

iSOC[®] Recommended Testing Parameters for Chlorinated Solvent Sites

Field Parameters:

Dissolved oxygen (DO): Identifies aerobic and anaerobic regions of contaminated site and the chemical, physical and biochemical activities occurring.

pH: Identifies the acidity or alkalinity of water.

Temperature: Optimal soil and water temperatures are 10° to 40° C (50° F to 104° F).

Conductivity: Conductivity is a good measure of the total amount of salts in solution (e.g., calcium, magnesium, sodium, potassium, chloride, and others).

Turbidity: Turbidity is a measure of the cloudiness or opaqueness of the water and is measured in nephelometric turbidity units (ntu). The turbidity is influenced by the amount and nature of suspended organic and inorganic material in water.

Redox Potential (ORP):

To determine if aerobic (more positive oxidizing conditions) or anaerobic (more negative reducing conditions) are present

Laboratory Analyses:

VOCs: To determine the baseline level of contamination and relative concentrations of contaminants

Dissolved gasses (methane, ethane, ethene, CO₂): Degradation byproducts and indicator compounds

Inorganics (chloride, nitrate, nitrite, sulfate, sulfide, dissolved iron and manganese): Degradation byproducts and electron acceptors

Total Dissolved Solids (TDS): Total dissolved solids (TDS) comprise inorganic salts (principally calcium, magnesium, potassium, sodium, bicarbonates, chlorides and sulfates) and some small amounts of organic matter that are dissolved in water.

Total Inorganic Carbon (TIC): TIC is the best overall indicator of aerobic biological activity (by measuring the generation of CO₂).

Total Organic Carbon (TOC): TOC is a measure of the total amount of organic material in a water sample.

Biological Oxygen Demand (BOD): BOD is the biochemical oxygen demand of the water and it is related to the concentration of the bacterial facilitated decomposable organic material in the water.

Chemical Oxygen Demand: COD is used as a measure of the oxygen equivalent of the organic matter content that is susceptible to oxidation by strong chemical oxidant. A comparison of biological to chemical oxygen demand can provide insight into the concentration of reduced inorganic metal inorganic, such as ferrous iron, sulfide, and manganese.

Heterotrophic Plate Count: Heterotrophic plate count is a procedure for estimating the number of live heterotrophic bacteria in the water. The result is calculated in Colony Forming Units.