

Selecture is a **selective zonal isolation system** ideally suited to horizontal wells to maximise asset recovery and to detect and minimize water production.

A horizontal well can be compartmentalised into independent zones of 30-1000ft length with swellable packers and incorporating a Sand Control Screens and Inflow Control Device to equalise flow along the length of the reservoir. With Tracers present in each zone providing a unique signature, identification of a water producing zone can be made.

With Selecture-SSD, intervention can be made to selectively close the producing zone in a single trip, running through other zones without opening or closing other SSD's in run-in / pull-out reducing RIG time.

MAIN VARIATIONS

- ☐ Tractor Tool (**Selecture T**)
- ☐ Flush - Traditional B shifting tool (**Selecture F**)
- ☐ Traditional Type B shifting tool (**Selecture B**)

STRENGTHS

- ☐ Maximized Asset Recovery
- ☐ Minimised Water Production
- ☐ Less RIG time Intervention
- ☐ Lower CAPEX Costs

MAIN ELEMENTS AND FEATURES

DESIGN

- ☐ Sand Control Screens (Direct Wrap / Premium Mesh) & Shroud Base
 - Capture
 - Secure
 - Pre-punched Shroud (PPS)
 - Shroud Base (non-sand control)
- ☐ Ability for In-flow Control devices for flow control (ICD's, A-ICD's, Check-Valve ICD's)
- ☐ Selective Zonal Isolation
 - SSD Flow-Through Coupling Screens (selective zonal isolation)
 - SSD Screens (selective independent joint isolation)

DATA ACQUISITION

- ☐ Zonal Oil & Water detection and production quantification (Tracers)
- ☐ Gauges

INTERVENTION

- ☐ Selecture Zonal Isolation solutions
 - Selecture T
 - Selecture B
 - Selecture F

SAND CONTROL TOOLS

Selecture system can be integrated with both Premium and Wire Wrap screen systems.



Selecture system can be integrated with **Capture Direct Wrap** (Wrap on pipe) screens.

Capture screens can be customized with different rod and wrap wire configurations, depending on the required flow area. Metallurgies and slot sizes are customizable based on requirement.



Selecture system can be integrated with **Premium screens** such as **Secure** (Single layer mesh), **Assure** (2 layered sintered mesh) and **Endure** (3 or 4 layered sintered mesh).

A Drainage supporting layer is designed to provide annular distance between the base pipe and Filter Media to allow flow axially along the joint.



Precision punched screens (PPS) or shroud based screens can be integrated with selecture screens.

PPS can be customized to any slot size and width, depending on the flow area and open area requirement.

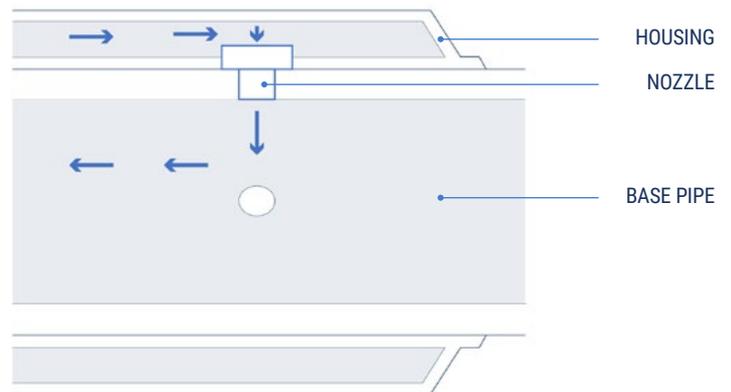
Shroud based screens has round holes with ¼" or ½" diameter, typically used in carbonate wells where sand control is not required.

IN-FLOW CONTROL DEVICES

In-flow Control Devices (ICD's) can be integrated into the ports of the Selecture SSD.

The ICD's may take the form in conventional passive ICD's, Autonomous ICD's or Check Valve ICD's. The sizing and quantity of ports can be designed to the well profile.

