The New IPIMS
Content, Navigation and New Features Guide

e-Learning and Knowledge Solutions
v9.2019

IHRDC
The New IPIMS Content Releases
September 2019

Resources and Reserves Estimation
Well Log Interpretation Essentials
Resources and Reserves Estimation

- Introduction to Resources and Reserves Estimation
- Resources and Reserves Classification Systems and Definitions
- Analog and Volumetric Methods for Resources and Reserves Estimation
- Performance Methods for Estimating Reserves
- Issues in Reserves Estimation
- Resources and Reserves Estimation Case Studies

Reservoir Fluid Properties
- Saturation Pressure = 5290 psig
- Original Solution GOR = 1600 cu. ft./bbl.
- Gravity = 30 API

IHRDC
Well Log Interpretation Essentials

- Quick-Look Interpretation
- Shale Content
- Porosity
- Lithology
- Fluid Saturation
- Field Studies
The New IPIIMS
Content Releases
June 1, 2019

Hydrocarbon Indicators
Risk Analysis Applied to Petroleum Investments
Seismic Interpretation of Shales
Hydrocarbon Indicators

• Seismic Methods and Hydrocarbon Detection
• Reflections and Seismic Parameters
• Seismic Attributes and Their Preservation
• Amplitude HCIs
• Amplitude Versus Offset (AVO)
• Seismic Modeling
• Shear Waves and Other Hydrocarbon Indicators
Risk Analysis Applied to Petroleum Projects

- Risk Analysis Fundamentals
- Probability Distributions
- Monte Carlo Simulation Models
- Competitive Bidding and Enterprise Risk Management
Seismic Interpretation of Shales

- Unconventionals
- Seismic Attributes
- Geometric Attributes
- Fracture Monitoring With Microseismic
The New IPIMS
Planned Content Releases
Q3/4 2019
Oil and Gas Pipelines
   Reservoirs
   Perforating
   Sand Control
   Traps
Seismic Stratigraphic Modeling
Specialized Well Log Interpretation
The New IPIMS
Content Released
2018

Seismic Contouring
Coring
Core Analysis
Logging Equipment and Procedures
Overview of Formation Evaluation
Fault Interpretation
Completion Equipment
Hydrocarbon Generation and Migration
Velocity Interpretation and Depth Conversion
Completion Equipment (December 2018)

- Completion Tubulars Overview
- Completion Tubulars Design
- Packers
- Seals and Elastomers
- Downhole Completion Accessories for Unconventional Oil and Gas Developments
- Downhole Completion Accessories for Flowing and Gas-lifted Wells
- Equipment for Low Rate, Pumping Wells
- Upper completion equipment (SSSV & Wellheads)
Core Analysis (November 2018)

- Introduction to Core Analysis
- Core Sample Preparation
- Porosity Measurement
- Permeability Measurement
- Fluid Saturation Determination
- Complementary Core Information
- Core Reports
- Special Core Analysis
Velocity Interpretation and Depth Conversion

- Seismic Velocities
- Normalized Interval Velocity
- Well Velocities
- Seismic Velocity Databases
- Time-Depth Conversion Methods
- Normalized Interval Velocity Techniques
- Error Factors
- Other Methods (Additional Examples) for Time-Depth Conversion
Hydrocarbon Generation and Migration

- Generation and Maturation Processes
- Migration Processes
Seismic Contouring

- Contouring Fundamentals
- Contouring by Hand: Picking
- Contouring by Hand: Solving Misties
- Contouring by Hand: Practical Procedures
- Contouring by Machine
- Contour Maps: Operations
Coring

- Introduction to Coring
- Borehole Environment
- Full Diameter Conventional Coring
- Sidewall Coring
Logging Equipment and Procedures

- Wireline Logging Equipment
- Wireline Logging and Operational Procedures
- Logging While Drilling (LWD) Equipment and Operational Procedures
Overview of Formation Evaluation

- Fundamentals of Formation Evaluation and Subsurface Evaluation
- Fundamentals of Rock and Fluid Properties and their Measurement by Logging Tools
- Fundamentals of Laboratory Measurements of Rock and Fluid Properties
- Fundamentals of Well Testing and Analysis
Fault Interpretation

