



Geo-Vista

Cement Bond Log (CBL)

PI Data Acquisition System (PIDAS)

Digital Data Transfer/Gamma/Orientation Tool (TGO)

Ultrasonic Scan Imaging Tool-G (USI-G)

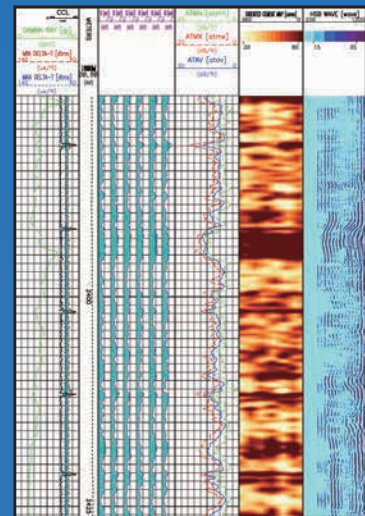
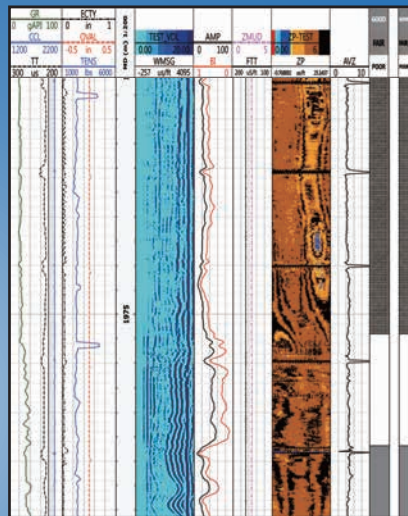
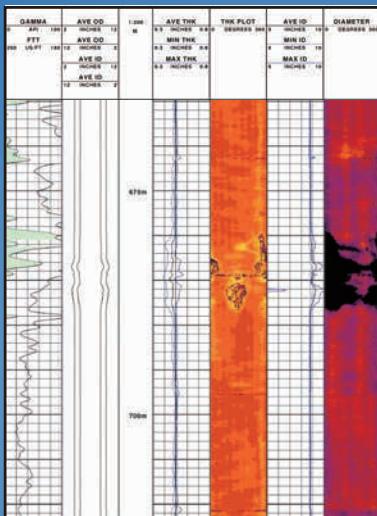
Hexapod Segmented Bond Tool (HSB)

Radial Cement Bond Logging System (RadialCBL)

Acoustic & Dodeca Segmented Bond Tool-D (ACT-D)

Tuning Fork Fluid Density Tool-ComboLog (TFD-C)

PI View Processing and Analysis Software



www.RenheSun.com
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Features

- The system records the data including the original signal of the instrument, calibrated engineering value and the processed data. Because the original signal of the instrument is recorded, the logging data could be reprocessed by different parameters if required.
- All of the calibration value and verification value could be displayed by the operator, therefore, it is easy to confirm: the value of the super-value will flash, causing the operator's attention.
- Repeated curves can be real-time displayed on the main logging curves to verify the repeatability of the curves.
- Real-time plotting of cross-plot graphs allows the operator to verify the correctness of the logging response which is based on the expected model.
- Real-time environmental correction eliminates the subjective assessment of the operator's quality control process.
- Real-time similarity correction verifies the integrity of the acoustic waveform data.
- Using personnel safety and data protection systems.
- Reduces wellsite operating time and ensure system reliability by using advanced computer technology and redundant design simplify data acquisition and processing.

* Telemetry :




MGTS
SGTS
RGTS

Wireline Perforating Panel (WPP)

Features

- Wide voltage input (100 Vac-240 Vac)
- With safety switch
- PFC power supply is up to 150 V, and perforating and coring power supply adopts the mode of external DC power supply
- The polarity of perforating and coring voltage is adjustable

Introduction

The  PI Data Acquisition System ( PIDAS) is designed for data acquisition and processing in combination with Open-hole and Cased Hole tool. This  PIDAS is based on portable notebook as a host and remote transmission system with high-speed data communication.



Specifications

Physical Dimensions & Weights

Height	29.13 in. (740 mm)
Depth	29.33 in. (745 mm)
Width	27.56 in. (700 mm)
Shipping Weight	160.9 lbs. (73 kg)

Environmental Characteristics

Operating Temperature	0°C~+50°C
Storage Temperature	-20°C~+75°C
Relative Humidity	< 95%
Vibration (3D)	3 g 10-60 Hz (When not working)
Shock (3D)	3 g 10-60 Hz (When not working)
System Power Supply	85-265 Vac, 43 Hz-70 Hz
Downhole Instrument Power Supply	
AC Power	0-720 Vac, 2 A, 1440 W
	0-1440 Vac, 1 A, 1440 W
DC Power	0-1000 Vdc, 2 A, 2000 W

System Composition

Portable surface logging system is divided into: data acquisition system, power supply system and other major parts. The functions of each part is as follows:


1. Surface Data Acquisition System: the computer is the core, controlled by several loaded software, to complete a variety of logging operations. Such as the processing, recording, display, quality control and fast processing and interpretation of logging data on the wellsite. Including: PC, Wireline Acquisition Panel (WAP).
2. Power Supply System provides power to the surface system and downhole equipment. Currently, logging power supply system usually use vehicle generators or wellsite power.
3. Hoist Display Unit (HDU) is the display unit for the Surface System. Equipped with a color LCD touch screen display, the unit provides a continuous display of depth information. In addition, HDU also displays other variables monitored and provides a visual and audible alarm when any of these variables are outside a preset range.

