

# CARLOS BUENROSTRO

Geoscientist, Petrophysicist, Petroleum Engineer, Field Engineer, Data Analyst

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Senior Petrophysicist with 25+ years of experience supporting deepwater offshore developments in the Gulf of America and international basins. Proven track record in reducing subsurface uncertainty through integrated petrophysical analysis, real-time logging operations, and multidisciplinary collaboration across exploration, appraisal, and development projects.

**Key Competencies:** Formation Evaluation · Subsurface Characterization and Integration with Drilling and Completion Operations · Petrophysical Modeling · Resistivity Modeling · NMR Processing and Interpretation · Imaging Data Processing and Interpretation · Volumetrics & Fluid Contacts · Special Core Analysis-to-Log Integration · LWD & Wireline Interpretation and Field Operations · Pore Pressure Prediction · Geomechanics · Mudlogging Operations · XRF, Gas Chromatography and XRD Integration · Geological Correlations · Petroleum Economics · Integration and Interpretation of Wireline Formation Testers · Computational Fluid Dynamics · Nodal Analysis · Machine Learning · Python Programming · Technical Leadership · Production Logging Interpretation · Well Integrity Logging Evaluation · Well Stimulation and Sand Control · Reservoir Engineering.

## EDUCATION

### Graduate and Post Graduate Studies



Texas A&M University, College Station, Texas  
 Master of Engineering, Petroleum Engineering,  
 January 2023 – May 2026 | GPA 3.9/4.0



De Monfort University, UK, Germany  
 Master of Science in Computer Aided Engineering,  
 September 1998 – December 1999 |GPA 3.56/4.0



Universidad Autónoma de Baja California  
 Bachelor of Science, Mechanical Engineering,  
 August 1993 – August 1998 | GPA 3.31/4.0

### Technical Courses and Certifications

March 2024. Certification, Tropical Helicopter Underwater Escape Training (T-HUET). Ciudad del Carmen, Campeche, Mexico.

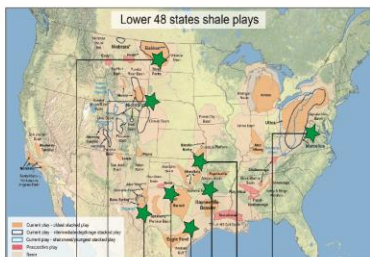
April 2023. / Sep 2006. Training School, Schlumberger. Advanced Geomechanics Course. Mexico City. / Cairo, Egypt.

Nov 2000, Sep 2001, Dec 2004. Training Schools, Schlumberger. Stimulation and Wireline Logging and Open hole Interpretation. Houston, Texas.

## INTERNATIONAL EXPERIENCE

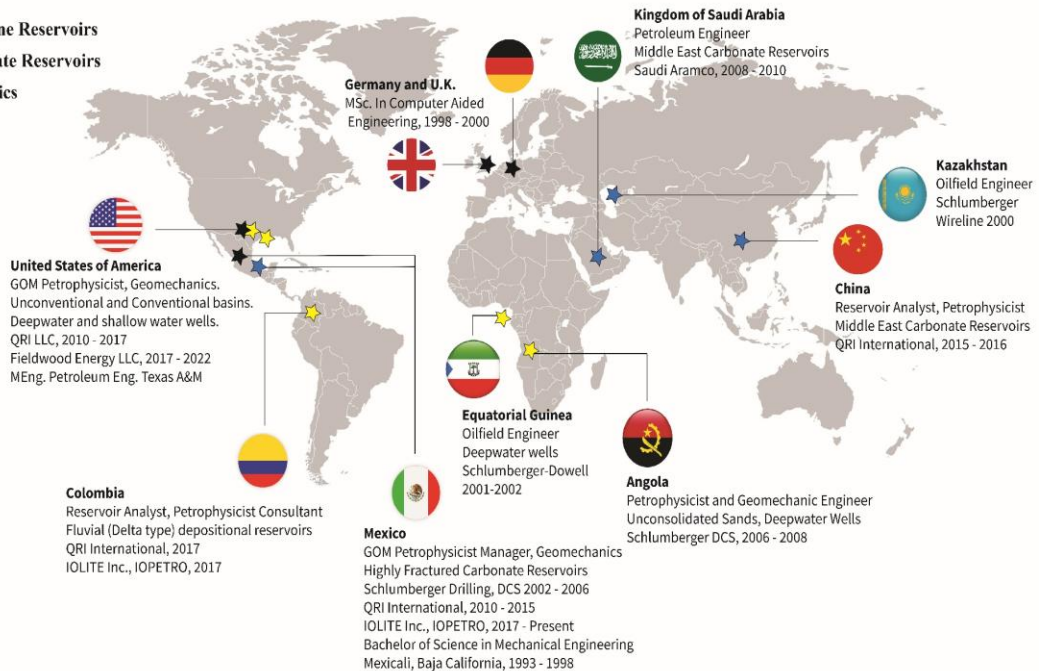
- ★ Sandstone Reservoirs
- ★ Carbonate Reservoirs
- ★ Academics

