

Horizontal Pumping System for Saltwater Disposal



Trailer-mounted horizontal pumping system

The GR Energy Services Flex Flow* HPS SWD system integrates a surface horizontal pumping system with variable speed drives, surface controls and automated reporting capabilities to lower the total cost of operations of saltwater disposal. With trailer-mounted or permanent installations, the Flex Flow HPS SWD system offers significant cost and performance advantages over conventional triplex positive

displacement pumps. The system uses field-proven multistage centrifugal pumps designed for high pressure, low- to medium-flow saltwater transfer and injection. Surface facilities engineers using these systems have documented lower maintenance and repair costs, longer run life and greater operating flexibility and efficiency.

Capabilities

GR application engineers can tailor the Flex Flow HPS system to handle 10 BFPD to 100,000 BFPD with the following components:

- Centrifugal pump, consisting of stages, each with one impeller and one diffuser.
- 480-V, 3,500-rpm motor, with three horsepower options—100, 300 and 500 hp.
- Thrust chamber, which carries the thrust load developed by the multistage pump. It connects to the motor shaft on one end and the pump shaft on the other.
- VFD with HP/kVA delivery capabilities.
- Dual-pot filter system for suction.
- Charge pump for suction, which supplies power fluids from the tanks to the HPS.
- 40-ft trailer with stabilizers or a variety of permanent installation options.

	Flex Flow HPS SWD	Triplex Positive Displacement Pump
Capital investment	Low	Low
Rental fees	Lowest	Low
Total cost of operations	Lowest	Highest
Uptime	High	Low
Maintenance cost	Very low	Moderate
Repair cost	Low	Moderate
Noise	Low	High
Risk of leaks	Very low	High
Flow range	Wide	Narrow

A GR SWD Performance Advisor can create a business case comparing a Flex Flow HPS SWD system to traditional triplex positive displacement pumps or other types of pumps.

*Mark of GR Energy Services

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Benefits

- Cost-effective rental options for temporary installs to provide testing for permanent equipment or to replace equipment under repair
- Lease-to-own or staged purchase options for permanent saltwater disposal

Additional applications

- Enhanced oil recovery systems
- Gathering systems
- Production and separation systems
- Steam-generating plants/distribution systems
- Storage systems
- Crude oil and NGL boosting and transfer
- Process fluids transfer

Why use GR?

The Flex Flow HPS SWD system is part of the GR Single-Source* completion and production solution. This integrated offering establishes an unmatched chain of accountability for fit-for-purpose equipment, and reliable service and engineering support. Reserve additions and production are enhanced because perforation clusters are precisely placed based on geomechanical and producibility properties obtained from affordable openhole quality logs recorded while tripping out of hole. After a highly efficient plug-n-perf and frac operation, a hydraulic jet pump is installed downhole that is powered by a trailer-mounted horizontal pumping system at surface. This flowback-through-early-production lift system cost effectively handles a wide range of rates and eliminates the common issues of gas locking and solids handling. As production declines, GR Energy Services can install a long run life progressive cavity pump system to overcome the shortcomings of rod lift and ESPs in horizontal wells.