Features

- Used for a variety of downhole instruments for openhole and cased hole with different modules.
 - PI Data Acquisition System (PIDAS)
 - Post-processing & presentation management (FileView)
 - PI Wireline Formation Sampling and Testing System (PIWST)
 - PI Formation Coring Software (PIWST-FCT)
 - PI Mechanical Sidewall Coring Software (PIWST-MSD)
 - PI Reservoir Characterization Tester Software (PIWST-RCT)
 - PI Formation Test, Fluid Analysis, Pump-Thru Software (PIWST-FFP)
 - PI Production and Engineering Logging System (PIPES)
 - PI Down Hole Camera Software (PIPES-DHC)
 - PI Free Point Indicator Software (PIPES-FPI)
 - PI Mechanical Downhole Cutter (PIPES-MDC)
 - PI Rotary Magnet Ranging Software (PIPES-RMR)
 - PI Gyroscope Orientation Software (PIPES-GOT)
 - PI Downhole Casing & Tubing Tractor Software (PIPES-CTT)
 - PI Downhole Hydraulic Tractor Software (PIPES-DHT)
 - PI MFI Logging System (PIPES-MFI)
 - PI Memory Acquisition and Processing Software (PIPES-MAP)
 - PI Vertical Seismic Profile System (PIVSP)
 - Microseismic monitoring data processing and interpretation software (MMDPI)
 - PI Logging While Drilling System (PILWD)
 - PI Rotary Steerable Software
 - PI LWD Data Presentation Software
 - PI LWD Remote Monitoring Software
- Using multi-window to display nuclear logging equipment which is obtained by the spectrum, acoustic and imaging instruments. These windows can be controlled by the user, in order to display the original data or the processed data, so that, the operator can control the quality of the real-time logging data.
- Provides Multi-tasking and distributed processing at the wellsite, improving log data integrity and wellsite efficiency.


PIDAS Software Introduction

The PIDASView software contains two parts:  PIDAS software and FileView software. Each part can run independently.

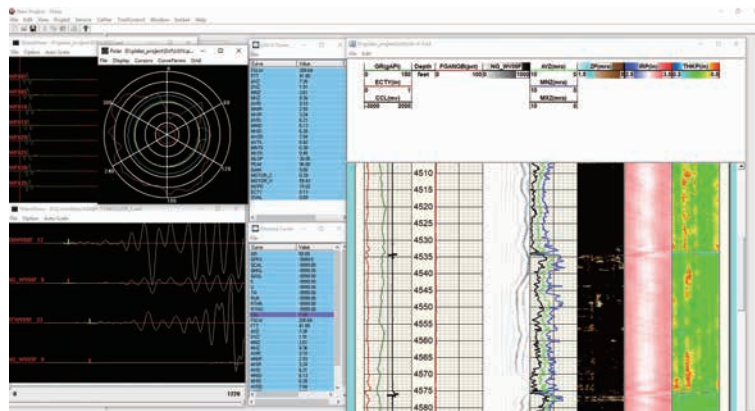
The  PIDAS software is a control acquisition processing system based on WINDOWS with multi-task & multi-user, and using a large number of modern image processing technology.

The control acquisition processing system is used to acquire and process various signals of the downhole logging instrument detector and to control other functions of the downhole instrument and converts the acquired signals to engineering values and provides the logging data required by the user.

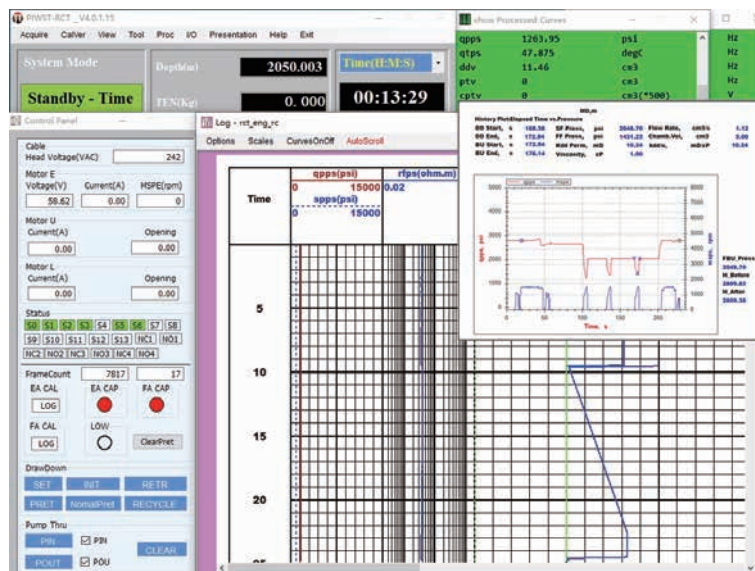
By equipment array, imaging and large information, real-time logging data acquisition, control and processing achieve multi-parameter acquisition and multi-task time-sharing processing.

 PIDAS software can be used for a variety of downhole instruments for openhole and cased hole with different modules.

The FileView is a post-processing and presentation software. It can support the basic functions, such as the heading, toolstring, well sketch, calibration, parameters, log plot, data convert, etc. Also, it can provide the data analysis and processing, 2D, 3D, cross plot, compose plot, etc. advanced functions.



USI-G/CBL/DL service by PI Data Acquisition System module



Pressure Test and Sampling service by PI Reservoir Characterization Tester Software PIWST-RCT module

Features

- Equipped with a safety switch to ensure safe operation.
- Power supply to GR and CCL instruments, the voltage is up to 160 Vdc.
- Adjust the polarity of the power supply
- Both hands must be used simultaneously for perforation and coring to ensure the safety of the operation.
- Using an external DC power supply, the perforation voltage and current no limited by this panel.
- With BYPASS mode, connected with any system.
- Perforation and coring functions, no more panels required.
- Provide a powerless CCL visual indication and signal conditioning

Introduction

Wireline Perforating Panel (WPP) is used for Perforating Control, Coring Control, PFC (Perforating Formation Correlation) power supply for Gamma Ray and CCL, Powerless CCL. It is the first panel connected to the cable drums, and suitable for 7-Conductor and Mono-conductor cable.



