

Figure 8.2 Breakpoint Chlorination

There are several problems associated with breakpoint chlorination.

- It may not be economical to use breakpoint chlorination unless the ammonia nitrogen has been reduced.
- Free chlorine residuals favor the formation of trihalomethanes. Where free residuals are not permitted, the water may need to be dechlorinated using sulfur dioxide gas or sodium bisulfate. (Where small concentrations of free residuals are permitted, dechlorination may be needed only during the dry months. During winter storm months, the chlorine residuals may be adequately diluted with rain water.)

F. GREASE

Greases are organic substances including fats, vegetable and mineral oils, waxes, fatty acids from soaps, and other hydrocarbons. Grease's low solubility causes adhesion problems in pipes and tanks, reduces contact area during various filtering processes, and produces sludge which is difficult to dispose of.

G. VOLATILE ACIDS

Volatile acids (acetic, propionic, and butyric) occur in anaerobically digested sludge. These acids can be used to indicate the completion of a sludge digestion process. Acid content is given in mg/l as acetic acid.

H. SUSPENDED SOLIDS

Suspended solids, as in water supply engineering, can be categorized in several ways. Generally, suspended solids constitute only a small amount of the incoming flow, less than 1/10%. Together with *dissolved solids*, suspended solids constitute *total solids*. Figure 8.3 illustrates the relationships between the various solids categories. A further division of each category into organic and inorganic solids is possible.

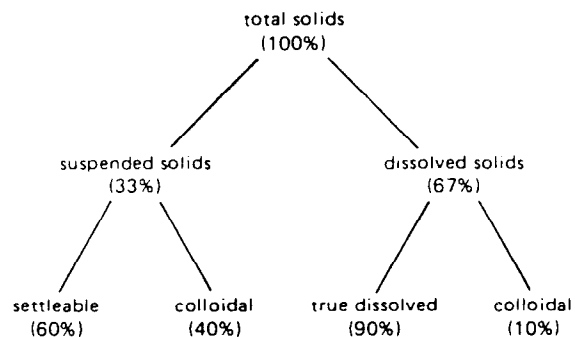


Figure 8.3 Family of Solids (Typical percentages given.)

The term *volatile solids* can be used as a measure of organic pollutants capable of affecting the oxygen content of the flow. Volatile solids, as in water supply testing, are measured by igniting filtered solids, and measuring the decrease in mass.