Need A Helper Well?

Lower Niobrara Natural Resources District

The Lower Niobrara NRD has updated its Rules and Regulations, including the criteria required to construct a supplemental irrigation water well. The process requires the proposed well to meet a series of guidelines before an application can be approved.

Application for a Permit

- An application for a permit to construct a supplemental water well must be submitted with a non-refundable fee of $100.00. This application process may take up to one year to complete.
- Each application must be accompanied with documentation that a test hole(s) was drilled and contains the following:
  - Geologic/lithologic log of materials encountered with depth.
  - Geographic coordinates of the test hole location.

Test hole Requirements

- Test hole must be drilled within **330 feet** of the proposed well location.
- Geologic/lithologic log must clearly detail the depth, color, thickness and size of material of the various geologic formations encountered and the measured depth to groundwater from the ground surface.

System Restrictions

- No more than 3 irrigation wells per irrigation system will be allowed.

Equipment Needed

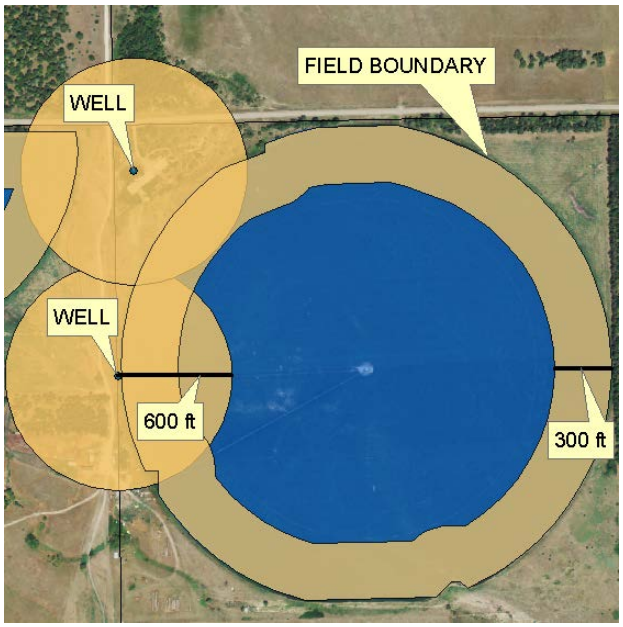
- An irrigation flowmeter is required to be installed (if not already installed) on the irrigation system.

Well Spacing

- Proposed well must be at least **600 feet** from any other registered irrigation, domestic, livestock, commercial, or industrial well under separate ownership or any not-yet constructed wells with a valid well permit. Proposed well must also be at least **3,000 feet** from public water supply well(s).

- Proposed well must be located **300 feet within** the boundary of the field it would be providing water for.

- **Area highlighted in BLUE is the acceptable area for the proposed well. Well spacing maps will be available by request from the Lower Niobrara NRD office.**



Hydrologic Engineer

- The applicant must have the site evaluated by an independent hydrologic engineer to determine the effect of a new well on the surrounding registered well(s).

Well Ranking

- Each proposed well must meet the standards set forth by the District's Well Permit Ranking System. A **minimum** of **250 points** is needed for an application to be approved. This process is used to determine the impact the proposed well would have on existing groundwater wells. The main criteria considered in the ranking system with associated maximum points values are as follows:
    - Thickness of primary aquifer formation (100 points)
    - Calculated transmissivity of the primary aquifer formation (100 points)
    - Irrigation well density (100 points)
    - Public water supply well density (50 points)
    - Domestic and livestock well density (50 points)
    - Method of applying groundwater to the land (50 points)
- These criteria are gauged by the geologic/lithologic information provided from the test hole and the District's most up to date Geographic Information System (GIS) data.

Gross System Capacity

- The district will monitor your irrigation flowmeter over the growing season and determine the average gallons per minute (GPM) and use this average to determine your net capacity.

- Example: You have a 130 acre field in region 1 and your field is loamy sand and your average GPM is 600.
    - 600 GPM / 130 acres = 4.6 GPM / acre
    - Net capacity for loamy sand is 4.8 GPM / acre. You meet the criteria for Gross System Capacity to be approved for a helper well.

Gross System Capacity, gpm/ac = system flow rate (gpm) divided by acres irrigated (example 800 gpm/130 ac = 6.2 gpm/ac)

Net capacity 9 of 10 years (gallons per minute per acre) by soil type in region 1 which includes the entire geographic area within the geographical boundaries of the District in Holt, Boyd and Knox Counties. The gpm/ac by soil type are: Silt Loam – 3.9, Sandy Clay Loam – 4.1, Silty Clay Loam –4.2, Silty Clay – 4.4, Sandy Loam – 4.5, Loamy Sand – 4.8, Fine Sand – 5.0.

Net capacity 9 of 10 years (Gallons per minute per acre) by soil type in region 2 which includes the entire geographic area within the geographical boundaries of the District in Keya Paha and Rock Counties. The gpm/ac by soil type are: Silt Loam – 4.6, Sandy Clay Loam – 4.9, Silty Clay Loam – 5.1, Silty Clay – 5.1, Sandy Loam – 5.2, Loamy Sand – 5.4, Fine Sand – 5.9.

Variance

- Any person applying to construct a well that would not meet any portion of these guidelines may apply for a variance.