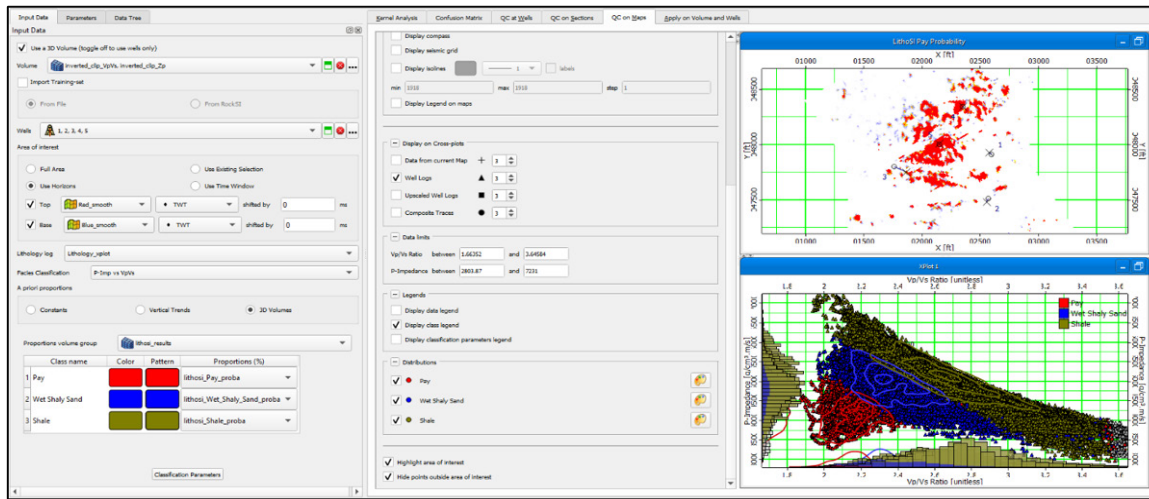




Lithologic Classification Module

LithoSI quantifies uncertainty in seismic lithology and fluid prediction. Using multiple elastic parameters from the inversion of seismic data, **LithoSI** employs a supervised Bayesian classification to deliver probability cubes of predicted lithology.

The integrated inversion and classification workflow offers assessment of lithology probabilities and understanding of lithology classes that can be easily understood by geophysicists, reservoir geologists, drilling engineers and petrophysicists.



LithoSI interface and QC graphs showing the classification and probability of pay results along a slice of interest.

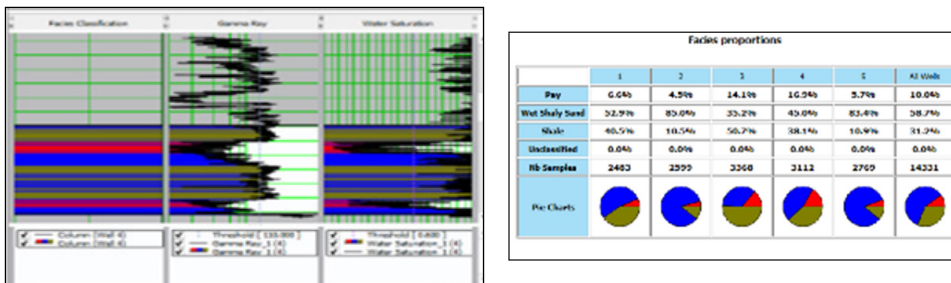
LithoSI Analysis

LithoSI enables users to design complex multi-variate probability distribution functions to ensure that lithologies are properly classified, and their probabilities accurately defined. LithoSI Analysis includes:

- Modeling of multi-variate probability density functions of arbitrary shape
- Lithology prediction using 2, 3 or 4 seismic attributes
- Classified log generation from cross-plot zones
- Kernel analysis with upscaling using well logs and composite traces

LithoLog

LithoLog is an intuitive tool, included in LithoSI, for the creation of lithology logs based upon well-log cut-offs.



Lithology log classification based upon petrophysical log cutoffs, showing log and QCs for the statistical proportions

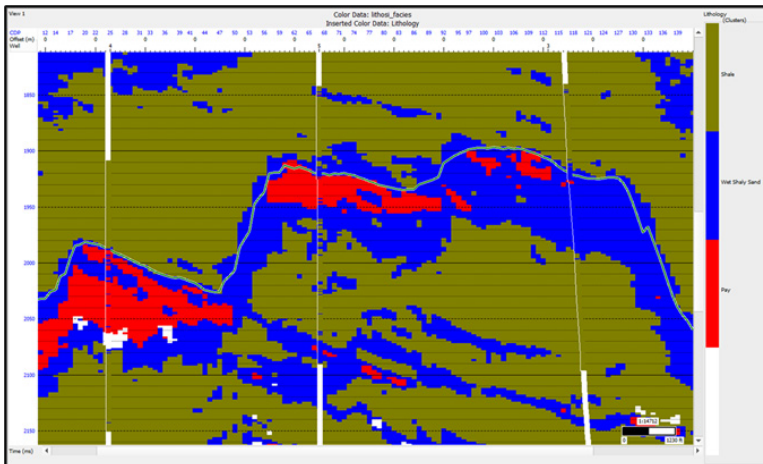
LithoSI Results

The resulting litho-probability cubes enable uncertainty assessment of predicted lithology to reduce production risks. A composite cube of the most probable facies is an additional way to view the results, and a powerful tool for seismic reservoir interpretation.

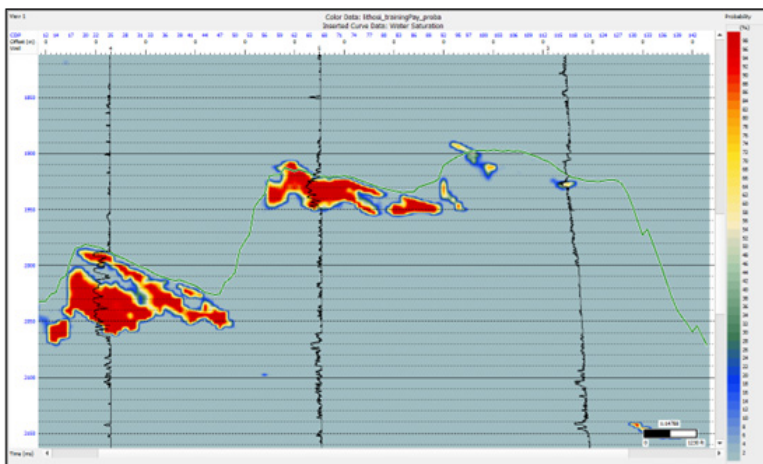
The predicted litho-probability cubes are important inputs to reservoir modeling, well planning analysis, and hydrocarbon volume calculations.

Benefits:

- Superior definition of lithology classes
- More accurate assessment of lithology probabilities
- Net-to-gross ratio maps from litho-classification



Most probable facies shown overlain by facies logs along an arbitrary line.



Probability of pay facies shown overlain by water saturation logs along an arbitrary line.