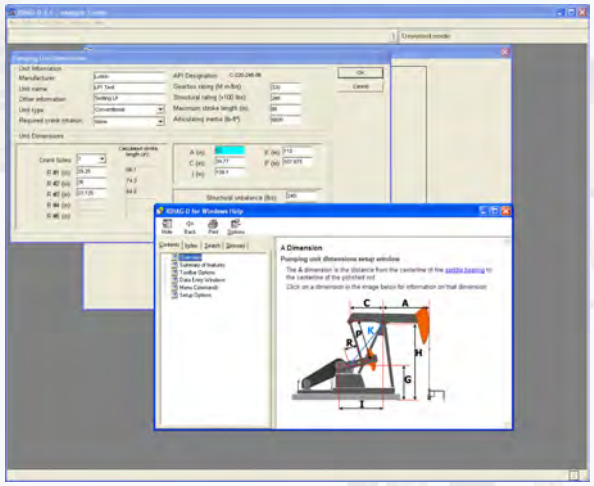
Incredibly User Friendly

XDIAG-D is very easy to use. It has expert context-sensitive help for every input field. Also, XDIAG-D's toolbar allows you to go to any input screen at any time with a single mouse click.



Sophisticated 3-D Wellbore Plot

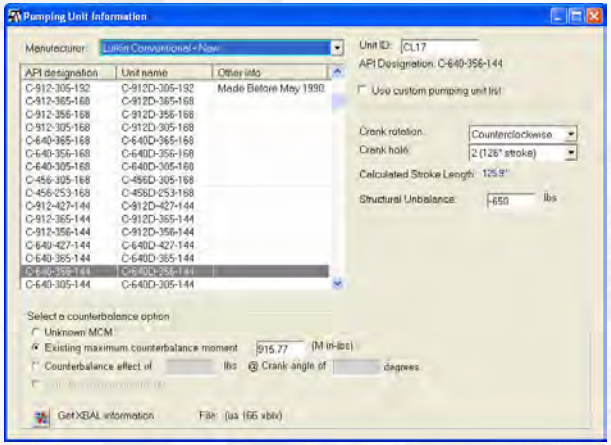
After you enter (or import) your deviation survey, you can select to see a 3-D plot of the wellbore, spin it around to look at different views, zoom in, etc. The program shows the different sections in the rodstring with different colors and also shows the rest of the wellbore in black. This shows where the pump is located.

Outstanding Technical Support

Theta Oilfield Services is dedicated to your satisfaction. Our technical support, which is free for the first year, includes an emailed newsletter, upgrades, "bug" fixes and immediate response to problems or questions. XDIAG-D's technical support includes customized updates to the pattern recognition database to make XDIAG-D even more effective in diagnosing problems with your wells. Program upgrades can be downloaded directly from our website. When you have a problem, solving it becomes our highest priority.

Huge Pumping Unit Database

XDIAG-D comes with a huge pumping unit database (with about 4000 units) that includes data for: Lufkin Conventional (new and old), Mark II, Reverse Mark, Low Profile and Air Balanced units, American, LS/Darco, Rotaflex, Bethlehem, Churchill, National, Oilwell, Rigmaster, Smaco, Lacy Air Balanced, Ampscot, Legrand, Jensen, Cabot, Emsco, Parkersburg, and many others. Also, you can easily enter your own pumping unit dimensions and you can customize XDIAG-D's pumping unit list to only show the pumping units you have in your field.



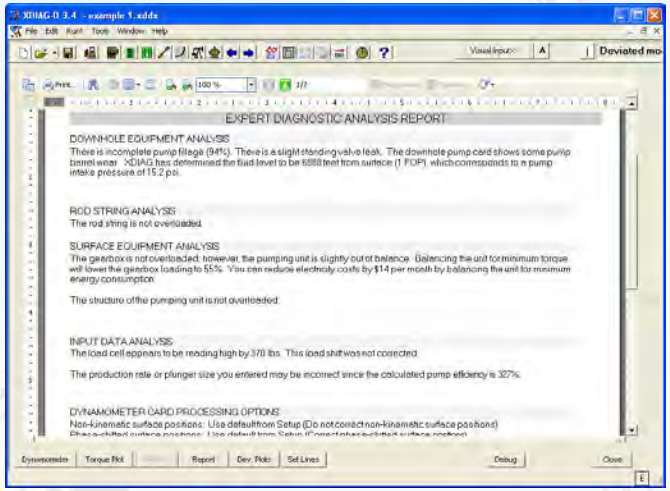
System Requirements

Processor: 1.6 GHz or higher
Operating System: Windows XP/Vista/7
Memory: 1 GB of RAM or higher
Hard Disk: 125 MB available disk space
Display: 1024 x 768 or higher

30 Day Trial

Please contact Theta Oilfield Services for a 30 day trial of XDIAG-D (USA and Canada only).

