



VLAP CHEMICAL PARAMETER EXPLANATIONS



pH

Definition: pH is measured on a logarithmic scale of 0 to 14. Lake pH is important to the survival and reproduction of fish and other aquatic life. A pH below 5.5 severely limits the growth and reproduction of fish.

<u>pH (units)</u>	<u>Category</u>
<5	Acidified
5.0-5.4	Critical
5.5-6.4	Endangered
6.5-8.0	Satisfactory

ACID NEUTRALIZING CAPACITY (ANC)

Definition: Buffering capacity or Acid Neutralizing Capacity (ANC) describes the ability of a solution to resist changes in pH by neutralizing the acidic input to the lake. Historically, the waters of NH have had low ANC because of the prevalence of granite bedrock. The relatively low ANC values mean that NH surface waters are vulnerable to the effects of acid precipitation.

<u>ANC (mg/l as CaCO₃)</u>	<u>Category</u>
<0	Acidified
0-2	Extremely Vulnerable
2.1-10	Moderately Vulnerable
10.1-25	Low Vulnerability
>25	Not Vulnerable

TURBIDITY

Definition: Turbidity in the water is caused by suspended matter (such as clay, silt, and algae) that cause light to be scattered and absorbed, not transmitted in straight lines through water. High turbidity readings are often found in water adjacent to construction sites. Also, improper sampling techniques (such as hitting the bottom sediments or sampling streams with little flow) may also cause high turbidity readings. The Class B standard for a water quality violation is 10 NTUs over the lake background level.

Statistical Summary of Turbidity Values for NH Lakes and Ponds:

<u>Turbidity (NTUs)</u>	<u>Category</u>
<0.1	Minimum
22.0	Maximum
1.0	Median

TOTAL PHOSPHORUS

Note: The phosphorus results during the summer are reported by the DES State Chemistry lab with the units "mg/L". To convert to "ug/L", move the decimal point over **three** places to the right.

Definition: Phosphorus is the most important water quality parameter measured in our lakes. It is the nutrient that limits algae's ability to grow and reproduce. Phosphorus sources around a lake typically include septic systems, animal waste, lawn fertilizer, erosion from roads and construction sites, and natural wetlands.

Total Phosphorus (TP) Ranges for New Hampshire Lakes and Ponds:

<u>TP (ug/L)</u>	<u>Category</u>
1-10	Low (good)
11-20	Average
21-40	High
>40	Excessive

CONDUCTIVITY

Definition: Conductivity is the numerical expression of the ability of water to carry an electrical current. It is determined by the number of ionic particles present. The soft waters of New Hampshire have traditionally had low conductivity values. High conductivity may indicate pollution from such sources as road salting, septic systems, wastewater treatment plants, or agriculture runoff.

Note: Specific categories of good and bad levels can not be constructed for conductivity, because variations in watershed geology can result in natural fluctuations in conductivity. However, values in NH lakes exceeding 100 uMhos/cm generally indicate human disturbance.

CHLORIDE

The chloride ion (Cl⁻) is found naturally in some surface ground waters and in high concentrations in seawater. Research has shown that elevated chloride levels can be toxic to freshwater aquatic life. In order to protect freshwater aquatic life in New Hampshire, the state has adopted acute and chronic chloride criteria of 860 and 230 mg/L respectively. The chloride content in New Hampshire lakes is naturally low, generally less than 2 mg/L in surface waters located in remote areas away from habitation. Higher values are generally associated with salted highways and, to a lesser extent, with septic inputs.