Additionally, the Selecture System can be designed for pre-defined nozzles or ability to insert a specific nozzle at the well site.



SWELL PACKERS

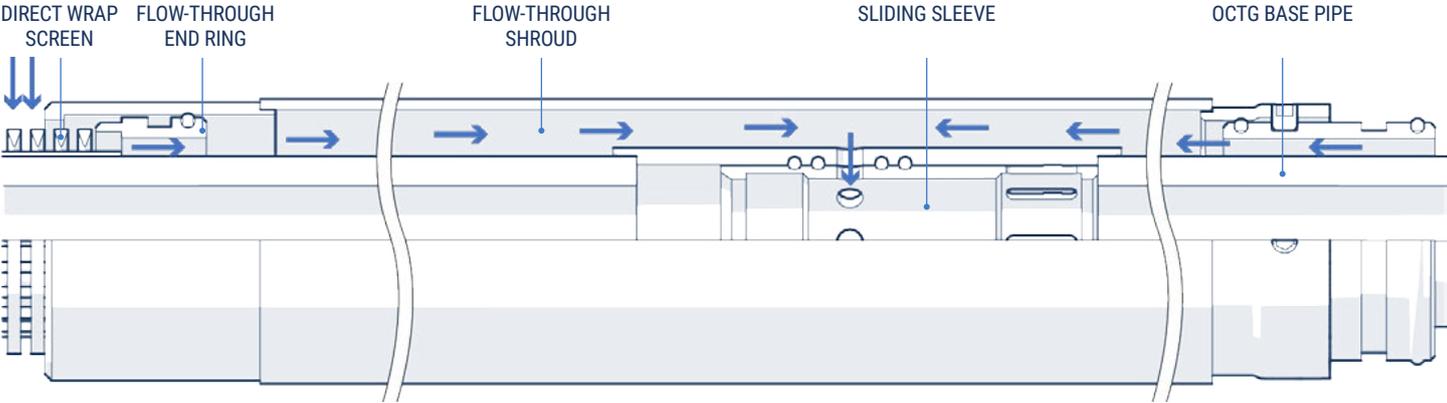
Swell Packers are integrated into the Selecture System to provide compartmentalize of the horizontal well and / or different reservoir layers.

The Swell Packer is activated by Water or Hydrocarbon contact and are specifically designed to the well conditions such as temperature etc.

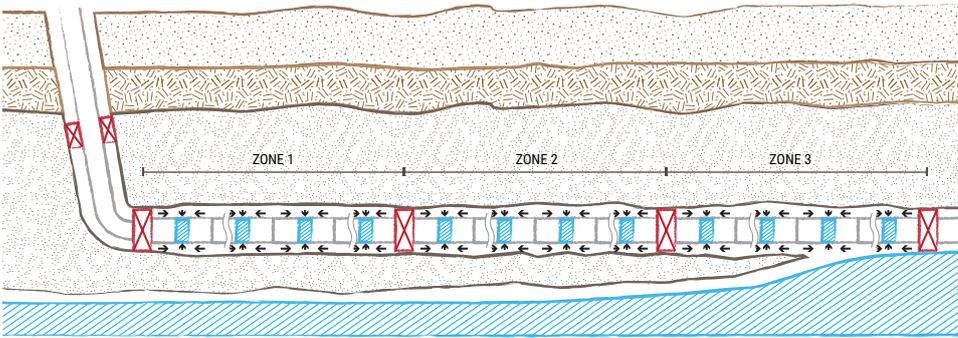
Coupled with a Tracer for data acquisition and SSD, the Swell Packer defines the section of the well which will be isolated and targeted for intervention.

SLIDING SLEEVE (SSD)

SSD's are activated by shifting tool or tractor tool, depending on the requirement and well construction. The seals in the SSD can be customized to O-rings and Vee-seals, depending on the application, pressure and temperature.



