Water Quality Thresholds

The Virginia Department of Environmental Quality (DEQ) uses enterococcus and E. coli testing to determine whether a waterbody is safe enough to support primary contact activities such as swimming. The Virginia Department of Health continues to monitor fecal coliform when recommending shellfish eating advisories. Per VA DEQ:

- Enterococcus (Salt or Brackish Water) 35 per 100ml (Geometric Mean over 90 Days)
    - Indicator of fecal contamination If the mean is exceeded more than once over a 90-day period the waterway is considered to be impaired for recreation.
- E. Coli (Freshwater) 126 per 100ml (Geometric Mean over 90 Days)
    - Indicator of fecal contamination; If the mean is exceeded more than once over a 90-day period the waterway is considered to be impaired for recreation.
- pH 6.5-8.5
    - A basic parameter controlling water chemistry and aquatic health. Affects chemical and biological processes; organisms can only survive in specific range.

Per EPA – standards under review by VA DEQ

- Kjeldahl Nitrogen .5-20 mg/L
    - Useful to evaluate contributions of organic nitrogen from wastewater treatment plants, manure, and other potential sources.
- Total Nitrogen 2-6 mg/L
    - Excess nitrogen can be harmful to aquatic life by increasing growth of algae and aquatic vegetation and decreasing oxygen availability.
- Nitrate <10mg/L
    - Valuable for monitoring the impacts of inputs such as agricultural and urban runoff, wastewater treatment plants, leaking sewage systems, industrial point sources, and other sources.
- Phosphorus <.1mg/L
    - Essential for plant growth; necessary for metabolism and growth of aquatic organisms. Excess phosphorus can be harmful to aquatic life by increasing growth of algae and aquatic vegetation and decreasing oxygen availability.
- Turbidity <5NTU
    - An indicator of water transparency. Water may be more turbid (cloudy) if algae and aquatic plant growth increase in response to higher nutrient concentrations.
- Salinity
    - .5-30PPT Brackish
    - >30 Saltwater