



## Naval Industrial Reserve Ordnance Plant and Naval Air Station Nylon screen diffusion sampler (NSDS)

### Summary

<b>Media:</b>	Groundwater
<b>Study Type:</b>	Side-by-side study
<b>Technology:</b>	Equilibration
<b>Peer Reviewed:</b>	No
<b>Publication Date:</b>	2002

### Study Description

- Field tests were conducted at the Naval Industrial Reserve Ordnance Plant (Fridley, Minnesota) and at the Naval Air Station Fort Worth Joint Reserve Base (Texas) comparing both nylon screen samplers and diffusion samplers to low-flow sampling results.
- Samples were analyzed for concentrations of arsenic, calcium, chloride, iron, manganese, sulfate, and dissolved oxygen.
- Nylon screen samplers were deployed at a total of fifteen wells (seven in Minnesota, eight in Texas).
- Samplers were also deployed in pairs along a shoreline where groundwater-surface water discharge was suspected. One sampler from each pair was collected after two days and the other after approximately one month. Groundwater well sampling locations were given approximately four weeks to equilibrate.

### Remedial Phase

Investigation

### Outcome

Data indicate nylon screen samplers can obtain concentrations of inorganic solutes in groundwater wells that closely correspond to concentrations obtained by low-flow sampling. Dissolved oxygen concentrations from nylon screen samplers were also comparable to low flow. Iron results showed agreement in some wells and disagreement in others, possibly due to the influence of rainwater. Nylon screen samplers buried in the shore near a suspected discharge zone helped to identify the specific discharge zone.

### Case Study Source

D.A. Vroblesky; M.D. Petkewich; and T.R. Campbell. 2002. Field Tests of Diffusion Samplers for Inorganic Constituents in Wells and at a Ground-Water Discharge Zone. USGS Water-Resources Investigations Report 02-4031.  
<https://pubs.usgs.gov/wri/wri024031/pdf/wrir02-4031.pdf>