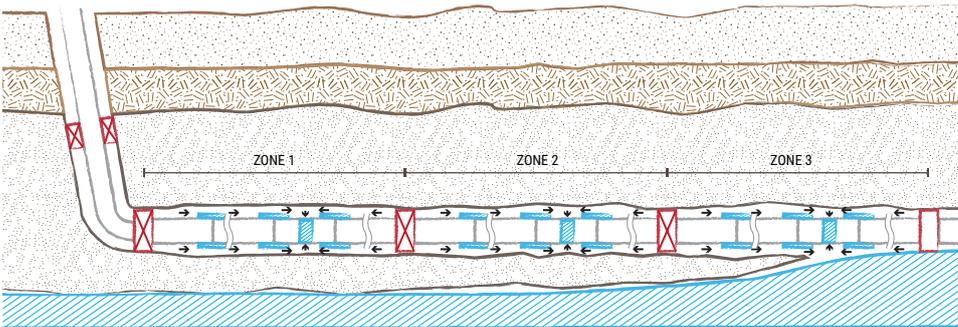
SSD SCREENS (selective independent joint isolation)



- Completion packer
- Flow-through coupling
- Swell packer
- SSD

The Selecture system may incorporate individual SSD's in each screen joint thus activating / shutting in flow for that particular joint. This may be advantageous for higher flowing wells or deviated / vertical wells with multi-pay zones.

SSD FLOW-THROUGH COUPLING SCREENS (selective zonal isolation)



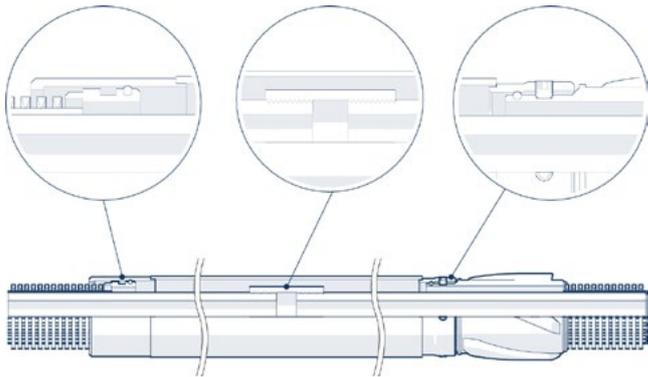
Selecture system can have one SSD per zone and screens are connected by **flow through coupling**. Alternatively, Selecture may incorporate multiple Screen joints (2-5 typically) with a single SSD thus activating / shutting in that string of joints with a single stroke of the SSD. This is typically used in Gas wells, and lower flowing wells with longer horizontal reservoir contact. This also reduces the intervention duration and complexity. Closing one SSD will restrict the flow from the entire zone, as opposed to closing multiple SSD's.

FLOW-THROUGH CONNECTION SCREENS

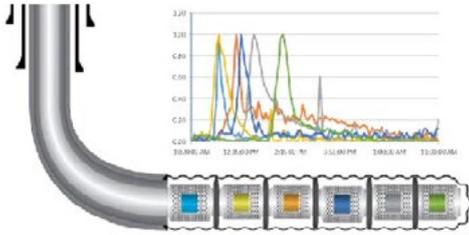
Flow through tubes connects the flow between 2 screen joints, over the coupling.

Metal-metal seal/O-rings on the ends of flow through connectors, ensures sand control integrity

Oil/Gas will flow through individual joints during the sand screen interface. It will then flow axially through the annulus created by the support ribs, slotted end rings and flow through connector.



