

# Spectral Neutron Tool Introducing a new tool that can look past the casing

## Do you need to...?

- Find hydrocarbons hidden in complex reservoirs in mature producing fields.
- Find bypassed reservoirs in cased older wells that deserve a second look.
- Avoid unexpected water production from individual wells that threaten a costly production problem.
- Pinpoint locations of Hydrocarbons in new shallow wells (6000 feet or less).

If you do, our new Spectral Neutron Tool (SNT) logging service may help solve problems and also create new opportunities.



## What the Spectral Neutron Tool consists of

- Neutron source to induce Gamma Ray production.
- Two detectors: one for Neutron-Induced Gamma, another for Natural Gamma.
- Casing collar locator.

# Basic concepts behind the SNT

Q: Which elements stand out?

- A: Hydrogen and Chlorine are the most readily apparent elements because of their very different reactions to neutron activation.
  - Q: How can you tell where the hidden oil is located?
  - A: The presence of chlorine indicates salty reservoir brine, while high Hydrogen with low Chlorine indicate reservoirs that are hydrocarbon-saturated versus water-saturated.

### How to read a Spectral Neutron Log:

Blue hydrogen curve supplies the Hydrogen Index or Apparent Neutron Porosity Index.

Red chlorine curve is used to distinguish hydrocarbon-saturated reservoirs (Low Chlorine Index) from the saltwatersaturated reservoirs (High Chlorine Index) at a given porosity.

Yellow areas between the red and blue curves mark hydrocarbon-containing areas.

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WIRELINE SERVICES Bringing the unknown to the surface every day



Spectral Neutron log taken in a cased borehole.

### **Century Wireline Services**

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