Specifications

Physical Specifications

Length	17.7.00 in. (45 cm)
Width	19 in. (48.26 cm)
Height	5.3 in. (13.35 cm)
Weight	22.05 lbs. (10 kg)

Electrical Parameters

AC Input	100-265 Vac / 47-63 Hz
PFC Output Voltage	0-160 Vdc

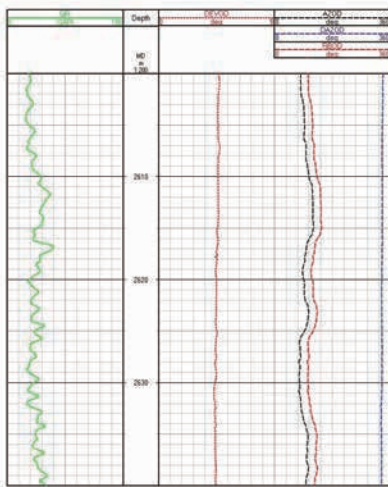
Environmental Specifications

Operating Temperature Range	32°F (0°C) to 104°F (+40°C)
Storage Temperature Range	-4°F (-20°C) to 158°F (+70°C)
Maximum Humidity	95%



Applications

- Data control
- Lithology identification
- Measuring bed thickness
- Borehole orientation



Introduction

This tool is a data transmission tool. Its main function is to attain data communication between downhole tool string and surface system. It transmits temperature/tension/mud resistivity data to surface system at the same time. The data the tool is capable of acquiring are the following: three orthogonal orientation data, digital natural gamma-ray.

Specifications

Maximum Temperature	350°F (175°C)
Max Pressure	20,000 psi (137.9 MPa)
Minimum Hole Diameter	4.75 in. (120.7 mm)
Tool Diameter	3.625 in. (92 mm)
Make-up Length	9 ft.-0.27 in. (2.75 m)
Shipping Length	10 ft.-5.6 in. (3.19 m)
Weight	132.3 lbs. (60 kg)
Power Requirements	180 Vac/80 mA (cablehead)
Maximum Tensile Force	38,000 lbs. (17,237 kg)
Maximum Compressive Force	78,000 lbs. (35,381 kg)
Maximum Logging Speed	30 ft./min (9 m/min)
Maximum Measureable	Gamma Ray 2500 API
Accuracy	GR: ±3% of measured value
Gamma Ray Energy Range	0.06 to 3.5 MeV
Measure Point	1 ft.-7.2 in. (490 mm) from bottom of sub
Orientation	
Sensor Accuracy	Azimuth ± 1.5 degrees Deviation ± 0.25 degrees
Drift Azimuth	Deviation range 9° to 90° DAZ ± 1.5 degrees Deviation range 5° to 9° DAZ ± 6.0 degrees
Measure Point	Deviation range 1° to 5° DAZ ± 10.0 degrees 4 ft.-6.8 in. (1392 mm) from bottom of sub





Applications

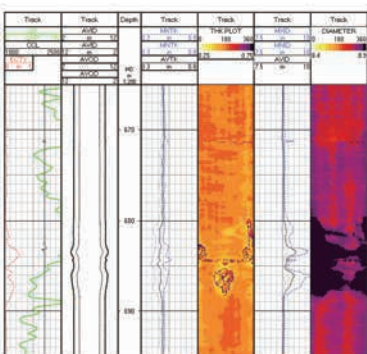
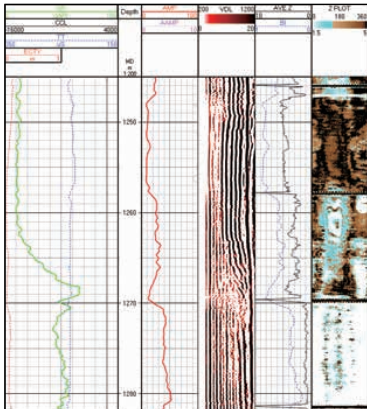
- Ultrasonic Cement Evaluation/ Imaging
- Casing Corrosion Inspection (both Thickness and Diameter).

Benefits

- Simultaneous Cement Evaluation & Casing Inspection
- Combinable with ACT-D tool or DSB for reduced rigtime

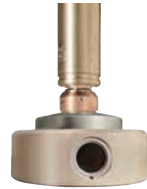
Features

- Real-Time Fluid Compensation
- Optional scanner assembly with inline centralizer for slim hole



Introduction

USI-G provides a wealth of information about well. In cased hole, ultrasonic pipe inspection and cement evaluation can be obtained simultaneously. Operating over a wide range of downhole environments, the USI-G offers a full 360° profile of the imaging that can be presented in a variety of two-dimensional and three-dimensional formats. Powerful, yet user friendly imaging analysis software is available to process images, histograms, and curve-type data from PIDASView.



Adjustable Head
Up to 13-3/8" Casing



Cement Bond Mode
Casing Corrosion Mode



Imaging Inspection
Mode



Up to 13-3/8" Casing

Specifications

Maximum Temperature	350°F (175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Length	14 ft.-6.85 in. (4.52 m)
	16 ft.-11.9 in. (5.18 m) with slim centralizer for SA
Weight	278 lbs. (126 kg)
	310.8 lbs. (141 kg) with slim centralizer for SA
Diameter	3.625 in. (92 mm)
Power Requirements	180 Vac, 220 mA
Motor Power	150 Vdc, <1.5 A

* The scanner assembly with slim inline roller centralizer was used for 5 in.-7 in. casing.