ZONAL OIL & WATER DETECTION AND PRODUCTION QUANTIFICATION



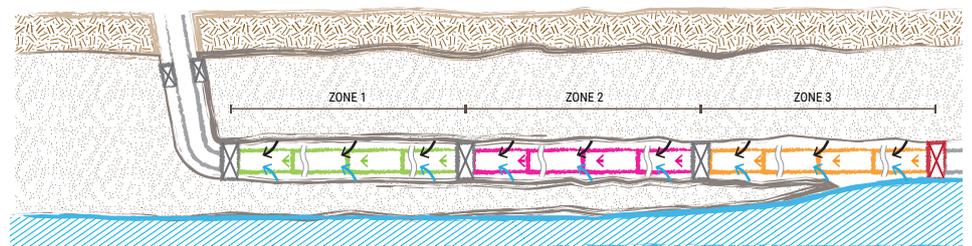
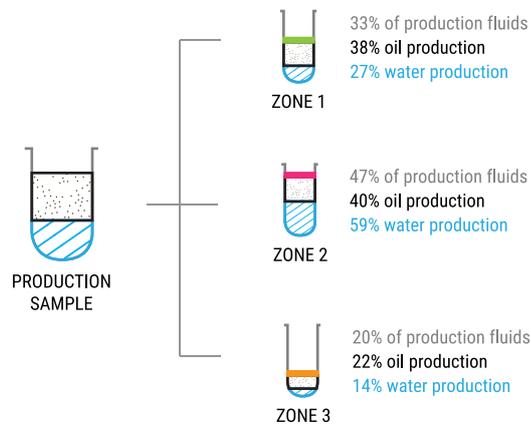
Tracers are placed in the string, with a unique signature for each Zone. Two types of Tracer are available, one which is water activated, and thus can be used with the unique signature to identify and quantify the water producing zone, and the other is an Oil Contact Tracer which is used to quantify the rate of Oil Production.

A sample of production fluids can be sent to a Laboratory for analysis or with equipment at the location itself for analysis. Each zone can be uniquely characterised with quantification of oil produced and also water produced providing critical data for decision making on selective shut-in of zones which are producing unacceptable water.

TRACER PROCESS

When integrated into sand screens, solid polymer tracers provide critical oil and water quantification per zone at a fraction of the cost of a PLT or wired system. Since the sample is taken from the production fluid, snapshots of the wells performance specific to each zone production rates, water breakthrough, effectiveness of wellbore cleanup and sleeve open or closed status can be defined.

The technology eliminates the need to use expensive well intervention tools or wired systems to discover which zones are contributing to oil flow or water flow and provides information on water entry points allowing a water cut profile along the wellbore. All of this accomplished with zero well intervention or use of wires as seen in Intelligent Completions by simply taking surface samples and analysing for tracer response.



HOW IT WORKS

Specialist oil and water tracers are manufactured into solid plastic shapes customised to fit into the drainage layer of Completion Products screens. The shapes used ensure there is no disruption of flow. Screen Joints are assembled into zonal strings which have a unique tracer signature for that given zone (separated by Swell Packer's). This will provide Oil and Water quantification for that particular zone, that will provide oil and water flow data from each zone.

A range of oil and water tracers, each with a unique chemical signature are typically used with numbers varying anywhere between 4 to 40 depending upon well length and number of reservoir zones that need to be measured.

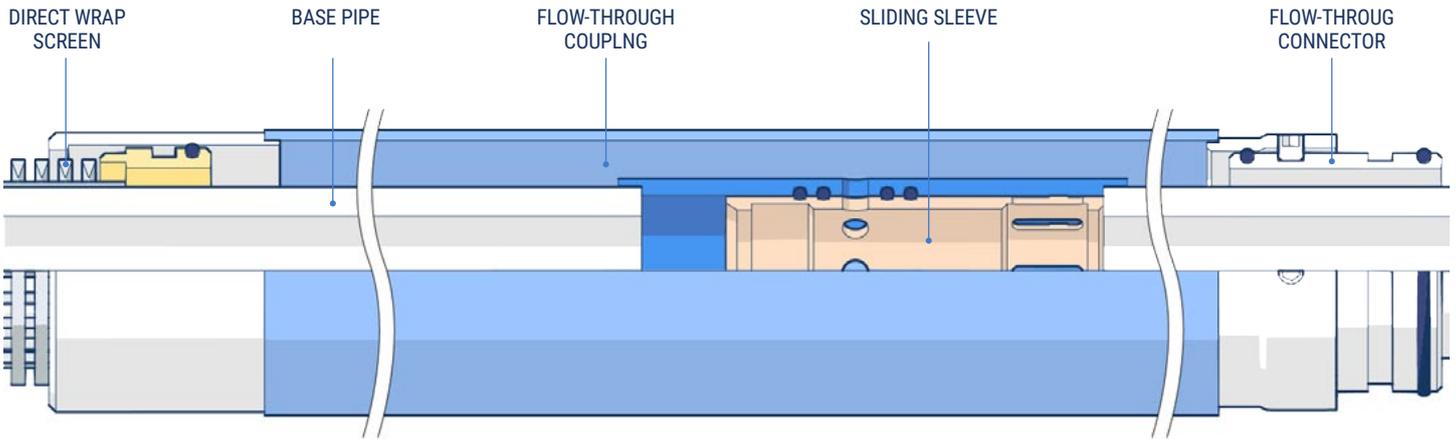
Upon contact with the targeted fluid the oil and water tracers slowly release over a number of years. A single sample of production flow can determine which zones are producing hydrocarbon or water. This data may validate the continuation of production without intervention. A more detailed sample which can be provided with a "soak" shut in of production can be used to provide more accurate information as an intervention to isolate water producing zone(s) becomes more probably.

