

gPRO® HP

Closing Sites Quickly to
Restore Nature's Beauty



inVentures
Technologies
incorporated



www.gasinfusion.com



Tired of Pump & Pump & Pump & Treat?

The groundwater Pressurized Remediation Optimizer (gPRO®) High Pressure (HP) system, based on inVentures patented Gas inFusion technology, inFuses higher stabilized concentrations of dissolved gas into water compared to any other technology. For superb bioremediation results, inFusion is accomplished without additives such as hydrogen peroxide, ozone or other agents with potentially harmful side effects. The technology acts the same as Mother Nature, transferring gases naturally by diffusion across large surface areas and incorporates the constant movement of water past the gas surface maximizing transfer.

How gPRO® HP Works

Consists of two parts: gPRO® HP production and gPRO® HP delivery

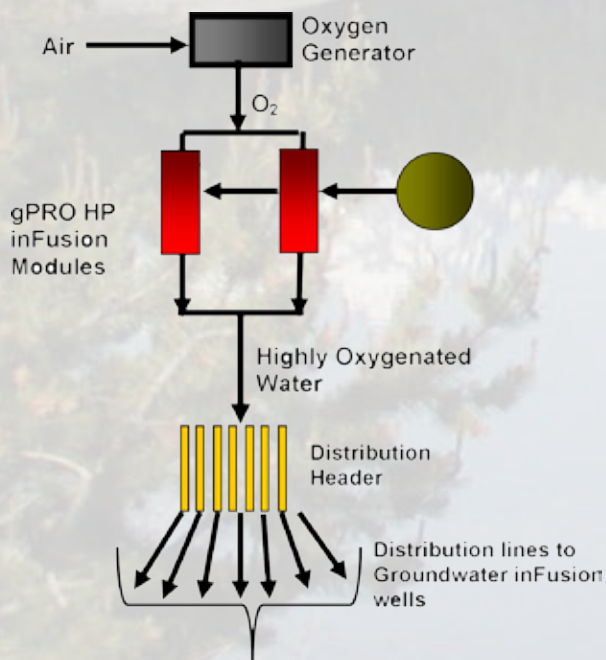
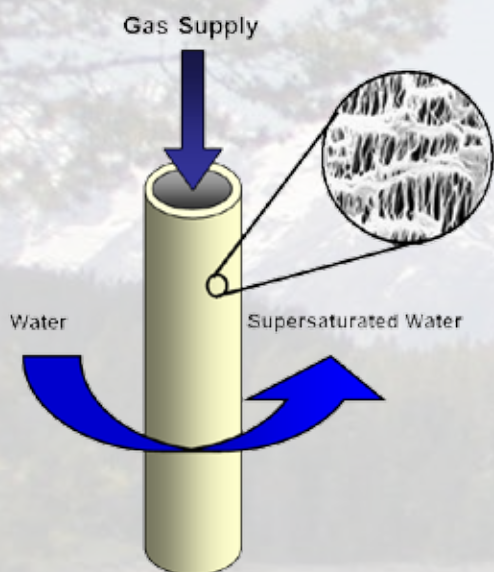
gPRO® HP Production

- Delivered gas fills the hollow fibers
- Pressurized water flows past the hollow fibers
- Mass transfer occurs transferring gas into the high pressured water
- For a gas such as oxygen 25-150 mg/l of dissolved oxygen can be produced
- Dissolved gas levels can be adjusted to suit specific conditions

gPRO® HP Delivery

- gPRO® HP distribution header and any number of lines are deployed to ground water inFusion wells
- Pressure is regulated to guarantee bubble-less injection
- gPRO® HP delivery process ensures dissolved gas does not come out of solution

The Gas inFusion Fiber



gPRO® HP will treat an Array of Contaminants

gPRO® HP is simple to use, low energy, low maintenance bioremediation system that will treat a multitude of contaminants aerobically or anaerobically (depending upon the gas infused):

Aerobic

- Hydrocarbons (Oxygen)
- MTBE (Oxygen)
- CAH (VC) (Oxygen)
- CAH (TCE, DCE) (Oxygen and Alkane Gas)
- 1,4 Dioxane (Oxygen and Alkane Gas)
- Ammonia (Oxygen)

Anaerobic

- CAH (Hydrogen)
- Nitrate (Hydrogen)
- Perchlorate (Hydrogen)
- Chrome 6 (Hydrogen or Hydrogen Sulfide)

gPRO® HP can also be utilized with carbon dioxide or ammonia for pH adjustment

gPRO® HP — Close Your Sites Quickly and Easily



gPRO® HP 4 System

gPRO® HP Features and Benefits

Big Performance in a Small Package

- Lower power consumption and installation costs
- Use of 1/2 inch or larger diameter wells
- Inject discharge water or freshwater
- Simple controls
- Infuses ANY miscible gas into water