Cement Bond & Casing Corrosion Mode

Firing Rate	36, 45, 60, 72, 90 shots/scan (Optional)
Vertical Scan Rate	4 scans/ft. at 3.0 in. sampling
Vertical Sampling(Software)	6.0, 3.0, or 1.0 in.
Logging Speed	60, 30 or 10 ft./min (Depending on sampling rate)
Principle	Ultrasonic Pulse Echo and time of flight
Primary Curves	Reflected Amplitude, Radius Acoustic Impedance, Casing Wall Thickness
Secondary Curves	Relative Bearing, Deviation, Fluid TT, Compressive Strength, Mud Impedance

Imaging Inspection Mode

Firing Rate	180 shots/scan
Vertical Scan Rate	40 scans/ft. at 3.0 in. sampling
Vertical Sampling(Software)	0.3 in.
Logging Speed	21 ft./min
Principle	Ultrasonic Pulse Echo and time of flight
Primary Curves	Reflected Amplitude, Travelling Time
Secondary Curves	Relative Bearing, Deviation, Fluid TT, Radius
Minimum Diameter Hole	4.276 in. (108 mm)
Maximum Diameter Hole	13 in. (330 mm)
Wireline Requirements	7-Conductor Cable
Transducer	250 kHz, 350 kHz, 450 kHz, flat type 380 kHz, focal type 300 kHz, mud transducer

Head Assembly

Fixed	3-1/8 in., 3-5/8 in., 4-3/8 in., 5-5/8 in., 7 in. dia.
Adjustable	3 in.-5.25 in. effective head radius



Optional for
5 in.-7 in. Casing

Applications

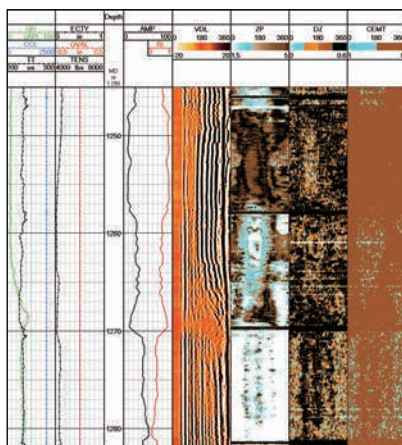
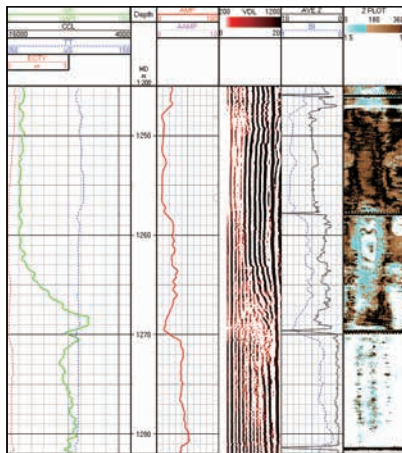
- Casing Inspection (both Thickness and Diameter)
- Ultrasonic Cement Evaluation/ Imaging

Benefits

- Reveals bonding and image channels in the cement sheath directly outside the casing

Features

- Measures casing properties such as thickness, internal, and external diameters



Introduction

The USI-S tool provides high-resolution cement and casing evaluation images oriented with respect to high side-low side of the wellbore, enabling identification of both internal and external casing wear, erosion, corrosion, or mechanical damage.

USI-S provides the same capabilities as the USI-V/USI-F/USI-G, but with a smaller diameter tool, the cement evaluation and casing inspection service can now be acquired in 4-1/2 in. to 13-3/8 in. casing.

USI-S tool consists of 2 sections: electronic assembly and scanner assembly. USI-S tool is MGTS interface type tool.

Specifications

Maximum Temperature	350°F (175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Tool Diameter	2.875 in. (73 mm)
Power Supply	180 Vdc, 200 mA

Cement Bond & Casing Corrosion Mode

Firing Rate	36, 45, 60, 72, 90 shots/scan (Optional)
Vertical Scan Rate	4 scans/ft. at 3.0 in. sampling
Vertical Sampling(Software)	6.0, 3.0, or 1.0 in.
Logging Speed	60, 30 or 10 ft./min (Depending on sampling rate)
Principle	Ultrasonic Pulse Echo and time of flight
Primary Curves	Reflected Amplitude, Radius Acoustic Impedance, Casing Wall Thickness
Secondary Curves	Relative Bearing, Deviation, Fluid TT, Compressive Strength, Mud Impedance

Imaging Inspection Mode

Firing Rate	180 shots/scan
Vertical Scan Rate	40 scans/ft. at 3.0 in. sampling
Vertical Sampling(Software)	0.3 in.
Logging Speed	21 ft./min
Principle	Ultrasonic Pulse Echo and time of flight
Primary Curves	Reflected Amplitude, Travelling Time
Secondary Curves	Relative Bearing, Deviation, Fluid TT, Radius
Minimum Diameter Hole	3.75 in. (95 mm)
Maximum Diameter Hole	13 in. (330 mm)
Wireline Requirements	7-Conductor Cable
Transducer	250 kHz, 350 kHz, 450 kHz, flat type 380 kHz, focal type 300 kHz, mud transducer

Combinability	MGTS type tool
Motor Speed	2-5 rps (Adjustable)
Centralizer	Inline centralizer
Head Assembly	
Fixed	3-1/8 in., 3-5/8 in., 4-3/8 in., 5-5/8 in., 7 in. dia.
Adjustable	3 in.-5.25 in. effective head radius



