**Section 372.220 Hydrogeology and Soils**

a) General

The engineering documents shall contain information on location, geology, groundwater, soil characteristics, ground slopes, area for expansion, and any other factors that will affect the feasibility and acceptability of the proposed land application system. Data shall be obtained from available and identified sources or onsite investigations.

b) Geology

Geological conditions present at the land treatment site and their potential effects, including depth to bedrock, thickness of surficial deposits, and the presence of any special conditions must be described. The major geological factors which shall be considered are:

1) Structure, weathering and fracturing of bedrock;

2) Lithology;

3) Texture; and

4) Soil profile.

c) Groundwater

The following data and information for the proposed site shall be provided:

1) Depth to the seasonal high groundwater table and the duration of seasonal variations;

2) Identification and depth to each aquifer based on Illinois State Water Survey data or other available well drilling logs or boring records for the area;

3) Direction of groundwater movement and the location of any points of groundwater resurfacing;

4) A chemical analysis of the existing groundwater quality for those parameters set out in Section 372.500(d) which may be affected by the application of treated wastewater; and

5) An evaluation of the effects of the applied treated wastewater on groundwater movement and quality.

d) Soil Characteristics

The soil at the proposed site must be evaluated based on on-site surveys and the most up-to-date published soil survey for:

1) Types and texture classifications;

2) Mantle thickness;

3) Chemical characteristics;

4) pH;

5) Nutrient levels including nitrogen and phosphorus;

6) Cation exchange capacity;

7) Subsurface soil characteristics;

8) Soil borings to a minimum depth of 10 feet; and

9) Permeability of the most impermeable layer of the soil mantle at each soil boring location.