

# SCHNEIDER EQUIPMENT, INC. AND DRILLING CO.

COMPLETE WATER SYSTEMS  
WELL DRILLING ♦ PUMPS ♦ CONTROLS  
SALES & SERVICE

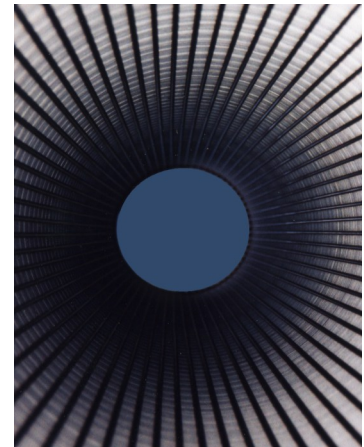
OR CCB No. 39265  
WA General Contractor  
No. SCHNEEI940R8

21881 River Road N.E., St. Paul, Oregon 97137  
Phone (503) 633-2666 ♦ Fax (503) 633-2668

## Well Rehabilitation Services Impulse Generator

Traditional well development/rehabilitation methods often utilize mechanical, hydraulic or chemical techniques attempting to maximize well production and efficiency. These technologies may include surging, swabbing, brushing, jetting and/or chemical injection. Such treatments can be environmentally challenging, costly, time consuming and do not always produce the desired results.

Relatively new **impulse generation** technology will likely produce the desired results by itself or in concert with the traditional methods previously mentioned. Impulse generation development can result in greater efficiency with cost and time savings as compared to using only traditional well rehabilitation techniques.



### What is Impulse Generation Technology? How does it work?

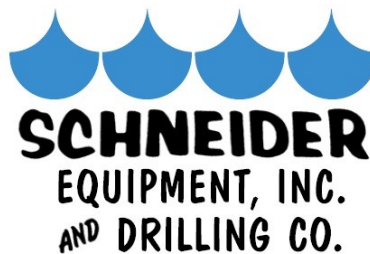
- ♦ Repeated instantaneous releases of high-pressure gas impulses inside the well
- ♦ Creates concussive shock waves
- ♦ Creates expanding, contracting and oscillating bubbles
- ♦ Intensely surges water in and out of the gravel pack, screen and/or aquifer
- ♦ Breaks up scale and encrustation
- ♦ Removes bacteria slime/biofouling
- ♦ Ensures a comprehensive cleaning process

**RESEARCH SHOWS IMPULSE GENERATOR TECHNOLOGY TO BE THE MOST EFFECTIVE TOOL WITH RESPECT TO PENETRATION DEPTH AND ENERGY MEASURED BEYOND THE WELL SCREEN** (AWWA OCT 2007 FLOW)

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### Advantages of the Impulse Generator

- ◆ Safe and Environmentally friendly
  - ◇ Green process (inert gas)
  - ◇ No chemical by-products
  - ◇ No explosives
- ◆ Highly effective for both screened and open boreholes
- ◆ Relatively short procedure
- ◆ Minimizes well downtime
- ◆ Use solely or with other development methods
- ◆ Can isolate treatment to specific areas
- ◆ Surface controlled operations
- ◆ Precisely directs energy
- ◆ Adjustable energy intensity
- ◆ Cost effective
- ◆ Permits multiple passes without tool removal
- ◆ Can pump and monitor effectiveness during operation
- ◆ Will not facilitate bacteria growth
  - ◇ No oxygenation
  - ◇ No organic material introduced
- ◆ Can be used in combination with chemicals
  - ◇ Disperses and agitates



### Impulse Generator Cleans and Develops

- ◆ Screens
- ◆ Perforations
- ◆ Filter Packs
- ◆ Open Boreholes
- ◆ Surrounding Aquifer

**SCHNEIDER EQUIPMENT & DRILLING HAS TOOLING CAPABLE OF  
DEVELOPING AND REHABILITATING WELLS UP TO 24 INCH DIAMETER.**

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