

Carlos Buenrostro

PETROPHYSICIST | INTEGRATED SUBSURFACE
SPECIALIST

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SUMMARY

Experienced Petrophysicist and Integrated Subsurface Specialist with 18+ years of international experience integrating petrophysics, geology, reservoir engineering, and data analytics to solve complex subsurface challenges. Expertise spans deepwater sandstones, highly fractured carbonates, unconventional reservoirs, HPHT developments, and AI-powered subsurface analytics. Proven track record of increasing reserves, optimizing production, and deploying innovative technologies that maximize asset value.

EDUCATION

Texas A&M University

College Station, TX
Master of Engineering, Petroleum
Engineering
Jan 2022 — Dec 2026

De Montfort University

Fachhochschule Bielefeld
Leicester, UK and Bielefeld, Germany
Master of Science, Computer
Engineering
May 1998 — Dec 1999

Universidad Autónoma de Baja California

Mexicali, Baja California, Mexico
Bachelor of Science, Mechanical
Engineering
Aug 1993 — Aug 1998

COURSES:

Petroleum Economics
Unconventional Reserves Evaluation
Geomodeling & Geostatistics
Geomechanics
Petroleum Reservoir Engineering
Data Analytics & Machine Learning
Open hole logging interpretation
Cased hole logging interpretation
Petroleum Production Engineering
Hydraulic Fracturing and Sand Control
Geothermal & Geochemical Analysis
Drilling & Completion
Special Core Analysis & Acquisition

LANGUAGES: Spanish, English,
Moderate in German.

PASSPORTS: USA and Mexico

EXPERIENCE

Principal Consultant, Petroleum Engineering & Integrated Subsurface Consulting *IOPETRO, IOLITE Inc., Houston, Texas*

February 2017 – Present

- Led integrated petrophysical and operations geology evaluations of Fieldwood's Mesozoic offshore reservoirs, contributing to the appraisal of 450+ MMBOE of recoverable resources.
- Coordinated SCAL, PVT, geochemical analysis, and logging programs for GOA HPHT and deepwater fields, generating more than USD \$5 million in appraisal CAPEX/OPEX savings.
- Developed an AI-powered subsurface intelligence platform for unconventional reservoirs, integrating mineralogy and gas mudlogging datasets to over 10,000 wells across all U.S. basins.
- Delivered an integrated subsurface evaluation of Miocene unconsolidated sand reservoirs, recommending a waterflood plan capable of increasing cumulative recovery to nearly 200 MMSTB.
- Applied integrated geomodeling and geostatistical workflows to optimize secondary recovery strategies for turbiditic sandstone reservoirs with complex lithology and high asphaltene content.
- Applied advanced petrophysical evaluation studies for the Permian and Eagle Ford Basins combining geochemistry, mineralogy, mud gas, and petrophysics, optimizing TOC, brittleness, lithology, and completion quality assessment for Wolfcamp, Spraberry, and Eagle Ford plays.

Senior Manager, Petrophysics, Operations Geology & Integrated Reservoir Evaluation *Fieldwood Energy, Houston, Texas & Mexico City*

October 2018 – December 2025

- Directed petrophysical characterization of deepwater Green Canyon Miocene reservoirs, integrating rock typing, J-functions, SCAL, and saturation height to support static geomodels.
- Coordinated Operations Geology for HPHT development wells in the GOA, delivering stratigraphic correlation, geological risk assessment, casing point selection, coring programs, and real-time mud gas interpretation.
- Led the first deployment of 3D Far-Field Sonic technology in fractured GOA carbonates, integrating borehole acoustics with seismic interpretation to calibrate DFN models.
- Completed more than 50 integrated subsurface studies combining petrophysics, SCAL, PVT, DST, drilling fluids, geomechanics, and production data to support field development decisions.
- Applied pulsed neutron logging to identify bypassed hydrocarbons and waterflooded compartments, support production optimization in mature carbonate and sandstone reservoirs.
- Resolved a critical production challenge by identifying drilling mud-induced formation damage, developing a drilling fluid strategy capable of increasing field production from 6 to 60 KBOPD.
- Developed proprietary algorithms to identify oolitic reservoirs and estimate in-situ oil viscosity using integrated petrophysical and geochemical datasets.
- Managed technical scope and procurement of wireline, slickline, mudlogging, SCAL, PVT, and laboratory services, while authoring the first field development program for two HPHT GOA fields.

