**The Iowa Nitrogen Removal Program**

The Iowa Department of Natural Resources manages the NPDES surface water discharge program, state ground water discharge and effluent spray irrigation permit programs. Based on communication with the Iowa Department of Natural Resources permitting and water quality planning staff there are no municipal or publicly owned (POTW) NPDES major dischargers, (over one million gallon per day average flow) that are using a supplemental carbon source for denitrification at this time.

In May 2013, Iowa updated the “Iowa Nutrient Reduction Strategy”. This strategy will require 102 major, (over one million gallons per day average flow) municipal wastewater treatment plant dischargers and significant industrial minor dischargers to write a report describing the reasonableness of implementing nutrient removal at their facilities. This “reasonableness” is based on the cost of implementing each of three tiers of nutrient removal (10 mg/l, 6 mg/l and 3 mg/l total nitrogen and comparing that with the communities’ economics. Unless deemed economically unreasonable, all listed dischargers will be required to do some level of nutrient removal. If a permitted discharger installs nutrient reduction processes and technology-based total nitrogen limits are included in the NPDES permit, then it is the position of the Iowa Department of Natural Resources that the total nitrogen discharge limits will not be made more restrictive for a period of at least 10 years after the completion of the nutrient reduction process construction.

The effluent total nitrogen limits will be annual average mass limits and will be calculated as the sum of all measurements for a given pollutant collected during a 12-month period. The nutrient strategy will be implemented in a phased approach. The first phase is a nutrient study at the wastewater treatment facility to identify and quantify the nutrient loads coming into the plant and leaving the plant. After this two-year study, a report will be submitted to Iowa Department of Natural Resources indicating the results, the plan for process upgrades to achieve future nutrient reduction, how the nutrient reduction strategy will be implemented, and a construction schedule for installation of the nutrient reduction improvements. Following construction, a one-year optimization period will be provided to determine how the process works full-scale. Then technology-based effluent limits will be established based on the full-scale performance. The estimated effluent limits will be 10 mg/L total nitrogen, but the final limits could be more or less stringent depending on performance, cost, and other details specific to the discharger. The nutrient reduction strategy applies to municipal dischargers with flows greater than one million gallons per day as well as major industries and minor industries that may discharge nutrients. There is no required construction schedule; it is dependent on what the facility determines in their study period.

There are ten wastewater treatment facilities that serve meat packing, processing or rendering plants in Iowa. The wastewater treatment facilities at the meat packing plants discharge to a surface water body, stream or river, to spray crop irrigation adjacent to the wastewater treatment plants or the wastewater is pretreated and discharged into a municipal wastewater treatment plant. Until the above referenced nutrient reduction studies are completed and implemented the US EPA technology standard of 134 mg/l monthly average total nitrogen limit will remain in place. There only one facility that is using glycerin for a supplemental carbon source for denitrification at this time.