- Faults in Petroleum Provinces
- Stress and Strain
- Fault Nomenclature
- Seismic Expression of Faults
- Fault Data Interpretation
- Divergent Basins: Structural Styles
- Convergent Basins: Structural Styles
- Faults: 3D and Workstation Interpretation
The New IPIMS
Previously Released Content
June 16th, 2017

Basic Completion Design and Practices
Basic Seismic Interpretation
Introduction to Unconventional Resources
Basic Completion Design and Practices

- General Criteria for Completion Design
- Basic Downhole Configurations
- Lift Methods and Completion Design
- Specialized Completion Designs
- Completion Productivity and Injectivity
- Completion Planning
Basic Seismic Interpretation

• Introduction to Seismic Interpretation
• Structural Interpretation
• Seismic Stratigraphy
• Seismic Interpretation Methods
• Interpretation with Seismic Attributes
Introduction to Unconventional Resources (NEW)

- Introduction to Unconventional Resource Types
- Introduction to Unconventional Resource Development
- Shale Reservoirs
- Tight Gas Sands and Their Development
- Coal Bed Methane Reservoirs and their Development
- Extra-Heavy Oil Resources
2015-2016 Content Releases

Released 2016:

• Petroleum Geology
  — Petroleum Geomechanics
  — Plate Tectonics and Sedimentary Basins
  — Subsurface Environment

• Petroleum Geophysics
  — Gravity and Magnetics
  — Seismic Pulse
  — Seismic Reflection

• Petroleum Engineering
  — Fluid Flow and the Production System
  — Hydraulic Fracturing
  — Slickline Well Intervention (NEW)
  — Coiled Tubing Well Intervention (NEW)

• Formation Evaluation
  — Dipmeter Surveys

Released in 2015:

• Petroleum Geology
  — Fundamentals of Petroleum Geology
  — Structural Geology
  — Hydrocarbon Properties

• Petroleum Geophysics
  — Fundamentals of Exploration Geophysics
  — Signal Theory: A Graphical Introduction
  — Waveform to Geologic Model
    (previously “Geological Messages in the Seismic Trace’)

• Petroleum Engineering
  — Artificial Lift Methods
  — Cementing
  — Electric Line Well Intervention (NEW)
  — Overview of Rigless Well Intervention (NEW)
The New IPIMS
Navigation and New Features Guide
Welcome to IPIMS!

IPIMS is the award-winning, interactive multimedia and leading e-Learning system for building competencies in Upstream Petroleum Technology.

IPIMS includes over 1057 courses in 158 E&P topic areas and provides a comprehensive and flexible learning system that can be tailored to meet each individual’s specific needs.

The courses are designed around two levels of learning: Background Learning and Action Learning. Each level includes extensive content, award-winning video, and challenging interactions and self-assessment questions.

Use the options below to search or browse the complete IPIMS Course Catalog. You can also download IHRDC’s detailed 390+ page e-Learning Course Catalog PDF file.

Click the icons below for more information.

IHRDC Announces Upgrade to its IPIMS e-Learning System
The new IPIMS Portal page directs the user to select one of two options given below.

Background Knowledge

Background Learning and Action Learning
Welcome Dave

To enhance your learning and development resources, we have licensed IHRDC’s e-Learning system, which focuses on exploration and production technology. We are pleased to announce that this innovative learning system, known as IPIMS (International Petroleum Industry Multimedia System) is now available as an online reference tool and training package.
IPIMS users can now ‘Search Knowledge’ pages using Keywords…

…and ‘Browse by Discipline.’

• Updated Search Engine functionality
‘Browse By Discipline’ Filter Views

- When **Browsing by Discipline**, filter by:
  - Pages
  - Images
  - Videos
  - Interactives
The left menu Subject Listing bar allows the User to easily navigate through multiple pages within a given Subtopic.

Click here to access the left menu Subject Listing bar.
‘Select a Learning Plan’ in the New IPIMS

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Quick Search Across IPIMS Knowledge & Learning

Browse our comprehensive library of E&P knowledge, concepts and practices.

SELECT A LEARNING PLAN

Choose from over 900 self-guided IPIMS e-Learning courses.
Learning Selection

Begin by making your Learning selection, either Background Learning and/or Action Learning.

Select your navigation choice.

