

Andres Baena Velasquez

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US Work Authorization

SUMMARY

PhD Student in **Petroleum Engineering** with combined **field and academic** experience in **drilling, completions, production, and sustainable energy technologies**. Skilled in **data analysis, operational optimization**, with hands-on expertise in **HPHT testing** (320 °C, 6000 psi), **digital engineering**, and **well integrity**. Currently pursuing a **Certificate in Sustainable Energy Systems** (expected 2026) with a passion for energy transition, carbon capture, and geothermal innovation.

EDUCATION

University of Oklahoma — Norman, OK

PhD in Petroleum Engineering, **Expected May 2027** | **GPA Expected 4.0/4.0**

- Focus: Well integrity, drilling dynamics, geothermal, Carbon Capture and Sequestration (CCS)

M.S. in Petroleum Engineering, May 2025 | GPA 3.3/4.0

Certificate in Sustainable Energy Systems (In Progress), Expected 2026

Universidad Viña del Mar — Chile

Master's in Hydrocarbon Industry Management, August 2015 | GPA 3.4/4.0

Universidad del Tolima — Colombia

B.S. in Financial Administration, September 2012 | GPA 3.1/4.0

EXPERIENCE

Graduate Research/Teaching Assistant

University of Oklahoma | Aug 2022 – Present

- Conduct **drilling vibration** and **well integrity** research integrating data-driven clustering and supervised learning.
- Executed **HPHT experiments (320 °C, 6000 psi)** validating geothermal and CCS downhole tools.

Digital Operations Intern – Advanced Well Engineering

Helmerich & Payne (H&P) | May 2024 – Aug 2024

- Performed **torque, drag, fatigue & BHA analysis** with DrillScan.
- Analyzed **Pason well data & KPIs** with Power BI and Salesforce to identify efficiency gaps.
- Delivered case study recommending **design & operational improvements** across drilling operations.

Operation Supervisor

Petroworks S.A.S | Oct 2020 – Feb 2022

- Led drilling crews on land rigs, ensuring **zero major incidents** while complying with **well control and safety protocols**.
- Managed **BOPs, top drives, and mud systems**, minimizing NPT across operations.
- Trained and supervised multicultural crews, promoting a **safety-first culture**.

SKILLS

Energy Transition & Sustainability: CCS, Geothermal, Sustainable Systems

Operations: Drilling, Completions, Well Control, BHA Design, HPHT Testing

Data & Tools: DrillScan, Pason, Power BI, Salesforce, MS Office Suite

Analysis: Well integrity research, well site data interpretation, drilling monitoring

Certifications: IWCF Well Control (Valid until Mar 2024)

RECOGNITION AND VOLUNTERING

- **Outstanding Colombian Award**, Colombian Society of Oklahoma – *Oklahoma City, July 2025*
- **AADE Outstanding Master's Student Award**, University of Oklahoma – *2024*
- **The Big Event Volunteer**, University of Oklahoma – *2023, 2024, 2025*