

Application Spotlight



ATEX Application for Water Re-injection

Operation

Our customer drills, appraises and develops hydrocarbons found at an onshore well site in the Weald Basin in the South of England. Produced water reinjection is used when an oilfield's reservoir pressure has been depleted and is no longer sufficient to aid in the pumping process. Produced water from oil and gas fields is reinjected into the underground rock formation to stimulate hydrocarbon production in aging wells. The injected water also helps to maintain reservoir pressure and push oil toward the production well. This process is also known as water injection or water flooding.



Problem

Oil field applications require extra safety precautions due to the uncontrolled amounts of hydrocarbons within the pumped fluids. Produced water is costly to dispose of, so it is cost-effective to reinject it into designated wells and back into compatible ground formations. Our customer needed a complete pump and motor unit to meet flow, pressure and ATEX requirements.

Solution

An injection well is designed to channel water into the surrounding formation near a producing well to stimulate hydrocarbon production or for fluid disposal. First, the injection well is drilled close to the producing well. Water sample testing ensures that the on-site produced water to be injected is compatible with the formation. If necessary, the water is treated to remove fine particles that can clog the well and suppress oxygen that encourages the growth of bacteria. Next, the produced water or treated water is pumped into the formation under high pressure. The pressurized fluid exerts a sweeping force that collects existing hydrocarbon from hard-to-reach areas in the formation, driving the products toward a nearby producing well for collection.

Cat Pumps engineered, built and supplied high-pressure pumping units designed to meet the design parameters of ATEX requirements.

Cat Pumps has provided high-pressure pumps, pump systems and components to the well-drilling industry for over 30 years. Due to the field-proven longevity, reliability and superior suction capabilities, our pumps have become the industry standard for water injection applications worldwide. With field-proven application dependability, Cat Pumps provides the best value for water injection systems

Benefits

Wastewater stimulates hydrocarbon production in aging wells. Re-injection is a cost-effective way to dispose of wastewater into designated wells and back into compatible ground formations.

Application Specifications

Model No. E22493	
Cat Pumps Model	1540E.DEx
Pump Pressure	Rated to 725 psi / 50 bar
Pump Flow	19.28 gpm / 73 lpm
Fluid	Water
Temperature	94° F / 52° C
Motor	7.5 kW 1450 rpm 400/3/50 IP55 TEFC, IE3 High Efficiency
ATEX	Zone 2



World Leader in Triplex Reciprocating High-Pressure Pumps and Related Products

MARKETS	APPLICATIONS		
Industrial Cleaning	Pressure Cleaning	Water Blasting	Conveyor/Belt Cleaning
	Sewer Jetting	Paint Preparation	Tank Cleaning
	Carpet Cleaning	Screen Cleaning	Concrete/Asphalt Cleaning
	Hood Vent Cleaning	Surface Cleaning	Conveyor Belt Cleaning
Process Industries	SWRO	Biodiesel	Reverse Osmosis
	Live Wire Insulator Washing	Water / Foam Injection	Liquid CO ₂
	Homogenizing	Lumber Conditioning	Lipid Extraction
Power Generation	Gas Turbine Fogging	Condenser Tube Cleaning	Live Wire Insulation Washing
Manufacturing	Machine Tool Coolant	Central Cleaning System	Water Hydraulics
	Humidity Control	DI Water Wash	Water Deburring
	Electrical Discharge Machines	Hydrostatic Testing	Dust Suppression
Government/Military and Fire	Hydro Excavating	Military Vehicle Wash	UHP Firefighting Equip.
	Street Sweeper	Jetting	SWRO
Vehicle Wash	Car Wash	Mass Transit Wash	Auto Detailing
	Truck Wash	Train Wash	Heavy Equipment Wash
Agriculture	Agriculture Cooling	Odor Control	Green House Misting
Food Process	Sanitizing	Extrusion – Butter	Homogenization
	Poultry Evisceration	Frozen Food Cutting	Fish and Seafood Processing
Mining	Heavy Equipment Wash	Dust Suppression	Seal Gland Flushing
Misting	Temperature Control	Humidification	Fire Misting
	Visual Effects	Odor Control	Mist-Scaping
Oil and Gas	Waste Water Re-Injection	Enhanced Oil Recovery	Biodiesel
	BOP Accumulator Charging	Gas Turbine Fogging	Chemical Injection
	Triethylene Dehydration	Oil/Gas Transfer	Water Blasting

PUMPS



- Flow: 0.13 to 240 gpm (0.49 to 908 lpm)
- Pressure: 100 to 10,000 psi (7 to 689 bar)
- Materials: Brass, Nickel Aluminum Bronze, 304 and 316 Stainless Steel, Duplex Stainless Steel
- Drives: Electric, Engine, Hydraulic, Pneumatic

CUSTOM POWER UNITS



By selecting Cat Pumps for your next pumping system, the time and expense of designing, multiple source buying, fabrication and testing is eliminated.

With thousands of installations running around the world, Cat Pumps is the supplier of choice for custom pumping systems.

ACCESSORIES



Cat Pumps offers a wide range of system accessories that meet the same quality standards as its pumps. Demand genuine Cat Pumps accessories.



CAT PUMPS
 1681 – 94TH LANE N.E. MINNEAPOLIS, MN 55449-4324
 PHONE (763) 780-5440 — FAX (763) 780-2958
 info@catpumps.com | www.catpumps.com