

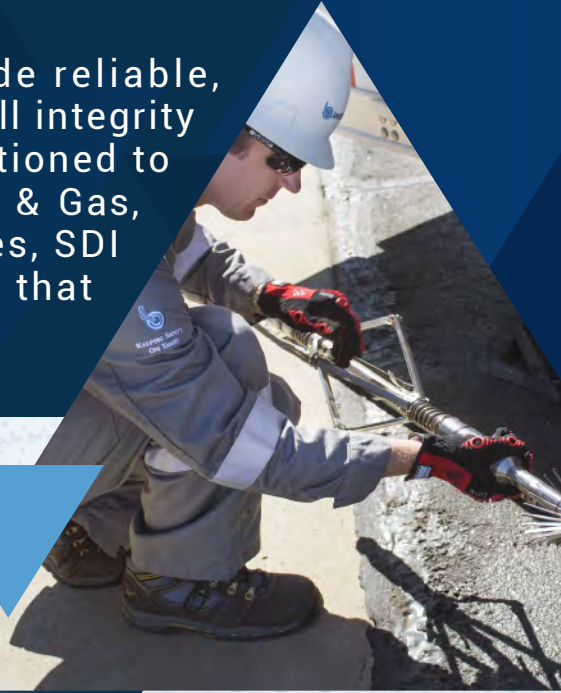
# CASED HOLE SERVICES



[WWW.SCIENTIFICDRILLING.COM/CHS](http://WWW.SCIENTIFICDRILLING.COM/CHS)

# SCIENTIFIC DRILLING

Scientific Drilling's Cased Hole Services provide reliable, fit-for-purpose and cost effective solutions for well integrity and production logging challenges. Globally positioned to support a wide range of markets including Oil & Gas, Unconventional, Geothermal and Mining Industries, SDI is committed to delivering a customer experience that makes it **Easy** to do **Business**.



# THE **ULTIMATE PARTNER** IN CASED HOLE EVALUATION

- + Directional Drilling
- + MWD/LWD Services
- + Magnetic Ranging
- + Drilling Motor Services
- + Wellbore Surveying
- + Survey Management
- + Rotary Steerable Services
- + Well Planning
- + Drilling Engineering
- + **Cased Hole Services**



# CHS SOLUTIONS

Scientific Drilling's innovative Cased Hole Services team help customers understand reservoirs, wellbore integrity, and potential performance challenges, delivering meaningful results that optimize production.



Our suite of Cased Hole technologies provide a wide array of solutions to target your most challenging production, well investigation, and reservoir management projects.

## POWERED BY **SCIENTIFIC DRILLING**

Our extensive portfolio includes compact and cost-effective memory and surface readout solutions, which are ideal for extended duration logs in high-temperature environments when electric line is impractical and quick turnaround of data is required.

Our experienced CHS team analyzes the data and quickly develops the necessary reports, validating our commitment to consistently deliver a customer experience that makes it **Easy to do Business.**

### FLOW LOGGING SERVICES

- + Standard FLS 1.375
- + Vulcan™ FLS 1.44
- + Vulcan™ FLS 1.75 & 2.25

### CASING/TUBING INVESTIGATION

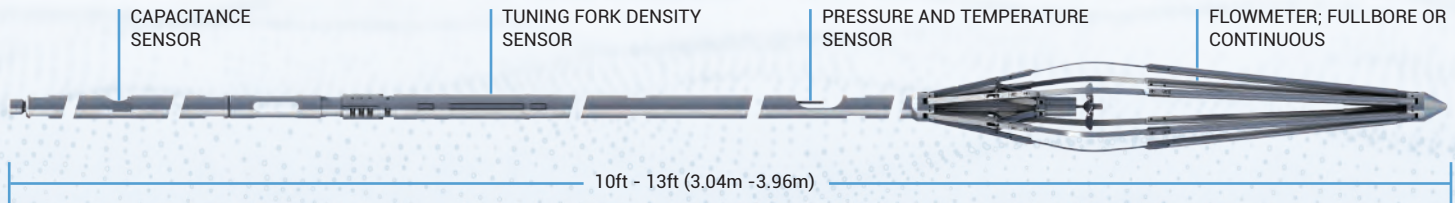
- + Vulcan™ MFT 24
- + Vulcan™ MFT 60 & 90

### RESERVOIR EVALUATION

- + Memory Pulsed Neutron-Neutron 1.625 & 1.69

# STANDARD FLS

Scientific Drilling's Standard FLS provides a high-quality and cost-effective solution to define the well flow profile. The compact modular system offers sensors for both memory and real-time data acquisition, including: Casing Collar Locator, Gamma Ray, Pressure, Temperature, Spinner Flowmeter, Capacitance, and Fluid Density. The standard FLS is rated up to 325°F (163°C).



