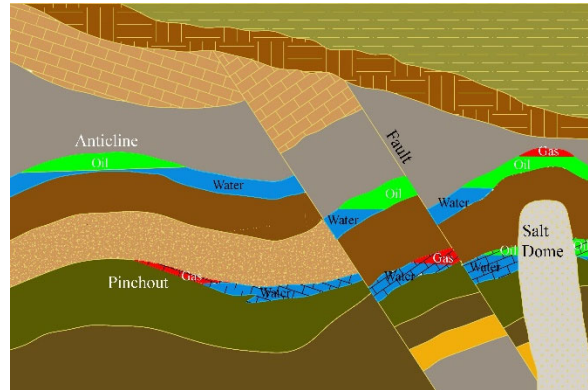


# Practical Unconventional-Gas Facilities-Engineering

## 5-Day Course

This course is designed for technical professionals with field development and operations responsibilities. The course begins with a discussion of reservoir basics intended for non-Reservoir Engineers and continues through drilling/completions concepts, wellbore dynamics, wellsite facilities, gathering facilities, water disposal, introduction to plant operations, and finally case studies and integration of concepts.

The course focuses on “what” is involved in getting reservoir fluids to sales rather than “how” to be a Reservoir Engineer, Production Engineer, Facilities Engineer, Process Engineer, and Oil & Gas Manager. The sections all include discussions of the tools that can enhance the effectiveness of a field engineer. This material is heavy with practical discussions of Engineering calculations, hands-on exercises, and the underlying assumptions behind the equations that are broadly used in Oil & Gas.



The course is intended to provide necessary tools for facilities and production Engineers with ties to the field. It emphasizes facilities issues that can arise after the gas leaves the coal-face/shale-face.

The examples in the course focus primarily on U.S.A. and Australian operations because these operations are significantly more mature than Unconventional Gas operations in other parts of the world, and a more complete life-cycle analysis can be provided from that perspective.

Oil & Gas regulations, including environmental regulations, are very complex and vary widely from jurisdiction to jurisdiction. A comprehensive review of these regulations is beyond the scope of any five-day course, so the limited discussion of regulations in this course is presented from a San Juan County, New Mexico, U.S.A. point of view as an example of the restrictions that can be placed on operations in a mature basin—this class is not intended as a Law-Review Class and regulations are only presented to illustrate the range of issues that can arise.



Attendees of this course will be expected to take a pre-course examination to assess the level at which the class should be taught and a post-course examination to assess its effectiveness.

### Course Schedule

#### Day One:

- Reservoir basics (4 hours)
- Wellbore construction (4 hours)

#### Day Two

- Well dynamics (5 hours)
- Field Engineering concepts (3 hours)

#### Day Three

- Field Engineering, cont. (3 hours)
- Wellsite facilities (5 hours)

#### Day Four

- Gas gathering (5 hours)
- Produced water (3 hours)

#### Day Five

- Gas compression (3 hours)
- Plant concepts (2 hours)
- Integration of concepts and case studies (2 hours)
- Course assessment (1 hour)

It is intended that the class begin each day at 8:00 am and complete at 4:30 pm with ½ hour for lunch. Breaks provided approximately every 50 minutes.

Cost of the course is \$4,100/student with an 8 student minimum. Instructor will provide: (1) classroom instruction; (2) A single .pdf version of the copyrighted course handouts and permission for the company to make enough copies for the enrolled students; (3) electronic copy of pre-course exam to the students and graded by instructor; (4) post-course exam electronically provided to the students and graded by instructor; and (5) copies of test results to company course contact.

The company will provide: (1) a course coordinator to provide class logistics and act as a single point of contact with the instructor; (2) a training room equipped with computer projector, white board, board markers and adequate seating for attendees; (3) student handouts (including a copy of Practical Onshore Gas Field Engineering by David Simpson); (4) lunches for the students and instructor; (5) drinks and any provided refreshments for the attendees; and (6) reimbursement of instructor travel and entertainment expenses (including Business Class travel for any flight segment longer than 4 hours), hotel accommodation, local transportation, and meals. For individual classes with a paid attendance of more than 20 students, MuleShoe Engineering will pay instructor's Travel and Entertainment expenses without reimbursement by company.

### Instructor Bio

Mr. David Simpson has 42 years' experience in Oil & Gas and is currently the Proprietor and Principal Engineer of MuleShoe Engineering. Based in the San Juan Basin of Northern New Mexico, MuleShoe Engineering addresses issues in Coalbed Methane, Low Pressure Operations, Gas Compression, Gas Measurement, Field Construction, Gas Well Deliquification, and Produced Water Management. Prior to forming MuleShoe Engineering, David was a Facilities Engineer for Amoco and BP for 23 years. A Professional Engineer with his Masters degree, David has had numerous articles published in professional journals, has contributed a chapter on CBM to the 2nd Edition of *Gas Well Deliquification*, by Dr. James Lea, et al. In 2017 David completed *Practical Onshore Gas Field Engineering*, published by Elsevier. He is a regular contributor to various conferences on Deliquification, CBM, and Low-Pressure Operations. He holds a BSIM from University of Arkansas and an MSME from University of Colorado. David also holds Professional Engineer status in New Mexico and Colorado.

