GasSat™(3D) Model
Reservoir Evaluation

Using the Halliburton TMD3D™ Pulsed Neutron tool, the GasSat™(3D) cased hole interpretation model is designed for gas (or light hydrocarbon) saturation analysis of a single well. With proprietary technology and methodology, the model works even in low-porosity and low- or unknown-salinity environments associated with tight gas.

**Applications**
- Provides gas saturation interpretation using TMD3D data
- Cased hole pulsed neutron porosity
- Analysis based on total or effective porosity
- Pinpoints changing fluid contacts through timelapse monitoring

**Associated Answer Products and Preprocessing Software**
- Formation and Reservoir Solutions-Apps software modules;
  Pulsed Neutron VShale, Pulsed Neutron Porosity, TMD3DRC Environmental Corrections for SATG
  (Saturation Gate—a proprietary gas-detection measurement)

<table>
<thead>
<tr>
<th>Corr</th>
<th>Depth</th>
<th>Ratio</th>
<th>Sigma</th>
<th>SATG Env</th>
<th>Volumetrics</th>
<th>Saturation</th>
</tr>
</thead>
<tbody>
<tr>
<td>T - 245 FT</td>
<td>Hydrogen Yield</td>
<td>Oil Gas Ratio</td>
<td>Oil Gas CapRatio</td>
<td>SATG/Max</td>
<td>VSHALE %</td>
<td>SHOPE %</td>
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**Specifications**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
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</thead>
<tbody>
<tr>
<td>TMD3D data, total porosity or effective porosity, clay volume, and hydrocarbon density</td>
<td>Gas saturations, total or effective water volumes. Cased hole neutron pulsed porosity</td>
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</tbody>
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An interpretation example using cased hole TMD3D log data

**Track 1—Correlation and quality indicators**

**Track 2—Porosity indicators and ratio overlay indicating gas or hydrocarbon crossover**

**Track 2 to 3—Sigma indicating changes in lithology, gas in the formation, and fluids in the borehole**

**Track 4—An envelope of wet and gas with SATG (a proprietary Halliburton gas-measurement method) in between, indicating gas (or light hydrocarbon)**

**Track 5—Shale, sand, cased hole porosity, liquids and gas volumetrics**

**Track 6—Various presentations, including total and effective saturations can be selected**

For more information, contact your Halliburton representative.

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