

# filtration of produced water

## application brief

### introduction

Typical extraction of oil and/or gas also results in produced water. Produced water is naturally occurring water found with the petroleum related materials. This water is usually highly contaminated with brine (salts, hydrocarbons, heavy metals) that must be disposed of for environmental reasons. This water can also be used to enhance the production of oil from the formations that have produced it.

This water is often disposed by reinjection into the petroleum bearing formation. Prior to the reinjection this water must be filtered to remove solids, which can damage high pressure pumps, and prematurely plug valuable oil and gas bearing formations resulting in expensive oil/gas field recovery work.

Oil and gas producers have long used cartridge filtration to control solids being reinjected into porous geologic formations.

### critical to quality

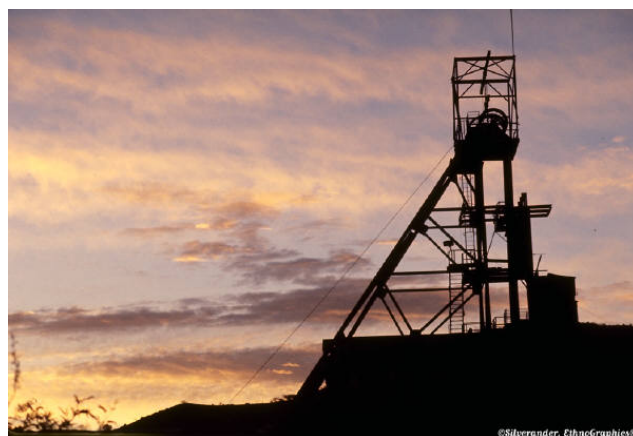
- Long Service Life
- High Physical Strength
- High efficiency
- Consistent Performance
- Consistent Availability
- Ease of Disposal
- Filter Economics

### produced water process

- Source water from well
- Holding tanks, hydro cyclones, or settling tanks
- Pre-filter
- Filters at well injection sites (Well Head)

### long service life

- ZCore\*, WellPro.Z\*, and Abs.Za\* products use Z. Plex\* technology for enhanced void volume to provide maximum dirt holding capacity in a cartridge filter.



### high physical strength

ZCore and WellPro.Z cartridge filters have been developed with polypropylene structures that resist collapse at elevated temperatures. ZCore brings additional strength for heavy loading at high-pressure differentials.

### defined efficiency

SUEZ's new ZCore depth filter uses Z. Plex technology to achieve a defined efficiency of 90% at an expanded range of micron rating.

### consistent performance

State-of-the-art cartridge forming technology with sophisticated process and quality controls ensure

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all SUEZ depth filters are consistent from lot to lot for predictable performance.

### consistent availability

SUEZ's large production capacity partnered with a wide distributor network ensures consistent cartridge filter availability.

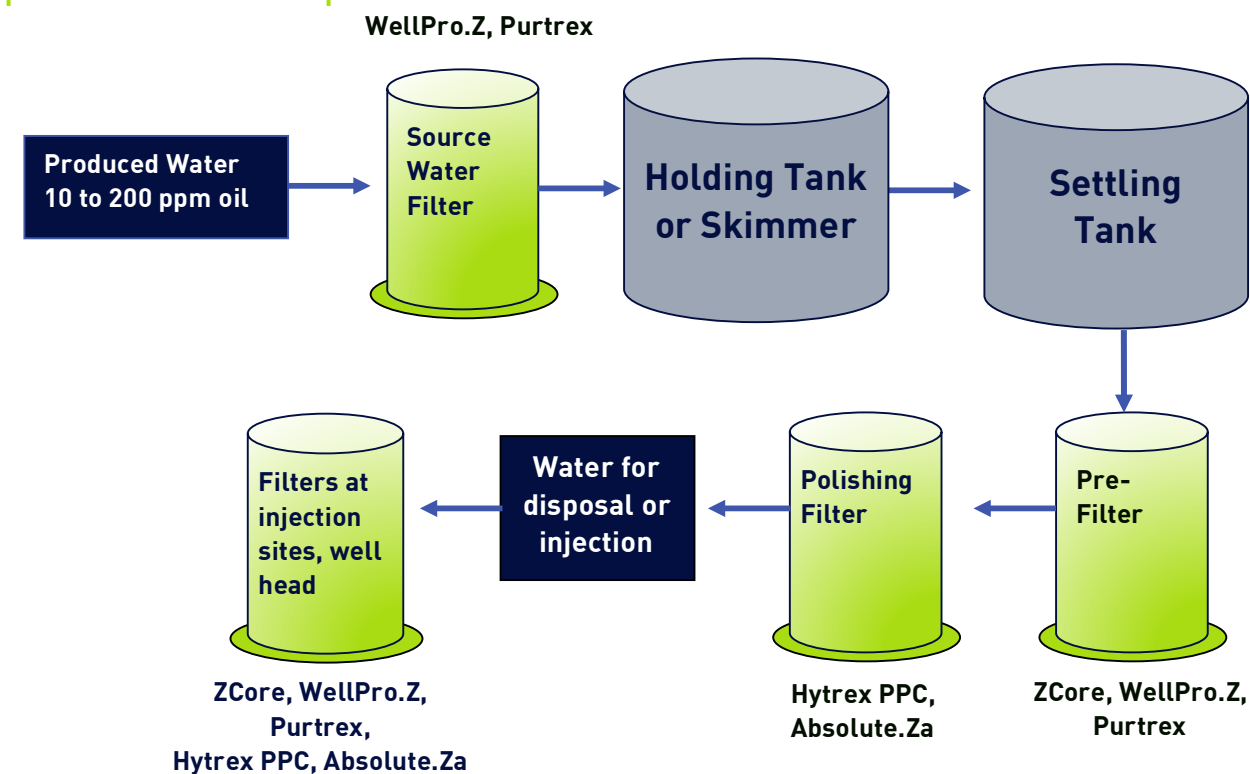
### ease of disposal

All polypropylene filters are easily incinerated, crushed, or shredded to reduce waste volume and comply with regulations.

### filtration economics

The combination of long service life, consistent performance, and availability coupled with highly competitive pricing result in maximum value from the filtration process.

### produced water filtration process



Product	Application	Features	Benefits
ZCore <b>(New)</b>	Particle filtration for harsh operating conditions	Up to 2x Dirt Holding Capacity, Cored for extra support strength, "Defined Efficiency" of 90% at various micron ratings	Up to 2x service life, strength at high temperature, heavy loading, and high pressure drop conditions. Enhanced removal efficiency for consistency
WellPro.Z	General Well Protection	High Dirt Holding Capacity, Low Initial Pressure Drop	Long service life, strength at typical field conditions
Absolute.Za	Fine Particle Filtration for sensitive formations	>99% filtration efficiency, high dirt holding capacity,	High efficiency, long service life
Purtrex	Economical Well Protection	Good Dirt Holding Capacity in an economy filter	Good filtration performance with an economical price
Hytrex PPC	Elevated Temperature Use	Support Core to provide elevated temperature strength	High Performance, Long Service life under extreme field temperature conditions
Mycelx Cartridges	Hydrocarbon Adsorbing Cartridges	Positive, High Capacity oil absorption in a cartridge configuration	Complete oil removal to protect processes and equipment