

Final

October 4, 2004

Jasper Fanning, Interim Manager
Upper Republican Natural Resources District
P.O. Box 1140
Imperial, Nebraska 69033

Subject: Coordination of Water Well Data
Upper Republican River Natural Resources District (URNRD)

Dear Jasper,

While I was composing this letter your annual settlement activities report arrived. We appreciate your staff working with us in our efforts to finalize our annual water use computations. I realize that our needs for proper registration of ground water wells are very similar. This conviction was reinforced after comparing the URNRD Rules and Regulations for Ground Water Control to Kansas v. Nebraska and Colorado settlement documents and to state statutes. The purpose of this letter is to request that we mutually develop a format for working together to coordinate the transfer of water well data between our two agencies. Three specific goals that we have are:

- 1. To have all active, inactive and abandoned irrigation wells properly registered
- 2. For every active well, identify which meter is used to report its pumping
- 3. Develop procedures that will keep well registration information up-to-date

Due to URNRD's current record keeping we have a good beginning point, since we already share pumping, meter readings and delivery system type. It is critical that our records incorporate the same or similar data that your records show. In the Solutions section below is a suggested process for updating our databases and well registration records.

BACKGROUND

In recent communications with your staff it has become apparent that we have more work to do to rectify our water well databases. Before I get into specific suggestions for improved database compatibility, I would like to give you some insight into why we want to synchronize our well information.

As part of the Final Settlement Stipulation (Stipulation) of Kansas v. Nebraska and Colorado, the Republican River Compact Administration's Accounting Procedures and Reporting Requirements document specifies how Nebraska is to annually report groundwater pumping. These procedures are sometimes referenced as Appendix C of the Stipulation. Appendix C, Section V.A.2. states that Nebraska, through the representative Natural Resources Districts will provide an annual tabulation of water pumped by each irrigation well or group of wells in the case of a manifold system.

In addition to the annual water well withdrawal reports, we are obligated to provide input data for the Republican River Compact Administration Groundwater Model. Well pumping is an integral part of the model input. It is important that we account for irrigation, municipal and industrial groundwater pumping. It is equally important that we assign the proper spatial distribution of the pumping across the basin.

DEFINITION OF TERMS

One of the themes that came out of recent communications was that the two groups are working from different perspectives and therefore, have different concepts of the meaning of some common terms. I believe that clarifying the meaning of a few terms from the Department's perspective will enhance our future communications. An important part of the Stipulation is that compact wells should be properly registered. Your groundwater management rules have the same requirement, so I am confident that we have a common goal. Please share the following paragraphs with appropriate URNRD staff.

Four key terms are replacement, abandoned, inactive and illegal. These terms have specific meaning when viewed from the perspective of our groundwater well registration staff. Requirements for replacement wells are defined in statute and referenced by the Stipulation. From the Department's perspective and that of the Stipulation, the following description of terms apply:

A replacement well for purposes of **registration** is defined by statute. It is defined as a water well which (a) replaces an abandoned water well within three years after the last operation of the abandoned water well or replaces a water well that will not be used after construction of the new water well and the original water well will be abandoned within one year after such construction and (b) is constructed to provide water to the same tract of land served by the water well being replaced. The Department cannot register a water well as a replacement water well until the department has received a properly completed notice of abandonment for the water well being replaced.

A replacement water well for purposes of the **settlement** is a well that replaces an existing well that (a) will not be used after construction of the new Well and (b) will be abandoned within one year after such construction or is used in a manner that is excepted from the Moratorium described in Subsections III.B.1.c.-f. of the Stipulation. There are limitations on the replacement well to prevent an expansion of consumptive use by the new well. The applicable exception to the moratorium is for: "Replacement Wells, subject to all limitations or permit conditions on the existing Well, or in the absence of any limitation or permit condition only if the Beneficial Consumptive Use of water from the new Well is no greater than the Historic Consumptive Use of water from the Well it is to replace. Nebraska will calculate Historic Consumptive Use in the manner proposed in Appendix F."

Under subdivision (3)(b) of Section 46-714 and subdivision (6)(d) of Section 46-739, NRDs may define replacement wells differently from either of the two definitions noted above. Hopefully,

that will not create further confusion above what constitutes a replacement well for purposes of data transfer.

An abandoned water well is defined by statute as a water well (1) the use of which has been accomplished or permanently discontinued, (2) which has been decommissioned as described in the rules and regulations of the Department of Health and Human Services Regulation and Licensure, and (3) for which the notice of abandonment required by subsection (2) of section 46-602 has been filed with the Department of Natural Resources by the licensed water well contractor or pump installation contractor who decommissioned the water well or by the water well owner if the owner decommissioned the water well.