SOFTWARE:

Geolog • Techlog • IP • tNavigator •
Prosper • MBAL • @Risk • ArcGIS •
ComboCurve • Spotfire • KAPPA

EXPERTISE —

Formation Evaluation

Petrophysics • Operational
Petrophysics • LWD • Wireline • NMR •
Formation Testing • SCAL • PVT •
Pulsed Neutron • Image & Sonic Logs

Reservoir Characterization

Rock Typing • Saturation Height •
Static Geomodels • Reservoir
Compartmentalization • DFN • Core
Integration

Operations Geology

Stratigraphic Correlation • Lithofacies
Analysis • Geological Risk Assessment
• Logging Programs • Coring Programs
• Mud Gas Interpretation

Reservoir Engineering

Reserve Estimation • Reservoir
Simulation Support • Waterflooding •
Artificial Lift • Production Optimization •
HPHT Developments

Reservoir Experience

Deepwater • GOA • Fractured
Carbonates • Miocene Sandstones •
Turbidites • Unconventional Reservoirs
• Wolfcamp • Eagle Ford Shale • Bone
Spring • Spraberry • Green Canyon

Senior Reservoir Analyst, Reservoir Engineering & Petrophysical Advisor

Quantum Reservoir Impact (QRI), Houston, Texas & Chengdu, China

December 2010 – February 2017

- Directed operational petrophysics and geology operations of Austin Chalk, Sub-Clarksville, Eagle Ford, and Woodbine exploration reservoirs in a Petro Investments LP-ZTC Joint Venture.
- Increased OOIP by 8% through advanced resistivity anisotropy modeling, resolving dynamic model history-matching issues and identifying bypassed hydrocarbons in thinly laminated plays.
- Pioneered the first wireline formation testing campaign using a radial probe in highly fractured carbonate reservoirs, establishing a new workflow for reservoir evaluation and field development.
- Led advanced Residual Oil Saturation (ROS) studies, benchmarking dielectric logging, Carbon-Oxygen (C/O), NMR, SCAL, and geochemical data in highly fractured reservoirs.

Petroleum Engineer, Reservoir Description, Simulation (Gas Exploration, Special Studies)

Saudi Aramco, Dhahran, Kingdom of Saudi Arabia

February 2008 – December 2010

- Co-developed the first slim LWD-NMR tool with Baker Inteq (Germany) for in-situ oil viscosity evaluation and reservoir pressure maintenance planning in the Manifa carbonate field.
- Collaborated with multidisciplinary subsurface teams to integrate petrophysics, geology, and reservoir engineering for reservoir characterization and development of largest Aramco's assets.
- Field-tested the first LWD Quadrupole Sonic tool capable of acquiring Stoneley waveforms, enabling near real-time qualitative mobility evaluation during drilling.
- Co-developed a MATLAB-based NMR interpretation algorithm to differentiate hydrocarbon viscosity from molecular weight and SARA fractions, validated through Pyrolysis lab analysis.

Petrophysicist & Field Engineer, Wireline & LWD Logging, Deepwater Operations, Geomechanics & Sand Control

Schlumberger (SLB), West Africa, Kazakhstan, & Mexico

April 2000 – February 2008

- Introduced the first LWD Formation Pressure While Drilling (FPWD) technology in Mexico.
- Led the Geomechanics discipline for SLB West Africa, integrating services while drilling.
- Led sonic and image reprocessing projects, improving reservoir characterization.
- Delivered stimulation and gravel-pack operations for deepwater unconsolidated sandstones.

SUMMARY OF EXPERIENCE

