

ECHOMETER 2018 SEMINARS

WELL TROUBLESHOOTING SEMINARS

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|---------------|----------------|
| ODESSA | FEB. 21-22 |
| WICHITA KS | MAR. 28-29 |
| SHREVEPORT | APR. 11-12 |
| BAKERSFIELD | MAY 22-23 |
| TULSA | MAY 23-24 |
| ODESSA | JULY 11-12 |
| WILLISTON, ND | JULY 18-19 |
| DURANGO | AUG. 2-3 |
| CODY, WY | AUG. 16-17 |
| ODESSA | OCT. 31-NOV. 1 |

Objective: Use of Echometer Well Analyzer with TWM and/or TAM software to obtain fluid level and dynamometer measurements for troubleshooting producing wells.

Who should attend: Field technicians, pumpers, production operators, tech supervisors currently involved in well troubleshooting.

Echometer Company offers two-day seminars on the topics listed below. The seminars are offered free of charge.

Day One:

- Basics of fluid level acquisition and obtaining quality data for analysis.
- Three methods of fluid level analysis (Automatic Collar Count, Acoustic Velocity, Downhole Marker)
- Gaseous liquid columns
- Calculation of bottomhole pressures from casing pressure and acoustic liquid level depth measurements.
- The effects of static and producing bottomhole pressures on well production.
- Problem wells and common production methods are discussed.
- Downhole Gas Separators
- Motor Power/Current analysis

Day Two:

- Basics of Dynamometer measurements using a Polished Rod Transducer or Horseshoe Load Cell.
- Dynamometer data acquisition and analysis.
- Using fluid level and dynamometer data to troubleshoot wells.
- QRod
- Pressure Transient Testing (if requested)
- Plunger Tracking (if requested)
- Model H Instrument (if requested)

Both the analog and digital Echometers are discussed. The computerized Echometer Well Analyzer and the Wireless Equipment are superior digital instruments which give a complete well analysis. The analog Model M is a strip chart acoustic instrument that is reliable and simple to operate.

INTRODUCTORY WELL ANALYZER WORKSHOPS - WICHITA FALLS

MAR. 1-2

JUNE 21-22

SEPT. 13-14

NOV. 29-30

Objective: Focus on set-up of the Wired and Wireless Well Analyzer, as well as basics of the TWM, and TAM software for well file setup, data acquisition, liquid level, dynamometer and electrical power measurements.

Who should attend: New users or beginner users of the Well Analyzer with main applications in rod-pumped wells.

A series of "HOW TO" WORKSHOPS will be held in Wichita Falls. This Workshop will focus on set-up, data acquisition, TWM, and TAM software use for the Well Analyzer and Wireless System liquid level, dynamometer and electrical power measurements.

The workshop covers:

- Set-up, operation and maintenance of the wired and wireless Well Analyzers
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- Acoustic fluid level data acquisition and quality control
- Calculation of accurate fluid levels and producing and static bottomhole pressures
- Acquisition and quality control of dynamometer data and motor power.
- Basic data analyses are also discussed and applied to detecting the most common abnormal well operation.

During the workshop, the participants will be expected to participate in hands-on exercises in both the classroom and the field to practice acquisition of the data.

Echometer Company requires that during field practice and demonstration, each participant follow his/her company's safety rules and regulations and use their recommended safety equipment. It is recommended that each person bring the Well Analyzer laptop to use during the workshop.

WIRED & WIRELESS WELL ANALYZER & SOFTWARE SEMINAR – WICHITA FALLS

MAR. 5-9

JUNE 25-29

SEPT. 17-21

DEC. 3-7

Objective: Focus on applications of the Echometer digital Well Analyzer and Wireless System, and use of the TWM and TAM software for analysis, troubleshooting and optimization of well performance.

Who should attend: Field technicians, lease operators, production supervisors with some experience using the Well Analyzer or Wireless System.

Echometer Company is offering a five-day Well Analyzer seminar to be held in Wichita Falls. The seminar will cover the efficient production of oil wells and the use of the Well Analyzer and Wireless System to obtain a complete analysis.

The seminar will cover:

- Single shot acoustic analysis
- Dynamometer data acquisition and analysis
- Motor power/current data acquisition and analysis
- Breakout Sessions on:
 - Pressure Transient
 - Plunger Lift
 - Gas Wells
 - Gas-Lift Wells
 - Hands on equipment demonstrations in the field
 - 1 on 1 time with an Instructor

TROUBLESHOOTING PLUNGER LIFT & GAS WELLS SEMINARS – WICHITA FALLS

MAY 7-11

OCT. 22-26

Objective: Focus on artificial lift methods for gas well deliquification with emphasis on optimization of plunger lift operations using new Echometer technology for analysis and troubleshooting.