Then, filter by Discipline.
Background Learning – Select a Topic

- **Background Learning’s new features** employ interactive content elements within:
  - Subject pages
  - Knowledge Checks
  - Assessment Questions

- The new interactive content elements are designed to:
  - Engage the learner
  - Increase learning retention

Finally, select your **Topic** and begin your course!
New Background Learning User Interface

- Instructionally designed to:
  - Increase learning retention
  - Provide a newer look and feel

- Tablet-friendly interface
Topic Level View in IPIMS Background Learning

Clearer Navigation of Subtopics within a Topic.
Helpful Tips & Tricks

See all the notes you have taken for the Subtopic within this Topic. Notes are saved at the Topic level.

Once you complete the Topic, you will be able to print a Certificate of Completion.

See the overall Topic status as you progress through the Subtopics.
If you need help at any point, simply click on Show Tips within the Help options for convenient tips to guide you through a course.
Click the **Start** button to view Learning Objectives and then continue on to the first subject listing.
Helpful In-Progress Resources

Write your own course **notes**. You can also view notes from the topic level.

Provide **feedback** and comments on this course.

Increase **text size** for easier viewing.

Expand or collapse this **tool bar**.

Go back to the topic level.
In-Course Navigation

Click the lock icon to keep this left menu bar displayed as you go through the course. Click the unlock icon to collapse the menu bar.

List of subjects in the course. Click a subject name to navigate to it or use the page forward & back icons on the subject screen.

After completing the assessment, please take a moment to rate this course.

Take the course assessment once you have completed reading through the subjects.

View the references used in this Topic.

Go back to the Topic level.
Updated Video Player

New video player available in three different sizes (shown here: small) with corresponding cc text and transcript.

Navigation bar: move forward and backwards within a course.
Updated Video Player

Medium size video player, with the transcript below for better reading.

Full screen size video player.
New Feature: Subject Page Interactives

**Animation**

[Image: Animation interface showing interactive elements and media.]  

**Popover Images**

[Image: Popover image interface showing image-based interactions.]  

**Multi – Image Media Panel**

[Image: Media panel interface showing multiple images and interactive elements.]
New Feature: Knowledge Checks

Knowledge Checks are optional questions presented at the end of each Subject page and designed to reinforce key concepts and learnings in the content, through various question formats.

Constructive feedback is provided, re-enforcing a correct answer or explaining why an answer is incorrect.
New Feature: Assignment and Draft Pad

Draft Pad is available to write down your solution during Exercises or Assignments. Notes in the Draft Pad are not saved for later use.

Industry-specific scenario based Assignment to apply Learning content.
Navigating Assessments

Click the Assessment Status pop-up panel to seamlessly navigate through the assessment questions.

Highlighting makes it clear which questions remain unanswered.
Assessment Questions, and their variety of formats, make for more engaging learning which improves the ability to assess the learner’s knowledge of more complex content.
After completing the Assessment, you are able to **review** your Assessment answers or **rate the course**.
Course Completion

Your **Topic** progress will update as you complete each **Subtopic**.

Subtopic grades and progress are clearly marked.
IPIMS Action Learning 3.2
The New IPIMS Action Learning
The New IPIMS Action Learning

Production Optimization

In this Learning Module, you will review the actual performance of Well 5A1-SW, as well as that of several other wells in offsetting fields, in an effort to optimize their production rates. By the time you complete this module, you should be able to analyze well behavior using nodal analysis and historical production trends, diagnose equipment problems and/or detect production deviations, and recommend the appropriate action for optimizing production.

Well 5A1-SW has been completed in the Upper/Middle sands, and a production and buildup tests have been completed. You now need to see if the well's actual performance matches what was predicted before its completion. You will be looking for ways to optimize the well's production under both current and future reservoir conditions. You will also look at other wells, including two that are currently producing using electric submersible pumps and one that is planned as a rod pump completion, and make recommendations regarding their performance.

Subtopics in Production Optimization:
The New IPIMS Action Learning

Production Optimization

Competency Statement
Optimize the performance of individual producing wells.

Learning Objectives
Upon completion of this module, the participant should be able to:
- Analyze well behavior, using nodal analysis and interpreting historical production trends.
- Diagnose equipment problems and/or detect production deviations.
- Identify production problems relating to pressure decline, water, gas or sand production, low productivity, formation damage or equipment failure.
- Recommend actions required for optimizing production, identify candidate wells for well servicing, stimulation and/ or sand control and indicate the best methods.

