Factors Affecting Trichloroethylene (TCE) Recovery from SEAMIST Pads

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Contamination of the vadose zone by volatile organic compounds (VOC) is a problem at
the Lawrence Livermore National Laboratory (LLNL). As part of an ongoing monitoring
program, VOCs in both soil-air and soil-water are monitored to observe migration
patterns and to assess the effects of remediation efforts. Both SEAMIST gas and liquid
sampling systems have been purchased w be used in this effort.

SEAMIST is a flexible removable, PVC-coated nylon membrane tube that is used to seal
the sides of a borehole and to which sampling devices or other types of instrumentation
may be attached. Two basic types of sampling devices available are the gas-port units
and the absorbent-pad units. This paper will describe our efforts to determine the
recovery rates of TCE from SEAMIST pads over different ranges of sample volume,
sample concentration and duration of pad exposure to air.

Results of this study suggest that recovery of TCE from SEAMIST pads is affected by
neither sample concentration nor sample volume. A 30% loss of TCE from the pads is
experienced when these pads are transferred to the soil-analysis vials used in analysis of
VOCs. This rate of loss did not seem to be affected by exposure to air for periods
between 0 and 128 seconds. The conclusion drawn from these studies is that reasonable
good estimates of TCE concentrations in soil pore-water may be obtained using the
SEAMIST system providing that adequate control procedures are used.

SVOA

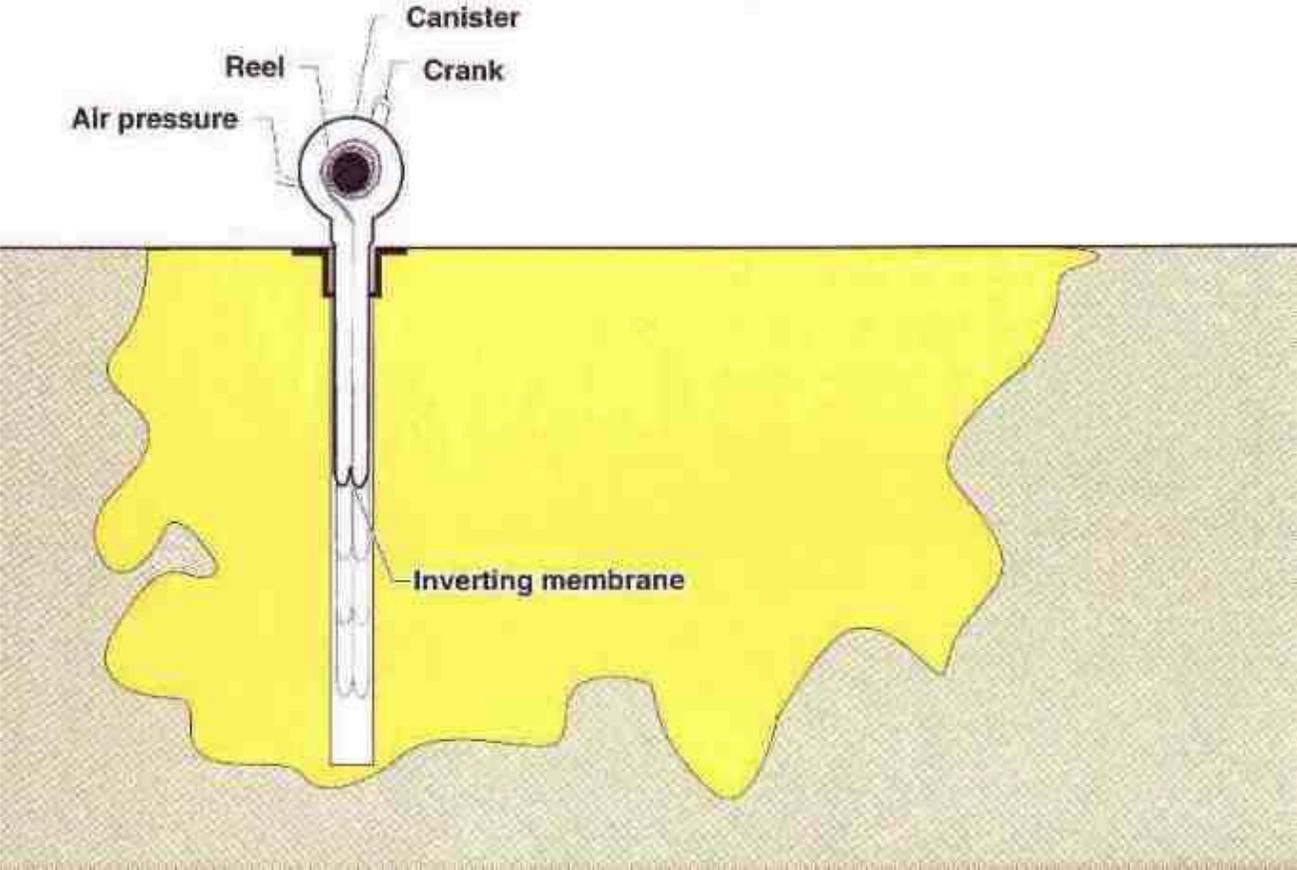**SEAMIST pads are placed in SVOAs immediately after exposure to air**

SEAMIST Emplacement System

Pad on the SEAMIST