An inactive status water well is defined by statute as a water well that is in a good state of repair and for which the owner has provided evidence of intent for future use by maintaining the water well in a manner which meets the following requirements:

1. The water well does not allow impairment of the water quality in the water well or of the ground water encountered by the water well;
2. The top of the water well or water well casing has a water-tight welded or threaded cover or some other water-tight means to prevent its removal without the use of equipment or tools to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes or contaminants into the water well; and
3. The water well is marked so as to be easily visible and located and is labeled or otherwise marked so as to be easily identified as a water well and the area surrounding the water well is kept clear of brush, debris, and waste material.

There are currently two statutes that define illegal well. Health and Humans Services Systems statutes defines illegal well as:

Any water well which has not been properly decommissioned and which meets any of the following conditions:

- (a) The water well is in such a condition that it cannot be placed in active or inactive status;
- (b) Any necessary operating equipment has been removed and the well has not been placed in inactive status;
- (c) The water well is in such a state of disrepair that continued use for the purpose for which it was constructed is impractical;
- (d) The water well was constructed after October 1, 1986, but not constructed by a licensed water well contractor or by an individual on land owned by him or her and used by him or her for farming, ranching, or agricultural purposes or as his or her place of abode;
- (e) The water well poses a health or safety hazard; or
- (f) The water well is an illegal water well in accordance with section 46-706(5).

Section 46-706(5) defines illegal water well as (a) any water well operated or constructed without or in violation of a permit required by the Nebraska Ground Water Management and Protection Act, (b) any water well not in compliance with rules and regulations adopted and

promulgated pursuant to the act, (c) any water well not properly registered in accordance with sections 46-602 to 46-604, or (d) any water well not in compliance with any other applicable laws of the State of Nebraska or with rules and regulations adopted and promulgated pursuant to such laws.

ISSUES

A key to the success of our well status update will be to concisely identify wells we are managing. Last winter URNRD staff entered well identification numbers (Well ID) into the URNRD database tables. The Well ID is an integer number that our groundwater registration staff uses to uniquely identify each well. In our registration database the Well ID is sometimes referenced as the Sequence Number.

The registration number (e.g. G-012345 or A-012345) is used for original wells, their replacements, and series wells. When our staff refers to the registration number they are always referring to the number that starts with an "A" or "G". The point is that registration numbers cannot uniquely identify every well. A key requirement for database operations is that each record can be uniquely identified. Therefore, we all need to use the Well ID to exchange well information.

Since several wells can be pumped through a single meter or one well can be pumped through several meters, the table relationships in our compact database should reflect the possible combinations of wells and meters. We have solved this with appropriate table relationships in our compact databases. The key for the Department to track these relationships is to have a unique Meter ID with each well record. With a little effort we should be able to devise a scheme to share records that provide sufficient data to maintain the well/meter relationships. It would require minor table modifications.

Another problem that has come to light is related to the irrigation wells south of the Republican River in Dundy County. Until recently, I assumed the Dundy county table represented meter readings for the entire county. I was informed that is correct for 2003 data only. Do you have separate tables for the wells south of the river for 2001 and 2002? I would appreciate any clarification or additional data that you could provide.

SOLUTION

Below are some steps we could take to update the well registration information and bring closure to the 2001 – 2003 well pumping reports. This will involve staff from both organizations. We have had a good working relationship and I am sure we can move forward in a cooperative way.

- Step 1 – Ensure the correct Well ID is assigned to each registered well in the URNRD tables.
- Step 2 – Assign accurate well coordinates to aid in the identification of individual and manifold wells. Assign accurate meter location coordinates to aid in linking meters to wells and provide for navigation to meter locations for compliance checks.
- Step 3 – Identify all wells that need a change in their status or other registration information.

Step 4 – Notify the groundwater well registration staff of the required changes, so they can proceed with mailing the proper paperwork.

Step 5 – Assign a unique meter identifier to each meter and enter it in each well record. This can be done with meter serial numbers or an arbitrary meter identification number. DNR uses an integer “Meter ID” value to identify meters. Manifold systems can be identified within the database because the Meter ID will be associated with multiple wells. For the purpose of annual data exchange, we could transfer data for each meter and the Meter ID association would be used to check for complete reporting.

Step 6 – Define a way to get meter-by-meter data transferred between URNRD and DNR

Step 7 – Provide additional information in water reporting tables that list the volume of water for each record in addition to the inches applied.

Step 8 – Identify existing processes and/or adopt new procedures and schedules for keeping well registration information accurate.

I realize that there are usually many possible solutions to a particular problem. I would be open to any solution that resulted in achieving the goals bulleted above. Again, let me emphasize that we appreciate the assistance we have received from your staff and look forward to working with you in the future.

Sincerely,

Mike Thompson
Natural Resources Specialist