## PAYZONE INC.

**Reservoir Evaluation for the Petroleum Industry** 



## Why is PayZone Different?

Our services go well beyond conventional approaches to formation evaluation. We have designed our petrophysical and geological models to incorporate our extensive knowledge of unusual rock and reservoir types. Our clients rely upon us to provide verifiable and well-documented characterizations of rock and fluid systems. In many cases, we have not only delivered the work product, we have represented our client at or participated in equity and litigation proceedings.

A typical project for us is a problem that others could not solve. We have worked in many different reservoirs with all brands and vintages of logs. We have developed a comprehensive set of analytical tools to derive accurate formation properties from almost any log suite in fields both in North America and worldwide. Our rigorous deterministic models have extensive user controls and rule structures which allow the same central model to be applied to such diverse reservoir types as:

- California's Monterey siliceous reservoirs (all phases) and related rocks
- Unconventional shales
- Shaly, feldspathic, and freshwater sands
- Granite Wash
- Austin Chalk (and similar reservoirs)
- Reef carbonates
- Biogenic/clastic facies with unusual minerals such as metallic sulfides

Our proprietary multi-well processing capabilities, fieldwide normalization tools, and structured work approach greatly reduce the time and cost for detailed and comprehensive field studies. We organize and capture all available ground truth such as core, testing, and production data. We incorporate geological, geophysical, and engineering insights combined with reservoir performance to present comprehensive solutions to problems and documented answers to questions.

If you are building reservoir models for visualization or simulation, you need consistent, accurate reservoir properties data from the greatest number of wells possible. That can only be obtained from a comprehensive petrophysical field study grounded in all of your laboratory data. Our field study methods ensure that the parameters are calibrated to ground truth and applied uniformly throughout the project.

## The Right Tools: Payzone Petrophysical Models



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When available, we integrate image log interpretation with the petrophysical analysis to provide a better understanding of the reservoir. Some insights we have provided to clients through integrated analysis are:

• Fracture susceptibility correlated with log facies

• Identification of thin-bedded intervals to improve petrophysical modeling

• Better characterization of conglomeratic zones for more accurate reservoir properties

For many years, the petrophysical community

has attempted to develop analytical models and methods that can be executed by lessskilled staff, but which will still provide results of acceptable accuracy. Models based on neural networks, probabilistic concepts, and cluster analysis are included in many commercial systems and are offered on a service bureau basis. Unfortunately, the complexity of many rock/fluid systems lead such workflows to incorrect conclusions.

We believe that only a comprehensive deterministic petrophysical model calibrated to reliable ground truth can provide reservoir properties with a high enough degree of certainty for geological modeling, reservoir simulation, and economic decisions. Commercial software systems do not contain the resources necessary to solve the problems presented to us by our clients. Therefore we built a full-scale field study tool designed for power,

flexibility, and streamlined efficiency for very large projects. With our system, a skilled analyst can construct a field study workflow customized to solve any reservoir problem, but the system is very easy to use for additional wells. This approach combines the accuracy and precision of a deterministic petrophysical model with the accessibility of a pre-programmed expert system.



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