### U.S. Unconventional Plays



Bakken  
 Bone Spring  
 Woodford  
 Marcellus  
 Niobrara  
 Haynesville  
 Barnett  
 Eagle Ford

IOLITE Inc., IOPETRO, Diversified Mudlogging  
 Performing multi-basin petrophysical evaluations  
 Developing data-driven workflows to integrate mudlogging data (XRF, XRD, gas chromatography) with petrophysics.  
 Early reservoir quality assessment in data-limited environments



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## WORK EXPERIENCE

### **IOLITE Inc - IOPETRO**, Houston, Texas; May 2017 – Present

*Founder & Petrophysicist, Reservoir Engineering, Principal Consultant*

- Performing multi-basin petrophysical evaluations across unconventional, deepwater, and HPHT reservoirs, supporting reservoir characterization and benchmarking across diverse geological settings.
- Developing data-driven workflows to integrate mudlogging data (XRF, XRD, gas chromatography) with petrophysical interpretation, enhancing early reservoir quality assessment in data-limited environments.
- Supporting uncertainty reduction in reservoir evaluation through large-scale data analysis, cross-well correlations, and pattern recognition across regional datasets.

#### **Key Projects**

[1] Development and structuring of a 22,000+ well integrated database in Power BI.

[2] Leading a data-driven initiative to extract patterns from XRF and XRD datasets using statistical and machine learning techniques to predict key petrophysical properties, supporting early reservoir evaluation and uncertainty reduction.

### **Fieldwood Energy LLC**, Houston, Texas; May 2017 – Dec 2025

*Petrophysicist Advisor, Wireline Manager*

- Responsible for the Petrophysics and Wireline Business Units for deepwater and shallow-water assets.
- Advanced petrophysical evaluation of sandstone and carbonate reservoirs, including fluid contacts, saturation-height modeling, rock typing, thin-bed analysis, heavy-oil evaluation, integration of Special Core Analysis, XRF, XRD, Gas Chromatography, multi-mineral solver, and formation-tester program design supporting static and dynamic models.
- Technical leadership and coordination with LWD and Wireline logging activities, including supervision in Core acquisition, Standard Operating Procedures implementation, and data coordination with mudlogging service providers to optimize data quality, operational efficiency, and cost.

#### **Key Projects**

[1] Petrophysical evaluation of sandstone reservoirs in deepwater fields, including Gunflint, Katmai, Genovesa, Orlov and Troika.

[2] Petrophysical evaluation of sandstone reservoirs in shallow-water (shelf), including Marsh Island and Matagorda.

[3] Development of Discrete Fracture Network (DFN) models for naturally fractured carbonate reservoirs to quantify fracture geometry, connectivity, and flow behavior.

[4] Integration of 3D Far-Field Sonic data with seismic interpretation to enhance characterization of faults and fracture networks beyond the borehole.

[5] Evaluation of drilling fluid systems to minimize near-wellbore damage, reduce non-productive time (NPT), and enhance ESP performance.

[6] Support to high-cost offshore drilling decisions and workover drilling programs, including well integrity and production surveillance evaluation through design of cased hole logging programs and interpretation of PLT, SNL, MFC, MTD, HDT, USIT, CBL.

[7] Development of innovative Python and Spotfire workflows to integrate near real-time XRF data for accurate casing shoe identification in critical pressure regimes.

[8] Field development evaluations for the Ichalkil and Pokoch fields, including reserves, volumetrics, economics, and geology/petrophysics reporting with ongoing coordination and compliance with local regulatory authorities.

### **Quantum Reservoir Impact (QRI)**, Houston, Texas; Dec 2010 – May 2017

*Reservoir Analyst, Geoscientist*

- Directed logging operations in unconventional West Texas fields, ensuring data quality, operational efficiency, and alignment with subsurface and development objectives.
- Led reservoir characterization projects across Mexico, China, and U.S. onshore assets, delivering reservoir properties for static models in sandstone and carbonate reservoirs.
- Led advanced resistivity modeling initiatives to identify hidden pay and increase oil-in-place estimates by accounting for anisotropy effects in thinly laminated formations.