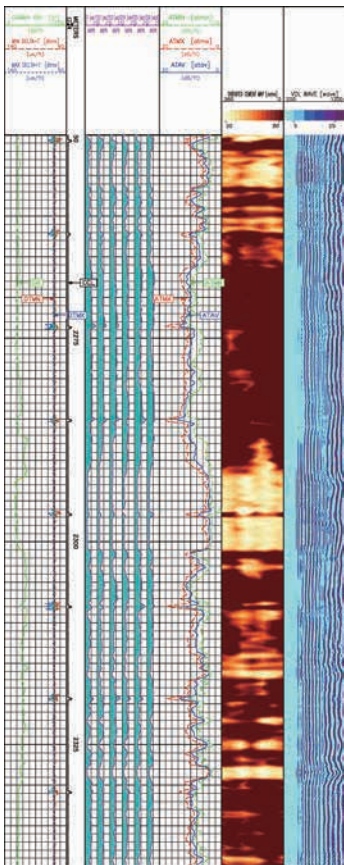


Applications

- Evaluate cement bond quality in six sectors
- Cased-hole wells
- Continuous cement map
- Advanced channel analysis

Features & Benefits

- Evaluates multiple-size casing strings in one logging pass
- Through tubing to log the exposed casing section
- Provides qualitative analysis in light cement
- Provides accurate measurement, even in fast formations, heavy mud, and thick wall casing
- Combinable with USI-V/USI-F/USI-G
- Combinable with Tractor in high deviated and horizontal wells



Introduction

The HSB is a unique cement bond logging tool. It can find and define channels in the cement annulus which could result in a poor hydraulic seal. Conversely, the HSB can reliably find zones of uniform bonding over only a few feet of casing. Under conditions where a short bonded interval produces an adequate hydraulic seal, unnecessary squeeze jobs can be avoided.

Specifications

Maximum Temperature	350°F (175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Minimum Casing ID.	4.0 in. ID (101.6 mm)
Maximum Casing ID.	15.5 in. ID (393.7 mm)
Tool Diameter	3.38 in. (85.7 mm)
Make-up Length	
Pad section	17 ft.-3.87 in. (5.28 m)
VDL section	7 ft.-8.13 in. (2.34 m)
Shipping Length	
Pad section	19 ft. (5.79 m)
VDL section	9 ft.-3.81 in. (2.84 m)
Weight	
Pad section	240 lbs. (108 kg)
VDL section	108 lbs. (49 kg)
Maximum Logging Speed	
Auxiliary Data Mode	Limited only by GR resolution required
Normal Mode	35 ft./min (10.7 m/min)
Measurement Range	0-22 dB/ft. Compensated attenuation
Absolute Accuracy	±1.0 dB/ft. or 10% of log value
Repeatability	±1.0 dB/ft. or 10% of log value
Vertical Resolution	0.25 ft. (76.2 mm) Basic measurement Normal Presentation presents data averaged over 3 ft. (91 cm)
Radial Resolution	60 degrees
Depth of Investigation	2 in. (50.8 mm)
Power Requirements	150 Vdc
Wireline Requirements	Single conductor
Detector Type	
VDL	20 kHz Piezo-electric cylinder
Pads	100 kHz Piezo-electric Stack
Pad Force	50 lbs. (22.7 kg)

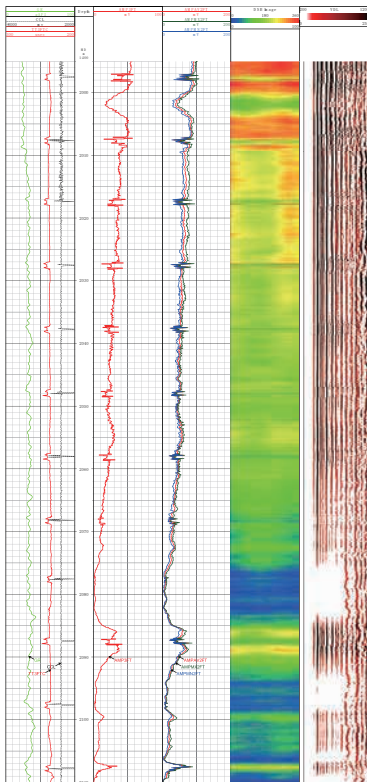


Applications

- Evaluation of cement bond quality and integrity
- Location of free-pipe and cement-top

Features

- 360° cement bond imaging view
- RBM could combine with a pipe scraper, logging while pipe cleaning under thru-pipe logging memory mode
- OSB & DSB could combine with USI-V/USI-F/USI-G
- Combine with Multi-Finger Imaging Tool (MFI-24 /MFI-40/ MFI-60)



Calibration Tank

Introduction

The Radial Cement Bond Tools provide the operator with an accurate and economic means of inspecting the quality of the cement bond to casing and formation.

The tools evaluate the cement bond quality and integrity to both casing and formation by providing the measurements of the cement bond amplitude (CBL) through the near receiver (3 feet), and variable density log (VDL) through the far receiver (5 feet). Depending on tool size, the tool has 6/8/12 segmented receivers. These radial receivers are used to provide a high resolution cement bond imaging view.