Stimulate the Microbes

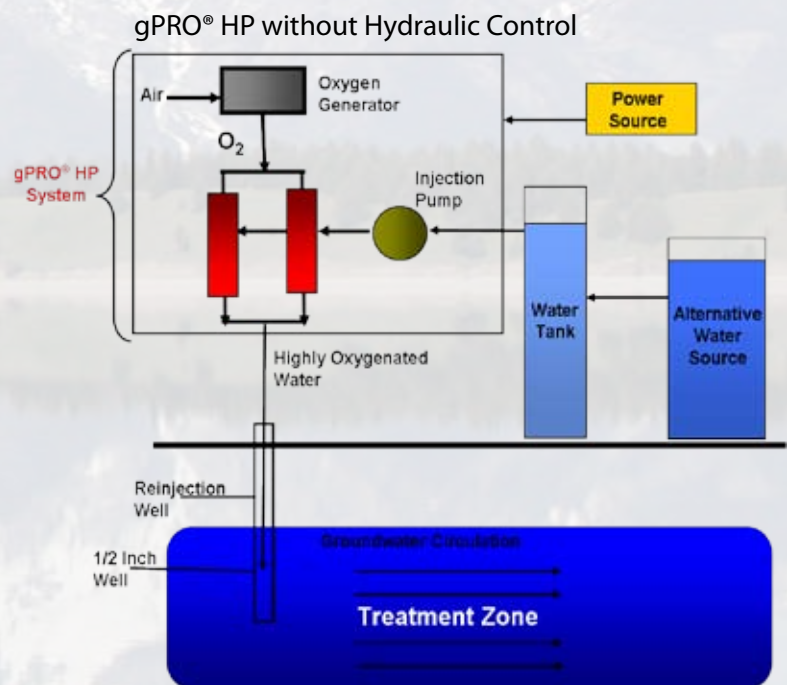
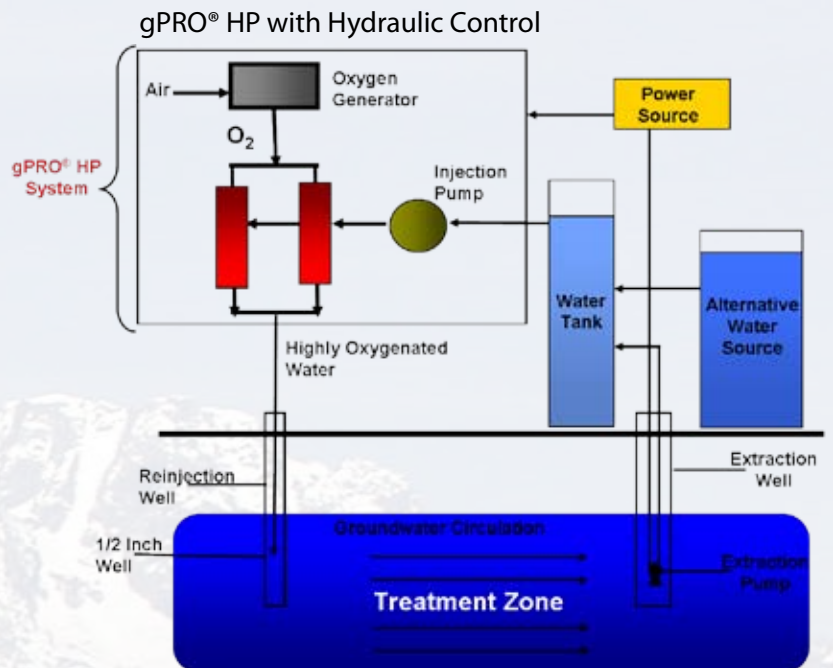
- Drastically reduces Pump and Treat times
- Higher dissolved gas levels at ambient pressure
- Increased biological degradation rates

No Hassles, No Problems, No Issues

- No gas loss or off gassing
- No risk of vapor intrusion
- No preferential pathways
- No gas entrapment leading to mounding

We say SIMPLE, we mean SIMPLE

- Automatic controls shut down and start up the system when necessary
- An oxygen generator (for oxygen applications) can be integrated, in place of oxygen cylinders
- Trailer or truck mounted setup allows for easy mobility to different injection points



Treatment Scenarios

The gPRO® HP system is primarily used as a major bioremediation tool:

