletions due to post-1997 groundwater uses as a result of this lease agreement.

XI. GROUNDWATER LEVELS

TBNRD has an extensive network of 107 dedicated groundwater observation wells and 91 irrigation wells that are used to measure groundwater levels (see Map #2, Appendix K). TBNRD also works cooperatively with CNPPID to gather groundwater level data. Data from 160 wells measured by CNPPID are included in TBNRD's groundwater observation well database. District water level data is reported annually to U.S. Geological Survey and UNL-Conservation and Survey Division. Groundwater level data for the district is attached on a CD (Appendix L).