#### **Key Projects**

[1] Led and supervised logging and core acquisition in unconventional West Texas fields to identify pay zones and reservoir contacts.

[2] Determined geomechanical properties in compartmentalized reservoirs in the Gulf of America to support drilling and development decisions.

[3] Evaluated in-situ oil viscosity in heavy-oil (tar-type) reservoirs to identify pay intervals and assess pressure-maintenance requirements.

[4] Integrated PVT data with nodal analysis to diagnose and explain ESP performance in low-productivity wells.

[5] Increased original oil in place (OOIP) estimates by identifying thin-bed pay zones through anisotropy modeling, material balance, pressure, and production data.

[6] Performed advanced petrophysical analysis in thinly bedded reservoirs to identify hidden hydrocarbon rims, revise fluid contacts, and increase OOIP estimates.

[7] Determined reservoir properties in a highly compartmentalized, complex fluvial sandstone reservoir at the Llanito Field, Colombia.

**Saudi Aramco, Dhahran**, Kingdom of Saudi Arabia; Feb 2008 – Dec 2010

*Petroleum Engineer*

- Directed logging operations and delivered reservoir properties to support Reservoir Description and Simulation (RDS) workflows.
- Provided technical support to Special Studies teams for evaluation and development of new subsurface technologies.
- Supported Gas and Exploration units through characterization of sandstone and carbonate reservoir properties.

### Key Projects

[1] Assisted in the development of the first LWD-NMR slim tool for reservoir modeling studies.

[2] Coordinated the first LWD-Quadrupole sonic tool for seismic studies and Geomechanics.

[3] Introduced the first multi-frequency dielectric data to evaluate the Residual Oil Saturation.

[4] Developed an innovative interface to determine in-situ oil viscosity in Manifa field.

**Schlumberger Oil Field Services**, Mexico, Equatorial Guinea, Angola, Kazakhstan; Apr 2000 – Feb 2008

*General Field Engineer (GFE), Gravel Pack and Wireline, Petrophysicist, Geomechanics, LWD ID*

- Led data reprocessing and interpretation of sonic, NMR, imaging, and non-conventional logs across Mexico assets.
- Headed the Geomechanics Unit for West Africa projects supporting BP, Total, and Chevron-operated fields.
- Provided technical support to gravel-pack operations in unconsolidated sandstone reservoirs in West Africa.
- Led wireline logging operations in the Buzachi (Texaco) Camp, in Aktau, Kazakhstan.

### Key Projects

[1] Implemented innovative LWD and wireline technologies in BP deepwater wells in West Africa, earning a Silver Medal Award.

[2] Developed and executed a business strategy for deployment of Sonic Scanner technology in the West Africa market.

[3] Implemented geomechanics workflows for unconsolidated sandstone and fractured reservoirs to support drilling and completion decisions.

[4] Deployed advanced NMR services to identify heavy hydrocarbons in fractured carbonate reservoirs.

**Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM) Campus Estado de Mexico (CEM)**; Mexico City, Jan 2002 – Feb 2004

*Part-time Lecturer in the Mechanical Engineering Department Energy Transfer and Thermodynamics*

- Lectured in Energy Transfer and Thermodynamics.
- Lectured in Computer-Aided Engineering Design.

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## SKILLS

### Computer Based Software

- **Petrophysics.** Geolog, Techlog, IP.
- **G&G and Reservoir Engineering.** PETREL, tNavigator, @Risk, ComboCurve, PETEX-MBAL, familiar with Prosper.
- **Data Analytics and Machine Learning.** Matlab, Spotfire, Power BI Machine Learning algorithms.

### Programming

- Python Programming.
- Visual Basic, Matlab, TCL/TK.

### Languages

- Fluent in Spanish and English.
- Moderate in German.

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## HONORS AND AWARDS

- **U.S. Naturalization Certificate.** U.S. Homeland Security - Houston, TX. November 2019. Skilled Worker EB2 Application.
- **ITESM – CEM University.** Mexico City, November 2003. Best Score during the Lecturer Evaluation.
- **Silver Medal Awarded by Schlumberger.** Schlumberger – DCS, Luanda, Angola. September 2007.
- **Letter of Recognition for Outstanding Value.** Pemex, Ciudad del Carmen, February 2020.