Helpful tips

Welcome to this challenging Action Learning course.

Before you begin the Assignment, please review the Learning Objectives. These will help you better understand what the assignment covers and what you may expect to learn.

Let’s start with the Pre-Assessment. The Pre-Assessment is a set of multiple choice questions designed to give you an idea of your current knowledge of the Assignment subject areas, and to help you identify areas where you need to gain some additional knowledge before you take on the Assignment.

Once you complete the Pre-Assessment, you will be provided with links to this background knowledge in IPIMS.

Keep in mind that although the Pre-Assessment is not recorded in your final course score, it is useful for pointing out areas where some extra study will help you successfully complete the Assignment.

It also provides a baseline for seeing how much you’ve learned, by letting you compare your score with that of the Post-Assessment that you will take to complete the course.

Your final course score is a weighted average consisting of 60% of your Assignment score, plus 40% of your Post-Assessment score.

Got it
The New IPIMS Action Learning

How to Use This Course

- Read through the Assignment Instructions

- Complete the assessment (required for completion). You may repeat the assessment up to two times.

- At any point during the course, you can access related IPIMS material by clicking on the BACKGROUND button on the top right of the screen.

- Action Learning REFERENCES are an essential resource — there you will find the field data and other information needed to complete the Assignment.

START
Click here to go to the General Assignment Instructions.
Improved views of references and background knowledge
Flow Equations

Equations for Flow of Undersaturated Oil

1. Steady state, radial flow

\[ P_s = P_{ref} - \frac{141.2 \pi B \mu}{k h} \left( \frac{r_s}{r_w} \right)^2 \]

Applications: Constant pressure at outer drainage boundary (e.g., pressure maintenance by injection).

2. Semi steady state, radial flow

\[ P_s = \frac{141.2 \pi B \mu}{k h} \left( \ln \frac{r_s}{r_w} \right) \]

Applications: Non-constant pressure at outer drainage boundary (e.g., fault, pinchout, or production from adjoining wells).

3. Semi steady state, irregular flow boundary

\[ P_{avg} = P_{ref} - \frac{141.2 \pi B \mu}{k h} \left( \frac{1}{2} \ln \frac{r_{avg}^2}{gA} \right) \]

Applications: Irregular drainage shape, or asymmetrical positioning of well within drainage area.

Units and Nomenclature:

- \( A \): drainage area, square ft
- \( B \): formation volume factor
- \( C_a \): shape factor
- \( k \): permeability, md
- \( P_{avg} \): average reservoir pressure in drainage area, psig
- \( P_s \): pressure at outer drainage boundary, psig

Referenced: 1 of 3
Production Optimization

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Updated module progress view
Assignment Instruction

In this Learning Module, you will review the actual performance of Well 5A1-SW, as well as that of several other wells in offsetting fields, in an effort to optimize their production rates. By the time you complete this module, you should be able to analyze well behavior using nodal analysis and historical production trends, diagnose equipment problems and/or detect production deviations, and recommend the appropriate action for optimizing production.

Well 5A1-SW has been completed in the Upper/Middle sands, and a production and buildup tests have been completed. You now need to see if the well's actual performance matches what was predicted before its completion. You will be looking for ways to optimize this well’s production under both current and future reservoir conditions. You will also look at other wells, including two that are currently producing using electric submersible pumps and one that is planned as a rod pump completion, and make recommendations regarding their performance.
The New IPIMS Action Learning: Assessment

**Assessment**

1. What type of acid do you recommend using for the main treatment?

   A. 28 percent hydrochloric acid
   
   B. Standard mixture of 12 percent hydrochloric (HCl) and 3 percent hydrofluoric (HF) acid
   
   C. Mixture of hydrochloric (HCl) and hydrofluoric (HF) acid, concentration to be determined by laboratory analysis of core material.
   
   D. Mixture of 15 percent HCl and 3 percent acetic acid

New assessment engine
Well Stimulation and Sand Control

Well stimulation treatments, which are designed to restore or enhance well productivity, are of two basic types. Matrix treatments are performed at pressures that are below the formation fracture pressure, they are primarily designed to remove near-wellbore damage. Fracture treatments, on the other hand, are performed at pressures above the formation fracture pressure; they are designed to open up highly conductive flow paths between the reservoir and the wellbore, thereby bypassing near-wellbore damage and changing the flow patterns around the well.

