



PTTC Mission Statement

“PTTC benefits the nation by helping U.S. Independent oil and gas producers make timely, informed technology decisions.”

PTTC Primary Objectives

- Identifying and clarifying producer's needs
- Educating producer's about technology options
- Connecting producers to solutions

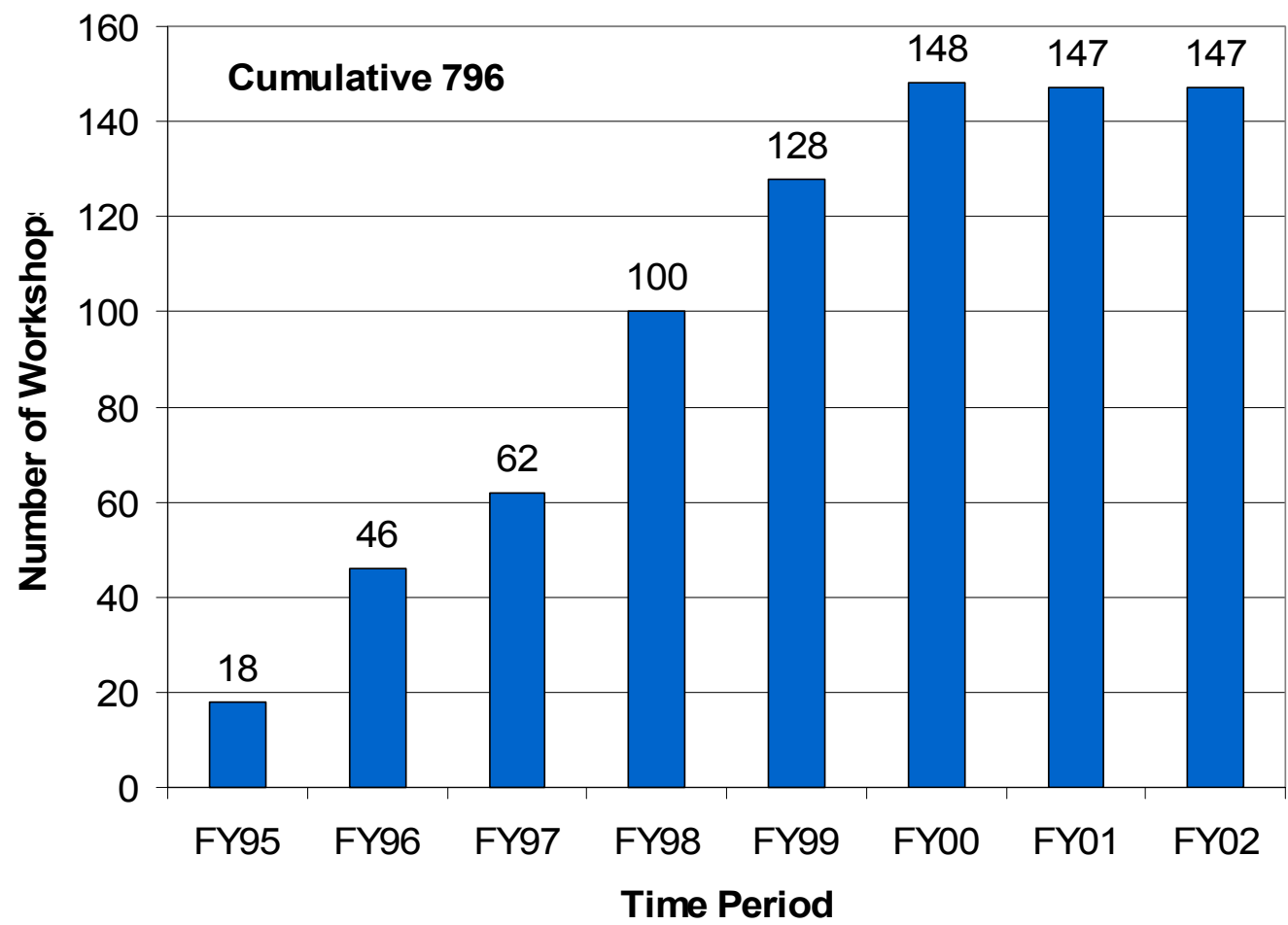
National PTTC Program



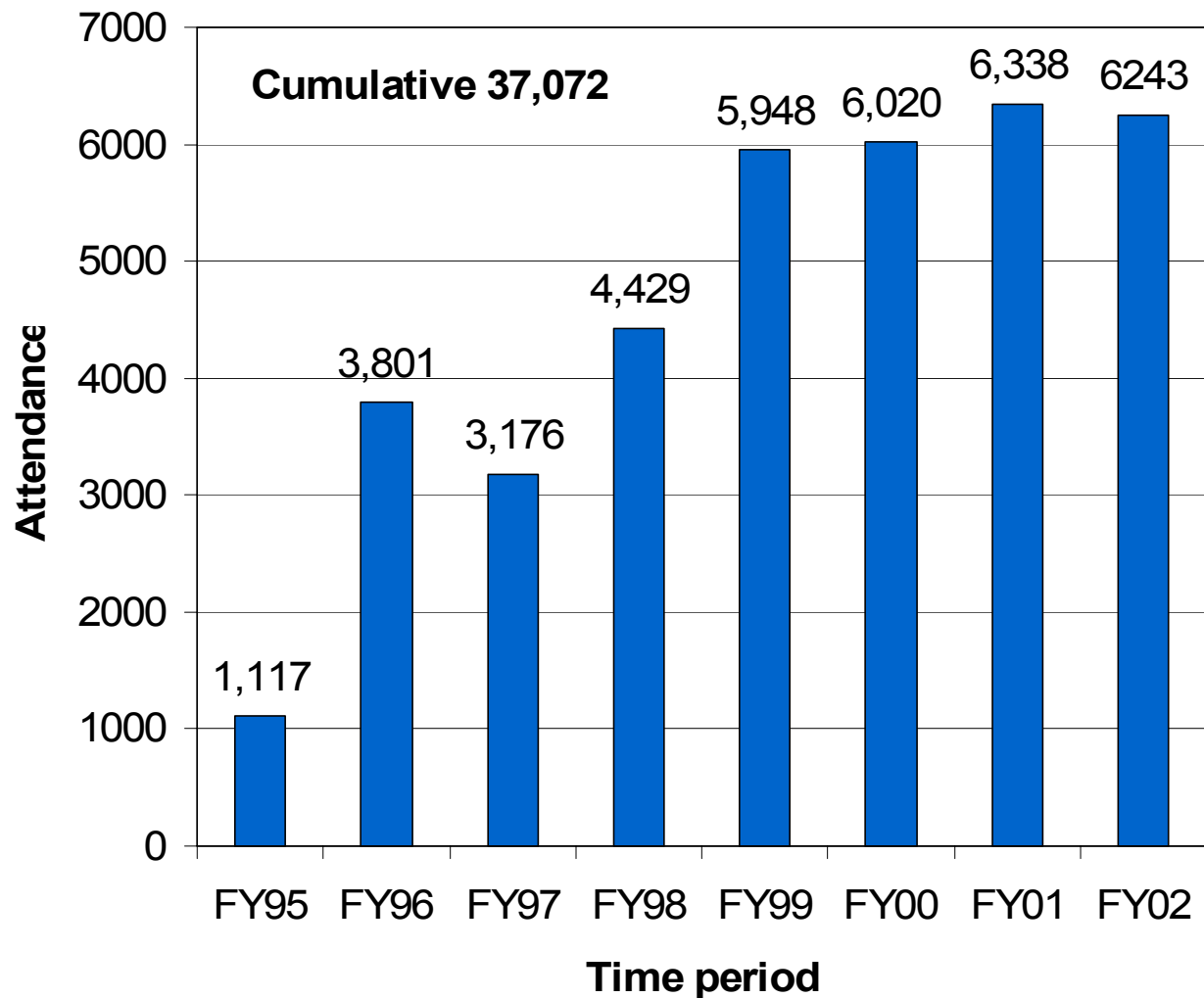
National Website (www.pttc.org)