Specifications

	Radial Bond Logging with Memory Mode (RBM) (6 segments)		Octopod Segmented Bond Tool (OSB) (8 segments)		Dodeca Segmented Bond Tool (DSB) (12 segments)
Pressure (Maximum)	20,000 psi (140 MPa)		20,000 psi * (140 MPa)		20,000 psi * (140 MPa)
Temperature (Maximum)	350°F/175°C	350°F/175°C*	350°F/175°C*		350°F/175°C*
Diameter	1.78 in. (45 mm)	2.13 in. (54 mm)	2.5 in. (63 mm)	2.88 in. (73 mm)	3.50 in. (89 mm)
Length	9.93 ft. (3.03 m)		11.48 ft. (3.5 m)		13.12 ft. (4.00 m)
Weight	40 lbs. (18.1 kg)		110 lbs. (50 kg)		231.48 lbs. (105 kg)
Transducer Type					
Receiver (s)					
Bandwidth	18-32 kHz		18-24 kHz		18-24 kHz
Receiver (3 ft.)	6 Segments Synthesized		Monopole		Monopole
Receiver (5 ft.)	Monopole		Monopole		Monopole
Receiver (2 ft.)			8 segments		12 segments
Transmitter (s)					
Type	Piezoelectric (Monopole)				
Bandwidth	18-22 kHz		18-24 kHz		18-24 kHz
Number	1		1		1
Recommended Casing Range					
Minimum Casing OD	2.875 in. (73.0 mm)		4.00 in. (101.6 mm)		5.00 in. (127 mm)
Maximum Casing OD	7.5 in. (190.5 mm)	10 in. (254 mm)	10.75 in. (273 mm)	13.375 in. (340 mm)	13.375 in. (340 mm)
Data Acquisition					
Maximum Logging Speed	100 ft./min (30 m/min)**				
Tool Positioning	Centralized				
Gamma Ray	Optional Integrated				
CCL	Optional Integrated				
Temperature	Optional Integrated				
Power Requirements					
Input Voltage	150 to 220 Vdc		150 Vdc/180 Vac***		150 Vdc/180 Vac***
Input Current Required	50 mA		90 mA		80 to 90 mA

* 25,000 psi (172.4 MPa) / 400°F (204°C) is optional.

** The maximum speed is 30 ft./min (9 m/min) if connect with USI-V/USI-F/USI-G.

*** Mono-conductor cable is DC powered, multi-conductor cable is AC powered.



DSB

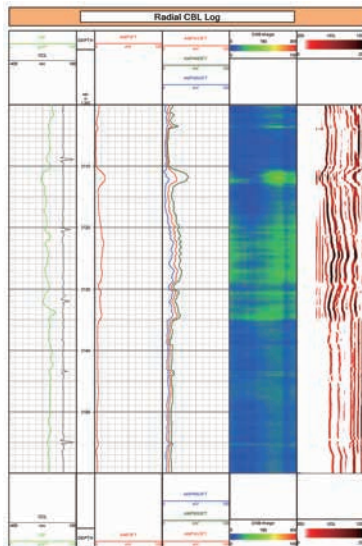
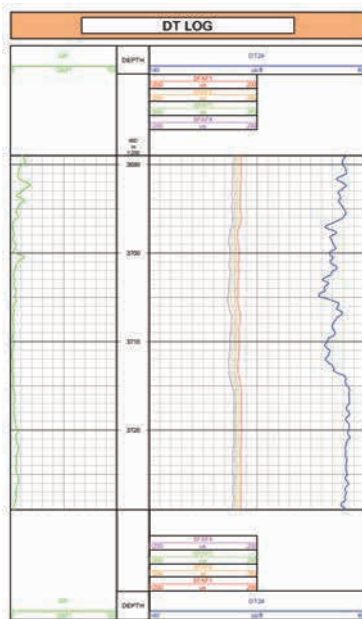


Applications

- Compressional slowness Δt
- Cement Bond Logging (CBL) and Variable density logging (VDL)

Features

- 360° cement bond imaging view
- Combine with conventional logging tools in openhole
- DT log and RadialCBL Log can be completed in one run.



Introduction

ACT-D completes DT log and RadialCBL Log within one run. And it provides high quality compressional Δt measurement.

The tool has 2 independent transmitting sensors, 4 receiving sensors, and one of receivers has a 12-segment. The radial receiver, located 3 feet and 5 feet from the transmitters is constructed of a 12-sector radial receiver. Each sector provides bond data covering a 30 degree section of casing. It was developed to provide the Radial Cement Bond Logging (RadialCBL) which contains the radial cement map, 3 ft. AMP and 5 ft. VDL.

Specifications

Maximum Temperature	350°F (175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Tool Diameter	3.5 in. (89 mm)
Minimum Hole Size	4.50 in. (114 mm)
Make-up Length	13 ft.-10.74 in. (4.24 m)
Weight	240 lbs (109 kg)
Maximum Logging Speed	60 ft./min (18 m/min)
Absolute Accuracy	+/- 0.5 microseconds
Repeatability	+/- 1 %
Vertical Resolution	0.5 ft. (15.24 cm) Basic measurement
Transducer Type	
Receiver (s)	
Type	Piezoelectric (monopole)
Bandwidth	Wideband (1-25 kHz)
Number	3 (Monopole) +1 (12 Segments)
Spacing	6.0 in. (152 mm)
Offset	3.0 ft. (0.914 m) min. 6.5 ft. (1.98 m) max.
Transmitter (s)	
Type	Piezoelectric (monopole)
Bandwidth	Broadband (2-18 kHz)
Number	2
Spacing	2 ft. (0.6 m)
Wireline Requirements	7-Conductor Cable
Power Requirements	180 Vac @ 160 mA
Maximum Tensile Strength	17,000 lbs.
Maximum Compressional Strength	4,000 lbs.





Tuning Fork Fluid Density Tool-ComboLog *Geo-Vista* (TFD-C)

Applications

- Measurements dynamic and static for fluid identification
- Horizontal and highly deviated well
- High fluid flow rates

Benefits

- No chemical radioactive source, reduces the environmental pollution to the formation and reduces the operation risk.
- Compared with the pressure difference density, TFD-C is not affected by the well inclination and the fluid flow rate in the well, and the operating environment is wider. The fluid density can be measured in motion and combined with conventional logging tools.
- Advanced technology, high measurement accuracy, high stability and simple operation.
- TTR measures the temperature and resistivity of the mud, but the viscosity and density data is missing. By TFD-C, operator could complete the mud data, that provides the possibility to better than other similar tools.

Features

- TFD-C is used under PIDAS System.
- TFD-C could combined with conventional wireline logging tools.