- With hydraulic control
- To supplement injection of specific inoculum
- Without hydraulic control

gPRO® HP4 Unit Oxygen Transfer

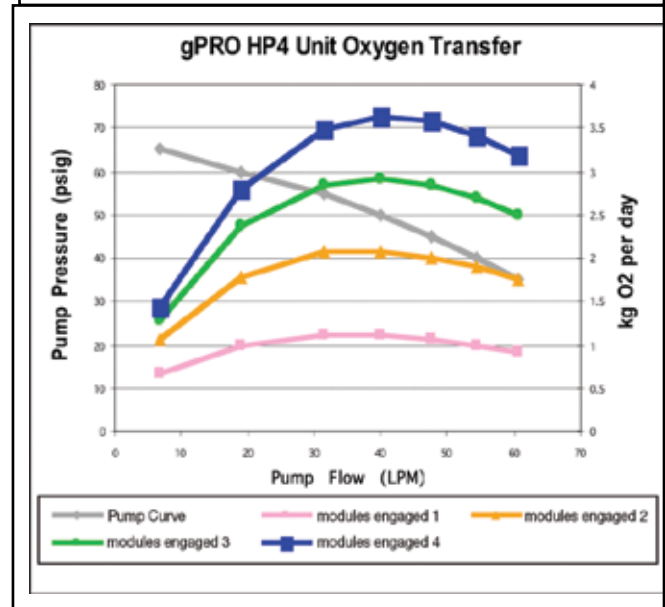
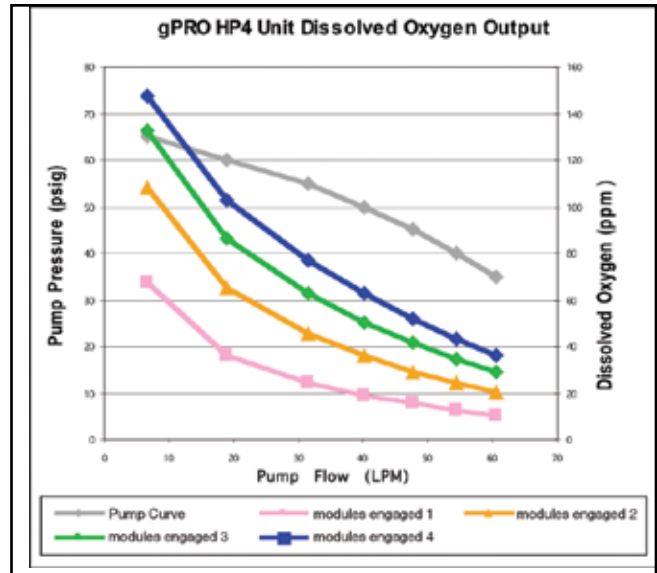
GPM	LPM	psig	1 Unit Engaged		2 Units Engaged		3 Units Engaged		4 Units Engaged	
			DO (ppm)	Kg/Day	DO (ppm)	Kg/Day	DO (ppm)	Kg/Day	DO (ppm)	Kg/Day
16	61	35	11	0.9	20	1.8	29	2.5	36	3.2
15	55	40	13	1.0	24	1.9	34	2.7	43	3.4
13	48	45	16	1.1	29	2.0	41	2.8	52	3.6
11	40	50	19	1.1	36	2.1	50	2.9	63	3.6
8	31	55	25	1.1	46	2.1	63	2.9	77	3.5
5	19	60	36	1.0	65	1.8	87	2.4	103	2.8
2	7	65	68	0.7	109	1.1	132	1.3	147	1.4

gPRO® HP4 Specifications

Heavy-duty rigid steel frame	NEMA 4 control panel
Powder coated paint	Water Inlet 1-¼ inch
Length: 36 inches (92 cm)	Water Outlet 1 inch
Width : 24 inches (60 cm)	Gas Inlet ½ inch
Height: 32 inches (82 cm)	Water Pump ¾ hp – 0.55 k
Weight 110 lb (50 kg)	Integrated oxygen generators optional
Power 120 V - 11 A – single phase	

Note:

1. The gPRO® HP groundwater system supersaturates water exceedingly quick and ultra efficiently.
2. gPRO® 8 HP and gPRO®12 HP units with much larger gas transfer and fluid flow ratings are available.
3. Custom gPRO® HP units can be designed and provided to integrate with the most complex water handling systems and remediation equipment.
4. The remediation specialist should take the aquifer capacity into consideration when choosing the size of gPRO® HP unit for the application.
5. gPRO® HP units can be easily controlled through module engagement and cycling to provide the best remediation solution for given aquifer conditions.
6. inVentures has qualified staff to advise the remediation specialist in the most effective implementation of the gPRO® HP system.



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- Proven Technology — inVentures patented gas inFusion delivery system has been successfully demonstrated at hundreds of installations worldwide
- Quality — All inVentures' products are manufactured with the highest quality components from our dedicated suppliers
- Customer Service — Our experienced, friendly and courteous sales team will rapidly assist you with any concerns

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