

CONFIGURATION EXAMPLES

RIGCHART™



- Multiple time and depth scales with Remarks column
- Customized tracks
- Automatic printout at user selected time intervals

FLOWSHOW™



- Large numeric display for easy reading of critical mud system parameters
- Channels alarmed for quick response
- Includes two screen options with all PVT and Gain-Loss channels

RIGWATCH™



- Over 100 data channels to select from
- Over 15 default views to select from
- Customize your own views as either real-time readings and/or plotted traces
- Additional helpful utilities provided including a pipe tally program

UNIQUE ADVANTAGES

- State of the Art Electronic Sensors
- Quick Connect Sensor Cables
- User Independent Alarms
- Windows-Friendly Software Interface
- Intrinsically Safe System
- Data Archiving every 2 seconds
- Instrumentation High/Low/Averages detailed as daily summary report
- Real-time remote office connectivity
- "End of Well" CD
- myWells.com Internet Access

UNSURPASSED TECHNOLOGY

Driller's Workstation



Quick-Connect Cables



Ultra-Sonic Pit Probes



Proximity Switches



ABOUT EPOCH

Epoch is the fastest growing supplier of Drilling Instrumentation Systems and Wellsite Reporting Software in the world. Our RIGWATCH™ Drilling Instrumentation Services are now used throughout North America, South America and the Middle East to aid the wellsite managers and crews in their efforts to drill safely and efficiently. Our wellsite reporting software packages, PERC™ and RIGREPORT™, are present on many of these same locations and have been adopted as the primary reporting tools by many operators and drilling contractors.

Epoch continues to be the leader in mudlogging services in California and Alaska, while maintaining a significant presence in the Gulf of Mexico and throughout Texas. Our DML 2000 mudlogging software package, when used in tandem with RIGWATCH™ Explorer, provides operators with the ability to monitor the drilling progress of their wells and the geologic evaluation of those wells as never before.

myWells.com brings the data from this array of products together in one place to provide our customers with a browser-based view of their entire well operations.

EPOCH

Route 2, Box 10000
Alice, TX 78332
361-664-9141

5801 Silverado
Anchorage, AK 99518
907-561-2465

3919 Rosedale Highway
Bakersfield, CA 93309-6236
661-328-1995

505 3rd Street S.W.,
Suite 850
Calgary, Alberta T2P 3E6
403-265-3762

6500 West Zero Road
Casper, WY 82604
307-472-1137

1501 Merritt Road
Elk City, OK 73644
405-745-2666

270 Diana Blvd.
Hartshorne, OK 74547
405-745-2666

815 South Turner Road
Hobbs, NM 88240-8419
915-552-7180

515 West Greens Road
Suite 1150
Houston, TX 77067
281-874-9166

14703 FM 1488
Magnolia, TX 77354
281-299-2672

4400 West Admiral Doyle Drive
New Iberia, LA 70560
337-364-2322

902 20th Avenue
Box 3006
Nisku, Alberta T1
780-955-3362

2500 West Oregon Street
Denton, TX 76204-1738
915-552-7180

2527 South Council Road
Oklahoma City, OK 73128
405-745-2666

12047 Hwy 156 North
Tyler, TX 75708
903-577-4446

Box 2396
Highway 2 & 85 North
Williston, ND 58801
701-872-3672

RIGWATCH™

Drilling Instrumentation System



EPOCH

BASIC CONFIGURATIONS

1. RIGCHART™

Electronic Drilling Recorder

- Block Position/ROP
- Hookload/WOB
- RPM
- Torque
- Pump Pressure
- Pump Strokes

2. FLOWSHOW™

(PVT) Mud Monitoring System

- Individual Pit Volumes
- Pit Volume Total (PVT)
- PVT Gain-Loss
- Rate of Gain-Loss
- Flow In (gal/min)
- Return Flow (%)
- Individual Pump Strokes
- Total Strokes
- Accumulated Strokes
- Strokes to Fill

3. RIGWATCH™

Drilling and Mud Monitoring System

- Hole Depth & Bit Tracking
- Hookload/WOB
- Torque
- RPM
- Pump Pressure
- Casing Pressure
- Block Speed
- Bit Time - On Bottom
- Bit Time - Off Bottom
- Ton Miles
- Delta Off Bottom Pressure
- Swab-Surge
- Stands in Hole
- Stands Out of Hole
- Individual Pit Volumes
- Pit Volume Total (PVT)
- PVT Gain-Loss
- Rate of Gain-Loss
- Flow In (gal/min)
- Return Flow (%)
- Individual Pump Strokes
- Total Strokes
- Accumulated Strokes
- Strokes to Fill

Additional Tools

- Integrated Pipe Tally
- Pill Tracking
- Hydraulics
- Dynamic Engineering Calculations

DATA ACCESS:

1 Driller's Workstation:

- Touch Screen Interface
- Daylight readable, "high bright" display
- Easy navigation for the driller with simple menus & large buttons
- Integrated alarm horn
- Certified for Class 1, Div. 1 or Div. 2 environments

2 DogHouse Display:

- Replaces mechanical drilling recorder functionality
- Touch screen interface and environmentally sealed keyboard/mouse
- Enables driller to complete RigReport electronic tour sheet
- Certified for Class 1, Div. 1 or Div. 2 environments