Introduction

TFD-C measures the fluid density and viscosity data in the open hole. TFD-C is a Non-chemical radioactive source tool which provides fluid density measurement. Mud parameters is necessary to complete logging operations for USI-V/USI-F/USI-G and other PIDAS tools.

Specifications

Maximum Temperature	350°F (175°C)
Maximum Pressure	20,000 psi (138 MPa)
Make-up Length	57.7 in. (1.21 m)
Shipping Length	66.2 in. (1.68 m)
Weight	92.6 lbs. (42 kg)
Diameter	3.50 in. (88.9 mm)
Logging Speed (typical):	
Standard Resolution	4 points/ft. (0.0762 m)
Vertical Resolution	optional default 2.5 in. (6.35 cm)
Measure Point	14.6 in. (37.1 cm)
Density measurement:	
Measurement Range	0.0 g/cc to 1.6 g/cc
Accuracy/Repeatability	±0.03 g/cc
Resolution	0.01 g/cc
Viscosity Measurement:	
Measurement Range	1.0 cS to 50 cS
Response Time	≤2 seconds
Power Requirements	180 Vac, 85 mA
Wireline Requirements	7-Conductor Cable (30 kft max length)
Electrical/Telemetry	
Acquisition Cycle	Fixed sampling interval (times/500 ms)
Send Data Cycle	Fixed sampling interval (times/500 ms)
	Send data Data rate
Data Rate	(subset 0/M2) 20.83 Kb/s
Hole Deviation	Vertical to horizontal
Minimum Tool String	TGO+TFD-C
Combination	GTS Compatible
Tensile Strength	17,000 lbs. (7,684 kgf)
Compressional Strength	4,000 lbs. (1,808 kgf)

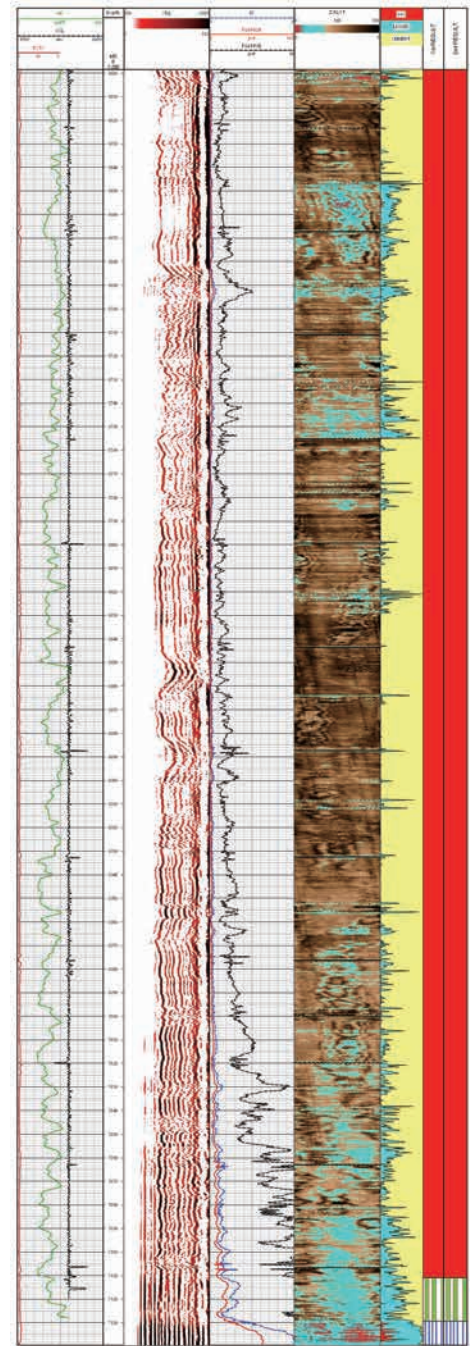
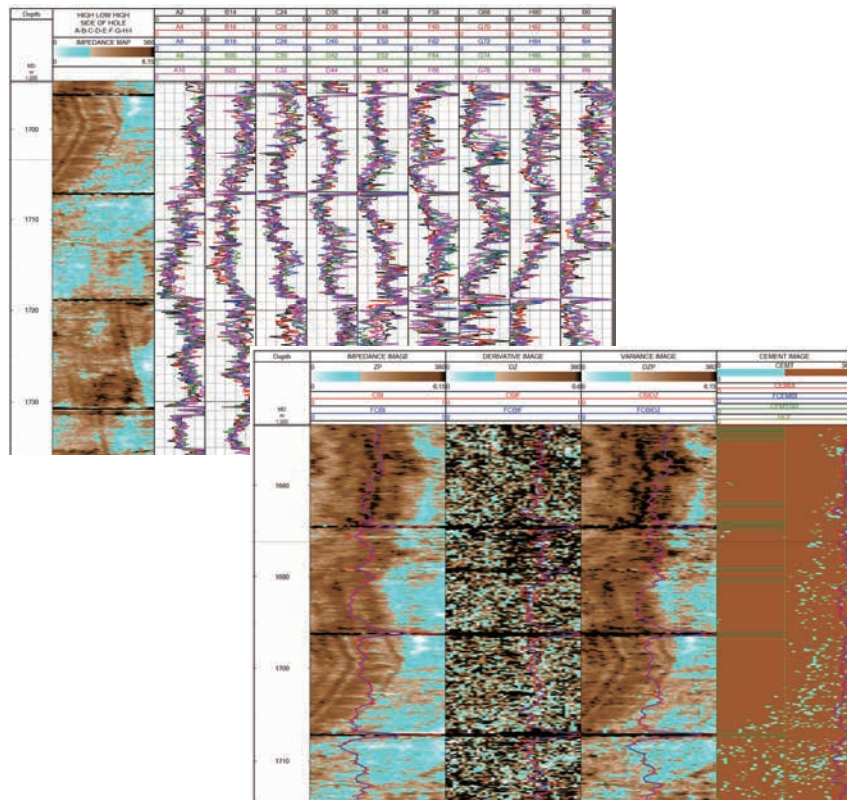
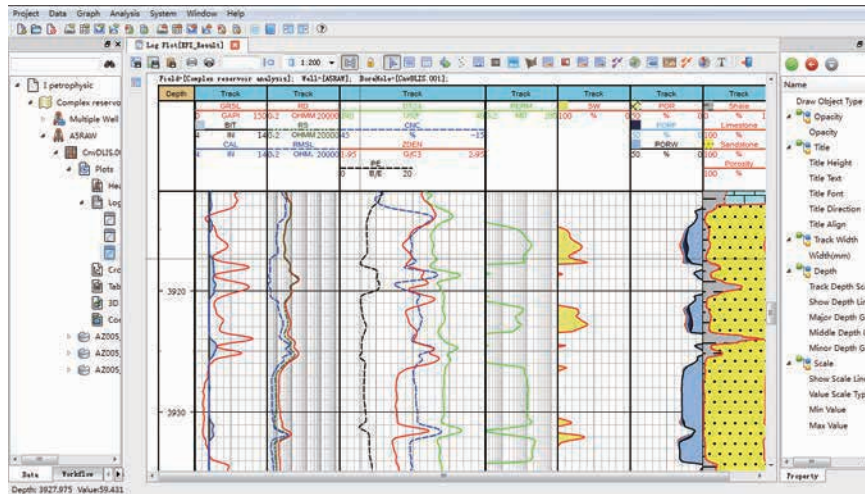