Completion Products, working with a global specialist chemical tracer provider, offers a turn-key "tracer ready" sand screen service enabling you to gain oil and water flow insight from your wells so that critical decisions can be made and optimize well performance.

SELECTURE T

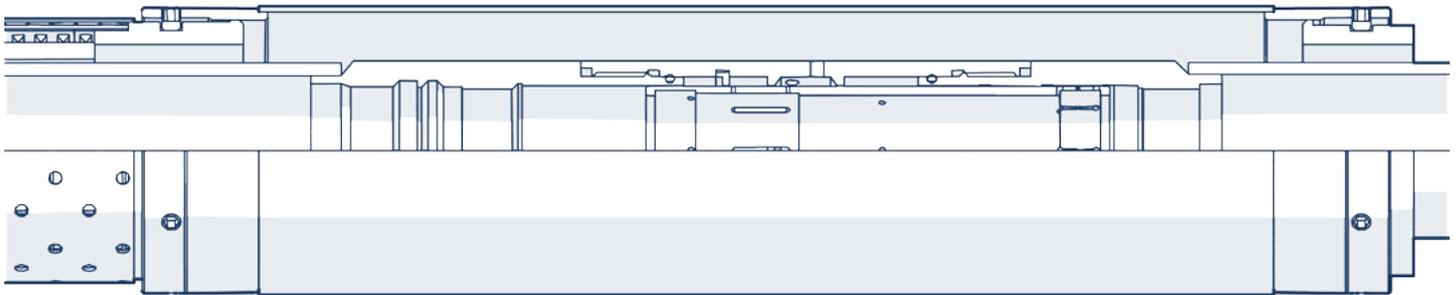
With Selecture-T, intervention can be made to selectively close the producing zone in a single trip, running through other zones without opening or closing SSD's in run-in / pull-out, reducing RIG time.

Sliding sleeve are welded to the base pipe, and their ID is bigger than the base pipe ID to avoids any intervention tools to be limited to the SSD ID. With Traditional SSD's, limitation will be SSD ID, to perform the closure of the keys in shifting tool. Sliding Sleeve shall be activated by WL/CT Shifting tool/Tractor tool, which enables to select the chosen zone/SSD, as opposed to traditional SSD's where SSD's have to be open/close multiple times while reaching desired SSD. Shifting force and displacement can be monitored on the surface.



SELECTURE B

Selecture B utilizes traditional CPX/CPXN profile in their SSD's. Shifting of sleeves shall be performed by B Shifting tool. Housing sleeves will be utilized to access the ports of the SSD, for ICD nozzles or dissolvable plugs.



SELECTURE F

Selecture F utilizes traditional CPX/CPXN profile and the OD of the SSD will be in flush with base pipe OD. Screens can be wrapped directly on the SSD with Base pipe, without use of any housing sleeves.