Who should attend: Production supervisors, field technicians, operators etc. concerned with analysis and optimization of plunger lift installations and gas well deliquification operations.

Echometer Company offers a 5-day seminar on Trouble Shooting Plunger Lift and Gas Wells. Techniques used to analyze field data collected on various lift methods will be presented throughout the seminar. Use of the Echometer Well Analyzer permits immediate identification of liquid loading problems in underperforming gas wells. The topics covered in this seminar are Gas Well Deliquification, Identifying Liquid Loaded Gas Wells, Analyzing & Trouble Shooting Plunger Lifted wells, and review of all methods used to remove liquid loading from gas wells.

ADVANCED PLUNGER LIFT SEMINAR – WICHITA FALLS

MAR. 20-22

Objective: Focus on plunger lift analysis methods and troubleshooting using Echometer TAM software.

Who should attend: Production supervisors, field technicians, operators etc. concerned with analysis and optimization of plunger lift installations and gas well deliquification operations.

Echometer Company offers a 3-day advanced seminar on Trouble Shooting Plunger Lift Wells. Techniques and hands on analysis is used to analyze and interpret collected field data. The

topics covered in this seminar are Gas Well Deliquification, Identifying Liquid Loaded Gas Wells, and Analyzing & Trouble Shooting Plunger Lifted wells.

ADVANCED DYNAMOMETER, TORQUE & POWER SEMINARS – WICHITA FALLS

FEB. 20-22

JUNE 5-7

NOV. 13-15

Objective: Advanced class that focus on the analysis of TAM and TWM Sucker Rod Lift Dynamometer, Counterbalance, and Power data collected using the Echometer Well Analyzer and Wireless Systems. Seminar consists of short formal presentations followed by hands-on analysis of actual example data.

Who should attend: TWM and TAM users who have attended a previous Echometer seminar and are interested in more details in the analysis of Sucker Rod Lift data.

This advanced 3-day seminar offered by Echometer provides guidance on using Dynamometer, Counterbalance, and Power data collected using the Echometer Well Analyzer and also the Echometer Wireless System. Analysis of the data will allow the participant to identify and solve sucker rod pumping problems.

The general format of the seminar will be a collection of one-hour mini-topics. Each mini-topic will consist of a 30-minute presentation followed by the class participants using TWM and TAM software installed on their individual laptops to investigate the presentation's highlighted topic. Knowledge gained from attending this seminar will increase the participant's skill in troubleshooting sucker rod lifted wells.

After attending this seminar, the participant should be able to identify well problems and recommend corrective actions. Application of these analysis techniques to sucker rod lifted wells will increase profitability due to decreased repair cost and increased production.

REMOTE ASSET MONITOR (RAM)/PRESSURE TRANSIENT SEMINAR – WICHITA FALLS TX

SEPT. 11-12

This seminar provides training on the acquisition and analysis of Echometer unattended acquisition equipment and software.

- Using Echometer unattended acquisition equipment and software to acquire Acoustic Single Shot fluid levels, Dynamometer measurements, and Multi-shot Pressure Transient Tests.
- The class will observe the steps to setup the unattended data acquisition equipment at a well and conduct unattended liquid level, dynamometer, and pressure transient testing.
- Analysis of acoustic traces to identify the liquid level echo and how to determine the distance to the liquid level will be presented.
- The basics of pressure transient analysis, including analysis methods and software.

- Data collected on different wells will be used to illustrate conventional analysis methods for determining permeability, well bore damage, and reservoir pressure.
- Advanced analysis methods and test diagnostics, again illustrated with actual data. Class participants should bring their individual laptops.

Knowledge gained from attending this seminar will increase the participant's skill in:

- 1) Conducting pressure transient test, 2) Using software to determine skin, permeability and static reservoir pressure, and 3) How to export data and analyze using advanced analysis methods.

Application of these analysis techniques will aid the operator in identifying wells that have been damaged where stimulation of the well will increase profitability due to increased production.

ONE-DAY WELL ANALYZER SEMINARS IN CANADA – CALGARY, AB CANADA

AUG. 13-16

Echometer Company offers these schools, covering analyzing well performance, acoustic liquid level instruments, dynamometers, electrical power measurement, plunger lift, analyzing gas wells, and acoustic pressure transient testing. The school stresses the use of acoustic data, dynamometer analysis, plunger lift analysis and motor power measurement to solve production problems and improve production efficiency.

Day 1) Shooting Fluid Levels on Oil Wells

Day 2) Well Analyzer Dynamometer and System Efficiency Surveys of Oil Wells

Day 3) Shooting fluid Levels on Gas Wells

Day 4) Plunger Lift Troubleshooting and Analysis