Sand control technology is built around preventing loose sand and other unconsolidated formation solids from plugging the formation or entering the wellbore. As you will see in this assignment, stimulation and sand control technologies are in some ways closely related, and under certain circumstances, may even overlap.

In this assignment, you will carry out preliminary design work both for a matrix acid stimulation and a hydraulic fracture treatment, and will also select the appropriate sand control measures for a flowing production well. In each case, you will evaluate the nature and extent of the near-wellbore damage that has made stimulation and/or sand control necessary.

Subtopics in Well Stimulation and Sand Control:

- Pre-Assessment
  - Failed (Score 20%)
- Assignment 1
  - Failed (Score 50%)
- Assignment 2
  - In Progress
- Assignment 3
  - Not Started
- Shot Assessment
  - Not Started
**Action Learning: Complete Entire Course**

**Initial Well Planning**

The Asset Management Team responsible for PETROS Corporation’s portion of the Tremont onshore field has recently completed an appraisal of the 6th Zone reservoir, and is now preparing a development program. The team has given you a proposed bottomhole location for the first development well, Adams 6. The target location is in Block D-4, approximately 0.5 km (1640 ft) from the property boundary between PETROS Corporation and Apex Oil & Gas Company. The discovery well for the 6th Zone anticline was Apoil’s Copley 1. Four additional wells (Copley 3, Adams 4, Adams 6 and Adams 7) have either tested or are currently producing commercial quantities of oil. Three others (Copley 2, Blust 1 and Adams 5) were drilled outside of the structure boundaries and subsequently abandoned.

Your tasks in this assignment are to establish the drilling objectives for this well in keeping with the overall reservoir management strategy, and to identify some of the key issues to be addressed in the well planning process.

**Subtopics in Initial Well Planning:**

- Well Objectives
- Basic Well Planning Considerations
- Potential Hazards
- Regulatory Compliance
- Subsurface Pressure and Temperature Prediction

**Budget Cost Estimate**

- Assignment
- Post-Assessment

**Estimated Topic Duration:** 8h

**Overall Topic Score:** 95%

**Course Status Details:**
- Not Started
- Failed
- In Progress
- Completed
Action Learning: Detailed Score Results

Initial Well Planning

**Detailed Status**

- **PRE-ASSESSMENT**
  - 5/9/2013
  - 4%

- **ASSIGNMENT**
  - 1: FIRST ATTEMPT
    - 5/6/2013
    - 25%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

  2: FIRST ATTEMPT
    - 5/6/2013
    - 0%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

  3: FIRST ATTEMPT
    - 5/6/2013
    - 20%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

  4: FIRST ATTEMPT
    - 5/6/2013
    - 0%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

  5: FIRST ATTEMPT
    - 5/6/2013
    - 0%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

  6: FIRST ATTEMPT
    - 5/6/2013
    - 50%
  - SECOND ATTEMPT
    - 3/2/2018
    - 100%

- **POST-ASSESSMENT**
  - 5/6/2013
  - 4%
  - 3/2/2018
  - 100%

**Overall Status**

- **FIRST ATTEMPT AVERAGE**
  - 5/6/2013
  - 11%

- **OVERALL TOPIC SCORE**
  - 5/6/2013
  - 95%

**Certificate of Completion**

- PRINT this Learning Topic before this.

**Rate This Course**

- Poor Improvement
  - Good
  - Excellent

**Estimated Topic Duration**: 8h

**Overall Score**: 95%
Action Learning: Certificate of Completion
Additional Examples
Subject Pages: Interactive Examples

Horizontal Tabbed Content

Vertical Tabbed Content

Accordion Tabbed Content
Regional Seal

A third play requirement is a regional seal which will confine the petroleum in the reservoir. The ideal regional seal has a fine-grained, dolomite lithology, with sufficient lateral distribution to cover the reservoir. The seal thus keeps the hydrocarbons in the carrier beds, and prevents them from leaking off the trap.

Example of a Regional Seal

Drag Image & Zoom
Knowledge Checks: Interactive Examples

Drag & Drop and Fill In the Blank

Multiple Choice and Image Hotspot Identifier
Assessments: Interactive Examples

Matching Drag & Drop

Multiple Select