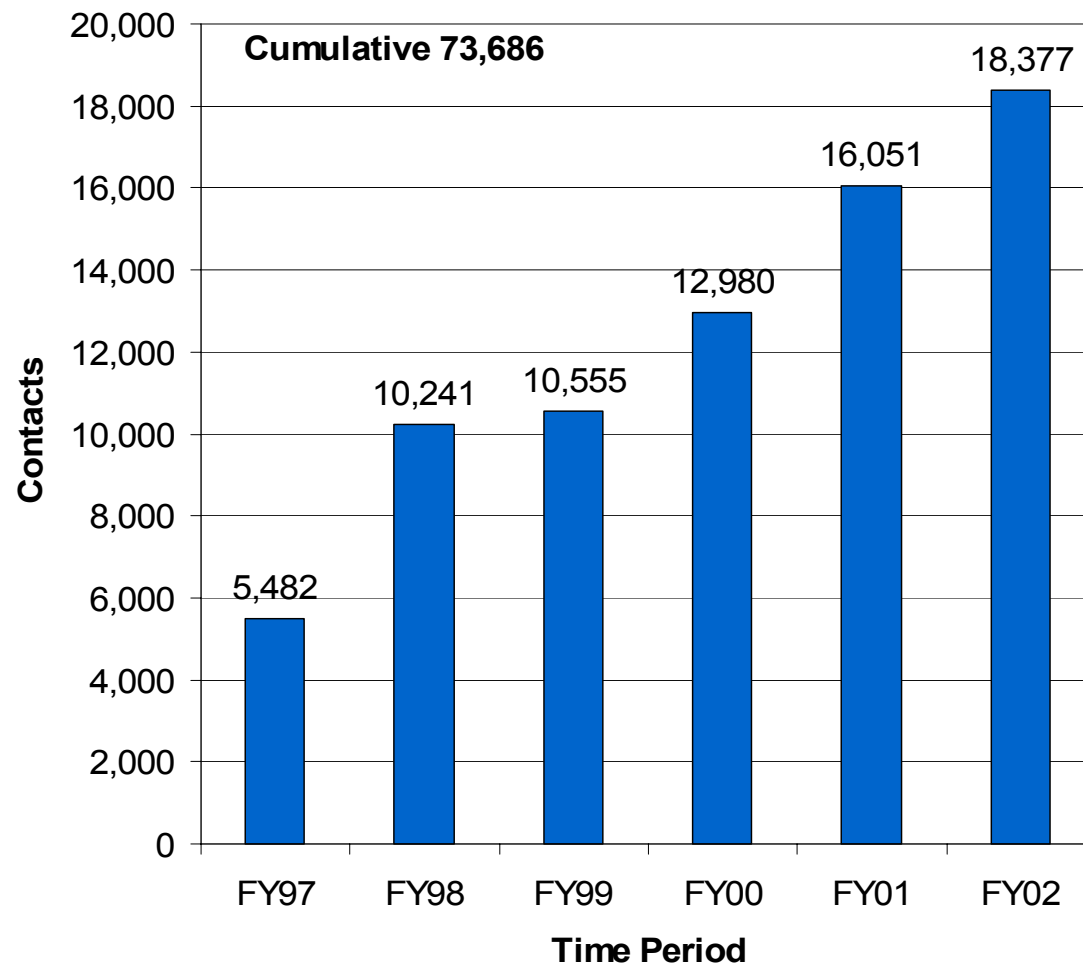
PTTC Workshops



PTTC Workshop Attendance



PTTC Industry Contacts



Technology Transfer Through Field Demonstrations

- DOE sponsored programs for independents
 - Technology Development with Independents Program
 - Stripper Well Consortium
 - Periodic major solicitations



**World wide daily water
production in 1999¹ was
quoted to be more than 210
million barrels, three times
world oil production.**

1. Bailey, W. et al.: “Water Control,” Schlumberger’s *Oilfield Review* (2000) 12, No. 1, 30-51.



**Petroleum Technology
Transfer Council**
Timely, informed technology decisions...

Produced Water and Associated Issues

Rodney R. Reynolds

Director of PTTC North Midcontinent Region

Robert D. Kiker

PTTC Permian Basin Program Director

Key Questions

Do you know if you're producing more water than you have to?

If so, do you know accepted techniques for reducing water production?

If you must lift a lot of water, are you satisfied that you are doing everything you can to control your operating costs?

Motivations for Developing Manual

- Partial fulfillment of a PUMP contract award to the South Midcontinent Region of PTTC
- Response to operator survey
- Largest volume waste stream associated with oil and gas production
- Costs of lifting, separating, handling, treating, and disposing are substantial
- Compiling useful information including past PTTC workshops
- Reference source to assist independent operators

Manual Content

- Divided into eight sections to better address the different technologies used for different water production issues throughout the life of a well
- Not all technologies discussed are applicable to all situations
- Have led in certain situations to improved return on investment and increased economically recoverable reserves

Sections of the Manual

- Basic properties and data management
- Well completion and its impact on water production
- Dealing with high water production during primary production
- Dealing with water production during waterfloods
- Unexpected increases in water production
- Reducing lifting costs
- Corrosion and mechanical wear on equipment used in handling produced water
- Regulatory and environmental issues

Agenda

- 9:00 – 9:15 Introduction
- 9:15 – 9:40 Basic properties and data management
- 9:40 – 10:00 Well completion and its impact on water production
- 10:00 – 10:45 Dealing with high water production during primary production
- 10:45 – 11:00 Break
- 11:00 – 12:00 Corrosion and mechanical wear on equipment
- 12:00 – 1:00 Lunch
- 1:00 – 1:45 Dealing with water production during waterfloods
- 1:45 – 2:15 Unexpected increases in water production
- 2:15 – 2:30 Break
- 2:30 – 3:00 Reducing lifting costs
- 3:00 – 4:00 Regulatory and environmental issues