3 Company Man & Toolpusher Workstations:

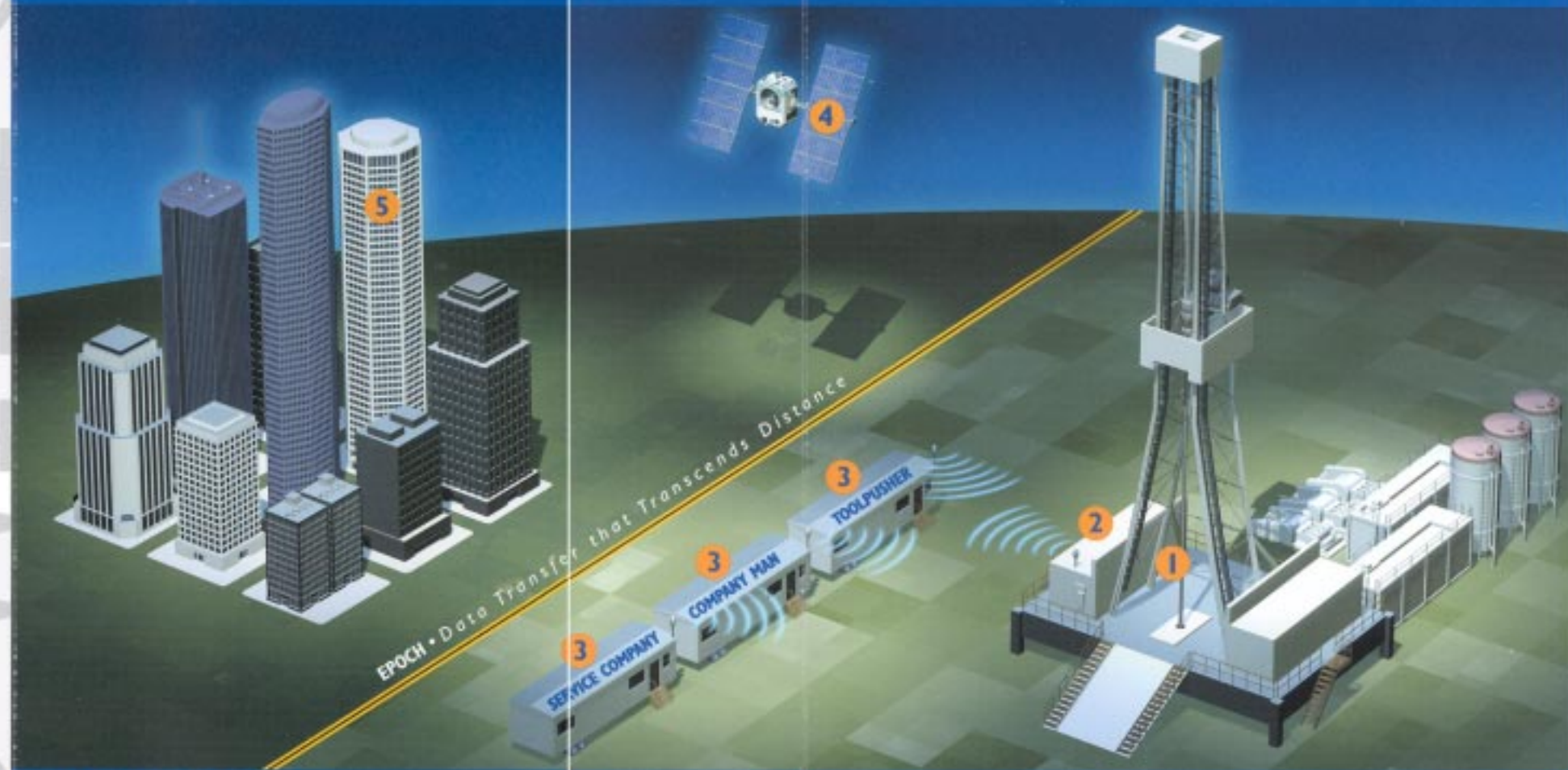
- Independent control & monitoring of all RIGWATCH parameters
- Continuous, 24hr/day, archiving of all critical drilling & tripping functions
- Access to tour sheet & morning report software

4 Communications:

- Satellite dish and CDPD cellular modem compatibilities
- Data transfer as batch, on-demand or real-time processes
- Data interchange available between direct sites, or available as Internet data portals
- Packaged services available to provide voice, fax and data

5 Internet / Local Network:

- Database storage of all instrumentation, mudlogging and morning report information
- Valuable Cost and Time tracking records available
- Robust engineering graphics with drilling logs for surveillance as well as well planning purposes
- Customer administered security and access levels



ADD-ON COMPONENTS:

- **Gas Detector**- Incredibly accurate infra-red stand-alone gas detection service that is virtually maintenance free over long periods of use.
- **ROP/Gas Log**- Total gas is logged to depth and plotted with rate-of-penetration for use in correlating with offset wells.
- **Rolling Float Meter**- This next generation sensor represents one of the best tools in the industry for early kick detection. Output includes both mud flow rate and velocity.
- **Mud Density Sensor**- Epoch's mud density sensor is a breakthrough in accuracy and repeatability. Measurements are continuously temperature compensated.
- **Morning Report Software**- Windows-based system used to track all your drilling, completion & workover morning report data on a daily basis. Over 80 reports & plots available as well as your own custom output.
- **Communications**- Epoch provides many options to communicate from the well to the office:
 - ☐ Direct modem
 - ☐ CDPD cellular modem technology
 - ☐ Internet
 - ☐ Satellites

All transmissions are encrypted in addition to requiring user ID and password security.

- **myWells.com**- One-stop website location for viewing all wellsite information, including daily reports and RIGWATCH™ Explorer drilling and mudlog presentations.