# gPRO® Technology

## What is gPRO®?

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The groundwater Pressurized Remediation Optimizer (gPRO) is a gas delivery technology capable of delivering high amounts of nascent gas into liquids. The proprietary structured polymer used in gPRO modules contains hydrophobic microporous hollow fiber. These fibers provide enormous amounts of surface area for the mass transfer of gas into groundwater. There are two kinds of gPRO products the gPRO High Pressure (HP) and the gPRO Low Pressure (LP), more detailed descriptions of the gPRO HP and gPRO LP are outlined in the 'gPRO Technology Description' article.

### How does gPRO work?

Gas is infused into the water in such a way that large quantities of the dissolved gas are created under pressure (without sparging), and with a very low decay rate. gPRO can work ex-situ where it can be used to infuse gas (for example oxygen) into a tank or water that has been pumped out of an aquifer and treated ex-situ and then re-injected back into the aquifer. Also, the gPRO LP system can be used in-situ, where it is placed directly into a well to treat the contaminated zone.

The use of dissolved oxygen in hydrocarbon-contaminated groundwater to enhance natural attenuation of MTBE and BTEX has been growing as a remediation technology since the mid- 1990s. Most conventional technologies, however, waste most of their oxygen because the bubbles rise to the top of the groundwater table and escape before they have a chance to dissolve or to be utilized by naturally occurring hydrocarbon degraders. The result is an inadequate biodegradation response in aquifers with high ferrous iron, moderate BOD, and/or high concentrations of hydrocarbon constituents. Since gPRO can dissolve any miscible gas into water, hydrogen can be utilized by the gPRO to treat chlorinated hydrocarbons such as PCE and TCE as well as nitrate and perchlorate remediation.

### gPRO Advantages?

- Higher dissolved gas levels at ambient pressure
- Automatic controls shut down and start up the system when necessary
- Trailer or truck mounted setup allow for easy mobility to different injection
- No gas loss or off gassing
- No risk of vapor intrusion
- No preferential pathways
- No gas entrapment leading to mounding
- gPRO HP Units can be scaled up to accommodate larger gas transfer and fluid flow rates

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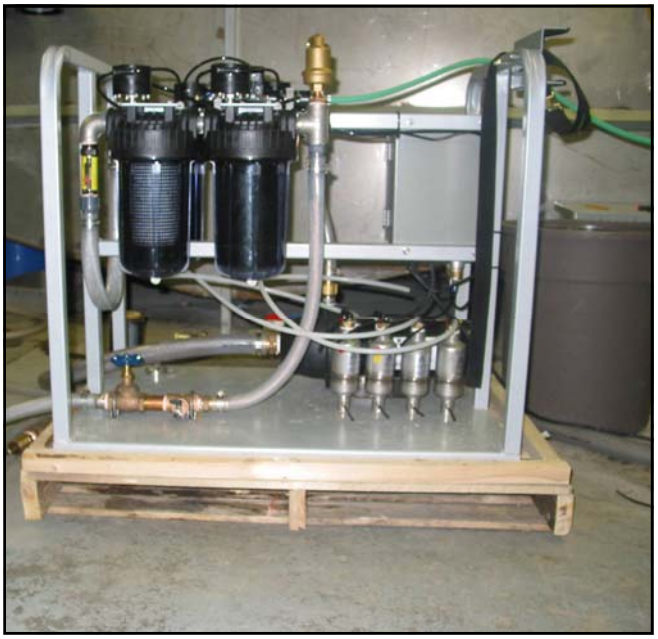

### gPRO HP4 Construction

- Heavy-duty rigid steel frame
- Powder coated paint
- L x W x H = 36” x 24” x 32”
- Weight: 110lbs (50 kg)
- Power 120V—11 A—single phase
- Water Pump 3/4 hp—0.55k

### gPRO LP Construction

- Constructed out of durable plastic
- Diameter:  2 models of gPRO LP; one will fit in a 6” well, one in a 4” well
- Height: 8.5” (21.6cm)
- Power 120V—11 A—single phase

### Who do I contact for gPRO sales and Information?

Click onto www.gproinfo.com to locate the gPRO Representative nearest you.