Introduction

PIView (Petroleum Integrate View) is logging data processing and analysis software platform.

PIView Include: logging data import, data management, cross-plot, environmental correction, petrophysical analysis, mineral content calculate, reservoir fluid analysis, petrographic analysis, data statistical analysis and other functions.

PIView can processing various companies conventional logging data, imaging logging data, multi-array/acoustic/ultrasonic cement evaluation logging data, wireline formation test, core analysis, C/O, production logging data.



Introduction

The Super Centralizer Sub-3 (SCS-3) provides force for downhole tools to stay centered inside casing wells, the staggered roller design eliminates centralizer sticking and jumping at casing couplings. Specially, SCS-3 is placed above the rotating head of the USI-V/USI-F/USI-G tool to provide a good centralization, and it also provides maximum centralizing force and minimal re-entry force.

Specifications

Make-up Length	1ft.-10.44 in. (570 mm)
Weight	48.50 lbs (22 kg)
Tool diameter	5.35 in. (136 mm)
Minimum Hole Diameter	6.0 in. (152.4 mm)
Maximum Hole Diameter	9.5 in. (241.3 mm) 12.5 in. (317.5mm) (Optional Extended Size)




Hexapod Roller In-Line Centralizer (HRC)

Introduction

The HRC is a in-line roller centralizer for casing well. It provides excellent centralization of tool strings in vertical or horizontal cased wells. It provides 32 conductors feed through for tools power and communication.

Specifications

Maximum Temperature	350°F(175°C)
Maximum Pressure	20,000 psi (140 MPa)
Make-up Length	2 ft.-6.1 in. (0.77 m)
Shipping Length	3 ft.-11.6 in. (1.21 m)
Weight	58 lbs. (26 kg)
Tool diameter	3.38 in. (86 mm) 4.28 in. (108 mm) roller section
Number of Arms	6
Minimum Hole Diameter	4.5 in. (114 mm)
Maximum Hole Diameter	7.5 in. (190.5 mm)
Feed Through	32 conductors
Maximum Tensile Strength	78,000 lbs. (35,380 kg)
Maximum Compressive Strength	50,000 lbs. (22,680 kg)





Introduction

The TCS-H is a in-line centralizer, it can be used in casing well job or openhole well job.

Specifications

Maximum Temperature	350°F(175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Weight	99.2 lbs. (45 kg)
Make-up Length	66.27 in. (1683 mm)
Diameter	20.4 in. (518 mm)
Minimum Hole Diameter	4.0 in. (102 mm)
Maximum Hole Diameter	12.715 in. (323 mm)
Maximum Tensile Strength	78,000 lbs. (35,380 kg)
Maximum Compressive Strength	37,000 lbs. (16,780 kg)



Introduction

The RCS is in-line roller centralizer for casing well. RCS provides excellent centralized presentation in vertical or horizontal wells.

Specifications

Maximum Temperature	350°F(175°C)
Maximum Pressure	20,000 psi (137.9 MPa)
Weight	159.8 lbs (72.5 kg)
Make-up Length	66.27 in. (1683 mm)
Tool Diameter	3.625 in. (92 mm)
	3.86 in. (98 mm) Roller section
Minimum Hole Diameter	4.276 in. (128 mm)
Maximum Hole Diameter	9.5in. (241 mm)
Maximum Tensile Strength	78,000 lbs. (35,380 kg)
Maximum Compressive Strength	50,000 lbs. (22,680 kg)



Introduction

The SCS-2 is used in open hole and cased wells that require centered logging. Applicable instrument outer diameter is 3.625in (92 mm).

Specifications

Overbody:

Length	2 ft. - 3 in. (0.68 mm)
Inside diameter	3.58 in. (91 mm)
Minimum Hole Diameter	5.5 in. (139.7 mm)
Maximum Hole Diameter	20 in. /13.7 in. / 12 in. (500 mm / 350 mm / 304.8 mm)



Introduction

The gemoco are powerful centralizers to keep tool string centralized in the borehole even in deviated wells.

Specifications

Hole size	7 in.-9.625 in. casing
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