XDIAG-D™
for Windows™



Expert Diagnostic Analysis of Deviated Rod Pumping Systems

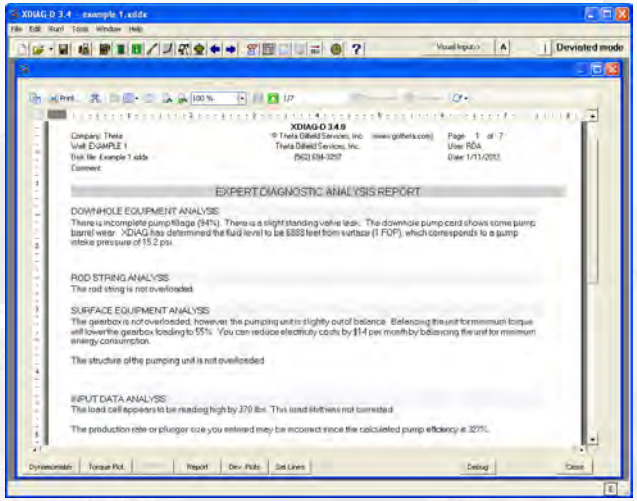
THETA
OILFIELD SERVICES, INC.

Unlimited Petroleum Consulting
Your Artificial Lift Experts

A Futuristic Tool for Expert Diagnosis of Existing Rod Pumping Systems

XDIAG-D is a revolutionary new software tool that combines state of the art expert system and pattern recognition technology with accurate wave equation diagnostic modeling for deviated wellbores. It uses exact pumping unit kinematics that allow it to analyze any available pumping unit geometry.

XDIAG-D tells you with words what is the condition of the pump and calculates fluid level, pump intake pressure, pump friction, and net pump displacement from the downhole pump card shape. Also, it uses IPR data (if available) to calculate additional available production if you pump the well off, or if you reach a "target" pump intake pressure that you set.



XDIAG-D has a unique visual interface that makes changing data very easy. By simply clicking on any part of a picture of the pumping system, you can locate and change any variable associated with that part of the system.

XDIAG-D can animate the surface and downhole dynamometer card plots to show how the surface and downhole loads change as a function of position. This gives you a deeper understanding of what happens at the pump and how it affects the surface dynamometer card. You can "see" rod stretch effects, plunger load fluctuations, fluid pound severity (how fast the plunger hits the fluid) and a lot more.

Summary of Main Features:

- Diagnoses pump condition and calculates pump friction using built in expert knowledge and pattern recognition techniques.
- Detects and corrects input data errors such as a load cell that reads too low or too high or an incorrect fluid level.
- Lists recommendations for fixing downhole problems, for balancing the unit, etc.
- Prints an expert analysis report that is similar to a report written by a human expert. This report tells you with words what is wrong with the pump or other parts of the system. It also plots surface and downhole dynamometer cards and gearbox torque plots. XDIAG-D prints an output report that includes all the quantities calculated by the program, including the dynamometer and torque plots.
- Calculates gross pump stroke, pump volumetric efficiency, overall system efficiency, peak torque and gearbox loading for existing and balanced conditions, and the counterbalance you need to balance the unit. Also, it shows the difference between balancing the unit for minimum gearbox torque and for minimum energy usage.
- From the downhole pump card it automatically calculates fluid level, pump intake pressure, net stroke, fluid production from net stroke, and pump fillage.
- Its batch run option allows you to make unattended runs of as many XDIAG-D files as you want and automatically creates an Excel Spreadsheet that automatically loads into Excel.
- Calculates IPR plots and additional production potential with Vogel or Fetkovich methods.
- XDIAG-D is built into our automation software, XSPOC. Using XDIAG-D with XSPOC allows the analysis of your wells to be done automatically as data is collected, or you can set a time to run the analysis (overnight for example).

Custom Setup

XDIAG-D can be run using three different systems of measurement: English, SI (Metric), and Canadian (a mix of English and Metric). Also, you can customize the program by entering your company name, electricity cost, default pump type, etc. You can enter custom rod grades and measured pumping unit dimensions. You can set up XDIAG-D for automatic execution by specifying the location of the dynamometer files, the directory for storing the summary spreadsheet files, and the time to begin analyzing the wells. XDIAG-D even allows you to customize the summary spreadsheet layout and automatically creates an Excel summary spreadsheet for all wells analyzed.

Dynamometer Data Sources

XDIAG-D is compatible with all available dynamometer and pump off control hardware including Lufkin Automation, Echometer, Leutert and others. XDIAG-D for Windows is designed to maximize the usefulness of centralized pump off control systems. By allowing you to analyze hundreds of wells in a 24 hour period, it helps you locate problem wells faster than ever before. Also, XDIAG-D's sophisticated expert knowledge allows it to detect problems faster and with more accuracy, especially when used with XSPOC.