

## A.1 Technology Name

### Peepers (High Resolution Passive Profiler)

#### A.1.1 Source

Schneider, H.A.; W.A. Jackson; P.B. Hatzinger; and C.E. Schaefer. High-Resolution Characterization of a Chlorinated Solvent Impacted Aquifer Using a Passive Profiler. Groundwater Monitoring & Remediation. 2020; 40(4): 27-43.

#### A.1.2 Summary

<b>Media:</b>	Shallow saturated soil porewater (groundwater)
<b>Study Type:</b>	Side-by-Side
<b>Technology:</b>	Peeper – High Resolution Passive Profiler (HRPP)
<b>Peer Reviewed:</b>	Yes
<b>Publication Date:</b>	September 2020

#### A.1.3 Site Description

- Results are provided for a side-by-side comparison of HRPPs with a variety of traditional groundwater monitoring technologies (soil cores, standard monitoring well, multi-level monitoring well, membrane interface probe (MIP), hydraulic profiling tool (HPT), and Bio-Trap® samplers) for equilibration of volatile organic compounds (VOCs) in shallow groundwater at a former Naval Air Station in Alameda, California.
- Seven total HRPPs were deployed at 3 locations up to 9 meters below ground surface (m bgs) in heterogeneous sand and silty/clayey sands in a trichloroethene (TCE) dense non-aqueous phase liquid (DNAPL) source zone with water table at ~1.5 m bgs.
- Analyzed HRPP data sets included concentrations of VOCs and geochemical indicators, microbial community composition, compound specific isotope analysis, and multi-directional interstitial porewater velocity.

#### A.1.4 Remedial Phase

Not Applicable. Study was performed to demonstrate HRPP performance relative to other monitoring methodologies, not to assess remediation.

#### A.1.5 Outcome

The study concluded that “Potential limitations of the HRPP include relatively shallow deployment depth (9 meters below ground surface) and necessity for geologic conditions to be amenable to direct-push (Geoprobe) insertion, relatively long deployment time (~3 weeks), and costs associated with Geoprobe rig mobilization for deployment and retrieval. However, the simplicity of HRPP deployment, the variety of parameters that can be simultaneously delineated, and the high-resolution data produced gives the tool an advantage over existing aquifer characterization methods – enabling higher fidelity site models and presenting opportunity for better understanding of CVOC fate and transport in groundwater.”