Subsurface Gas Analysis for Predicting Fuel-oil Pollution

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Identification of contaminated sites is the first important step in subsurface remediation. However, reliable methods for the identification and remediation of fuel oil contaminated sites are still lacking. We presume that the range of contamination by fuel oil in actual sites can be predicted by subsoil analysis obtained from boring. The real extent of contamination and type of contaminants can be known in boring technique although the boring and analysis cost is expensive. Since specific points in a contaminated site are examined in boring technique, actual contamination scenario may not be obtained in some cases due to soil heterogeneity.

Concentrations of hydrocarbon components in soil gas are measured with portable measuring devices, which provides contamination scenario. Nevertheless, the prediction of actual contamination area by this method may not be realistic to some extent.

With these conditions, the method was examined in a real pollution site. The pollution range of the whole site could be known by analyzing carbon dioxide concentration in subsurface gas.

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