



Petrophysical Solutions, Inc.

Thomas A. Gray
Senior Petrophysical Engineer

Summary: More than 25 years experience in the petroleum industry as a Petrophysicist, with extensive knowledge in geology, geophysics, and reservoir engineering. Experienced in 11 countries; onshore, offshore, and deep water US and International projects. Possesses exceptional analytical and problem solving skills, ability to meet deadlines, and work multiple projects. Strengths include leadership, technical presentation, teamwork, customer focus, mentoring, and negotiating skills.

Professional Experience:

Petrophysical Solutions, Inc.

Senior Petrophysicist Consultant. Providing clients advanced petrophysical reservoir characterization on new exploration and old production fields. Roles include mentoring personal, field studies, customize and develop well evaluation programs, designed coring and core analysis plans, reservoir pressure interpretation and modeling, and equity negotiations. Evaluated low resistivity pay on a new 150 MMBO GOM deep water discovery integrating geology, geophysics, logs, core and SCAL data, pressure and fluid data for Oxy USA, increasing reserves by 15%. Mentor PSI staff and clients on advanced petrophysical integration models.

Amoco Production Company

Senior Petrophysicist – Trinidad. Managed, organized, and analyzed petrophysical evaluations for Trinidad Exploration (\$200 MM exploration budget). Lead petrophysicist working with multiple prospecting teams performing thin bed pay evaluation, field studies, customize and develop well evaluation programs, designed coring and core analysis plans, QC well logs, reservoir pressure interpretation and modeling, synthetic log modeling, reserves audits, post appraisals, new technology seminars, log software training, by passed pay evaluation, and cased hole interpretation. Designed, managed, and implemented real time evaluation programs; from an offshore international location to Houston, Texas. Creating greater led time for interpretation, decision-making, and safety concerns, reducing project cost \$750,000. Developed and mentored a thin bed evaluation program which calibrated core data to logs for prospect reservoir properties and reserves, increasing booked reserves by 15%. Designed, managed, and analyzed formation evaluation program for Trinidad's first \$40MM deep-water project. Implementing the use of LWD, wireline logs, and mudlog data reducing well operations time and resulting in a project cost savings of \$2.5 MM. Worked in a multi-discipline team, developing prospects, drilling opportunities, and booking reserves. Results discovered 5.5 TCF gas and 200 MMB oil in last two years. Received Diversity award and 5 R&R awards for leadership, technical and business innovation, and business results.

Senior Petrophysicist – Colombia. Reservoir study of a tight gas high-pressure fractured sandstone reservoir, Opon Field Colombia (Opon Project \$300 MM budget). Investigate, evaluate, document, and recommend Opon field reserves, production risk, and long term production performance. Project required a petrophysical integration of rocks, pores, and fluid. Apply geologic, geophysical, petrophysical, and reservoir engineering principles. Work in a multi-discipline team performing formation evaluations, field studies, develop well evaluations, designed coring and core analysis plans, reservoir pressure interpretation and modeling. Completed Amoco's Petrophysics program, project "Petrophysical Characterization of the La Paz Formation - Opon Field, Colombia". This is an extensive one year training program held at Amoco's Research center, concentrating on integrating geology, geophysics, petrophysics, and reservoir modeling. The Opon reservoir study results showed a steep fracture production

decline, when field was brought online well performance matched modeled result. Demonstrated leadership, technical and business excellence for project result. After production wells declined, a technology group evaluated project failures. Conclusion reservoir report outlined project risk, business decisions should have followed recommendations. Performed petrophysical analysis for exploration and exploitation plays in the middle Magdalena Basin that identified prospective areas for quality reservoirs and by passed pay.

Senior Petrophysicist - Houston Formation Evaluation Department. Managed, organized, and analyzed petrophysical evaluations for subsalt, deep water Gulf of Mexico, onshore US, New Zealand, Australia, Egypt, Russia, Ireland, Malta, Venezuela, and Norway (WEBG \$300MM budget per year). Petrophysicist roles are formation evaluation, thin bed and tight fractured gas sand evaluations, field studies, develop well evaluations programs, synthetic log modeling, designed coring and core analysis plans, and QC well logs, pressure interpretation, dipmeter and FMI fracture interpretation, by passed pay evaluation, and cased hole interpretation. Designed, managed, and analyzed GOM deep-water petrophysics projects, setup real time communication system saving \$500,000 per well. Enhanced production in Wyoming tight gas field by drilling a horizontal well, develop and analyze horizontal logs for reservoir properties and fracture system. Horizontal well production performance increase 10 times from vertical well, IP: 4MMCFGD and 400 BOPD. Annually presented at Amoco's FERC conference on interpretation techniques and field study results. Processed and interpreted carbonate & clastic FMI fracture systems and dipmeter data, saving \$60,000 per well.

Staff Petrophysicist - Denver Region. Managed, organized, and analyzed petrophysical evaluations for Amoco Denver Region; Mid-Continent, Oklahoma, Texas, Rockies, Western US, California, and Alaska. Petrophysicist roles are formation evaluation, teach formation evaluation seminars, field studies, develop well evaluations programs, coring plans, and QC well logs, pressure interpretation, dipmeter and FMI fracture interpretation, by passed pay evaluation, and cased hole interpretation. Directly supervised wellsite evaluation operations, saving 5-20% per invoice by negotiating discounts based on contractor performance. Conducted SCAL and fracture analysis on Arbuckle, Spiro, and Wapanucka carbonate formations in Mid-Continent region, evaluating reservoir matrix permeability from fracture system. Successfully designed an evaluation program that utilizes LWD and wireline logs to minimize wireline log operation and maximize drilling, saving \$3 MM in a \$60 MM arctic exploration project.

Schlumberger Wireline Services

General Field Engineer. Open and cased hole logging engineer. Roles included logging and interpreting well logs, problem solving electronic equipment, sales contacts, manage logging crews, and customer relations. Developed interpretation techniques for hydrocarbon identification in oolitic carbonates. Published internal Schlumberger RFT Report "Monitoring Reservoir Depletion" and being promoted to General Field Engineer.

Professional Affiliations:

Society of Professional Well Log Analyst

Technical Skills:

Software used Powerlog, Landmark, Petroworks, Geoquest, GeoFrame, Geolog, WDS, Express, Neural Networks, Gas3d, GComp, PanSys, and MS office products; PC and Unix proficient.

Education:

B.S. in Electrical Engineering, 1978. University of Iowa
A.A. Pre Engineering, 1975, Kirkwood Community College