

# Groundwater Quality Management Area Controls

## ● Phase II Groundwater Quality Management Areas - > 50% to 90% of the MCL (>5.0 - 9.0 ppm nitrate-nitrogen)

1. A continuation of Phase I activities will remain in effect unless modified or negated by Phase II requirements.
2. The District will require the certified operator to accomplish an annual deep soil sampling analysis (mandatory two foot sample, three foot sample encouraged, if applicable) for nitrate-nitrogen content on each field larger than **40 acres** with more than **50 lbs per acre of actual nitrogen fertilizer** applied. The sample must be collected and analyzed using UENRD approved methods. Approved sampling and analysis techniques will be included as part of the District's educational program. This analysis will give the certified operator knowledge of usable and inaccessible nitrogen (below the root zone) in the soil profile.
3. Certified operators must submit a report to the Upper Elkhorn NRD by **December 31<sup>st</sup>** following each crop year on forms provided by the District for areas larger than **40 acres** where more than **50 lbs per acre of actual nitrogen fertilizer** is applied. The report will consist of three sections and will include, but is not limited to, the following information:

### **Section I. Nutrient Management** (based on information from *previous year*)

- a) Field identification and size.
- b) Type of crop(s)
- c) Results of the water nitrate-nitrogen analysis (in parts per million) from each irrigation well must be reported (Phase I, 2).
- d) Results of the soil sampling analysis if required (average pounds of residual nitrate-nitrogen to the depth sampled).
- e) UNL nitrogen fertilizer recommendations.
- f) Nitrogen credits from water, residual soil nitrogen, and other nitrogen sources such as manure applications.
- g) The actual pounds of nitrogen fertilizer applied per acre.
- h) Actual yield.
- i) A realistic yield goal for next year's crop.

### **Section II. Pest Management** (based on information from *previous year*)

- a) Field identification and size.
- b) Type of crop(s).
- c) Names and types of pesticides applied.
- d) Types of pests intending to control.

- e) Application rates.

**Section III. Irrigation Management** (based on information from *previous year*)

- a) Field identification and size.
- b) Type of crop(s).
- c) Area irrigated.
- d) Total evapotranspiration.
- e) Amount of irrigation water applied in inches.
- f) Total precipitation.

An informational packet will be provided to each of the certified operators containing any necessary information and a list of possible information sources. Similar reports are used by the Natural Resources Conservation Service and other NRDs. This continuity allows for greater information exchange and dissemination. Many different entities will be available to certified operators should questions arise. The District reserves the right to request additional information needed to assist in the successful implementation of this groundwater management plan.

- 4. The District will encourage certified operators to incorporate credits from application of animal waste (solid or effluent) and municipality waste into the total nitrogen requirement for the specific crop where this application of waste is made. An analysis of waste slurry will be encouraged to determine nitrogen content. Operators are encouraged to apply animal and municipality waste evenly over as many acres as possible. The following rules and regulations apply to the application of animal and municipal waste, accordingly:
  - a) All required livestock waste facilities must be properly permitted by the State of Nebraska.
  - b) Nitrogen application including livestock waste (solid or effluent) should not exceed agronomic rates for a crop.
  - c) Waste application on land subject to frequent flooding (see County Soil Survey) will be discouraged.
  - d) Waste applications within 200 feet of, and draining into, adjacent water bodies will be discouraged.
  - e) Spreading of animal and municipality waste on frozen or snow covered ground will be discouraged. Animal and municipality waste should be applied to land where slopes are four percent (4%) or less or adequate erosion control practices are used.
  - f) The application of waste disposal on tilled ground with greater than ten percent (10%) slopes is discouraged unless adequate erosion control practices are present.
  - g) A nitrogen analysis of animal waste slurry will be encouraged.
- 5. Fall (September 23 to December 20) and Winter (December 21- March 1) application of all commercial nitrogen fertilizer will not be allowed before **November 1**. It will be

discouraged until after **March 1** on all soils. Exceptions will be allowed for Spring and Fall seeded crops and meadows if the actual nitrogen application rate is **less than 20 pounds per acre**.

6. The use of monitoring equipment (i.e., flow meters, rain gauges, hour meters, etc.) and distribution equipment (i.e. pressure regulators, low pressure nozzles, etc.) for efficient fertilizer and water distribution will be encouraged by the District.