## DELIVERING THE ULTIMATE VALUE

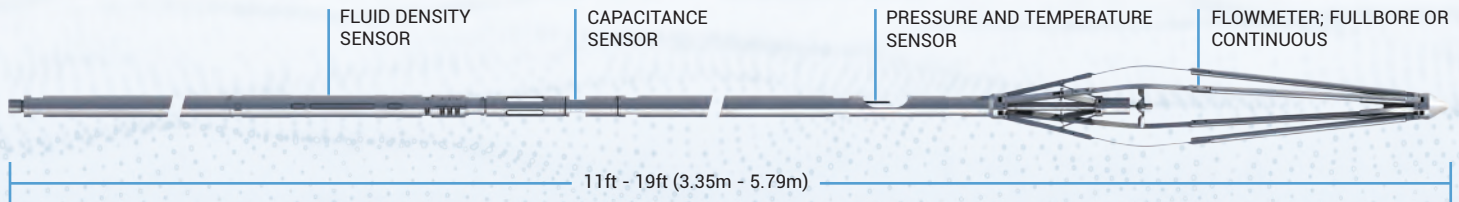
- + Pressure control is simplified and safer
- + Battery options for extended runs (~10 days)
- + Cost effective, reliable method of coiled tubing logging

## TARGET APPLICATIONS

- + Production logging
- + Leak detection
- + Data acquisition in memory and real-time

# VULCAN™ FLS 1.44

Scientific Drilling's Vulcan™ FLS 1.44 is the slimmest, flasked full function, memory based, production logging tool in the industry. The high-temperature system, rated at 600°F (315°C), offers a wide range of sensors, including: Casing Collar Locator, Gamma Ray, Pressure, Temperature, Spinner Flowmeter, Fluid Capacitance, Nuclear Fluid and Tuning Fork Density.



## DELIVERING THE ULTIMATE VALUE

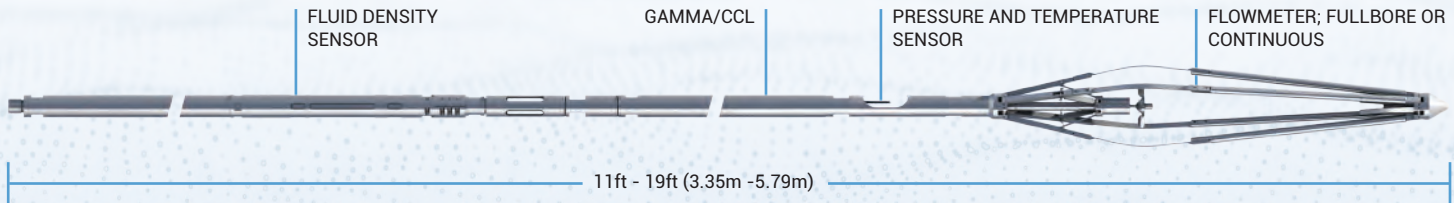
- + Pressure control is simplified and safer
- + Downhole conveyance flexibility
- + Operational where space or height limitations exist

## TARGET APPLICATIONS

- + Production logging
- + Steam density measurement
- + Leak detection

# VULCAN™ FLS 1.75 & 2.25

Scientific Drilling's Vulcan™ FLS 1.75 and 2.25 are extended duration flaked flow logging tools. Both are available in Memory and Surface Readout modes. This high-temperature system offers the following wide range of sensors, including: Casing Collar Locator (CCL), Gamma Ray, Spinner Flowmeter, Temperature, Pressure, and Nuclear Fluid Density.



## DELIVERING THE ULTIMATE VALUE

- + Pressure control is simplified and safer
- + Downhole conveyance flexibility
- + Deployment in height-restricted areas

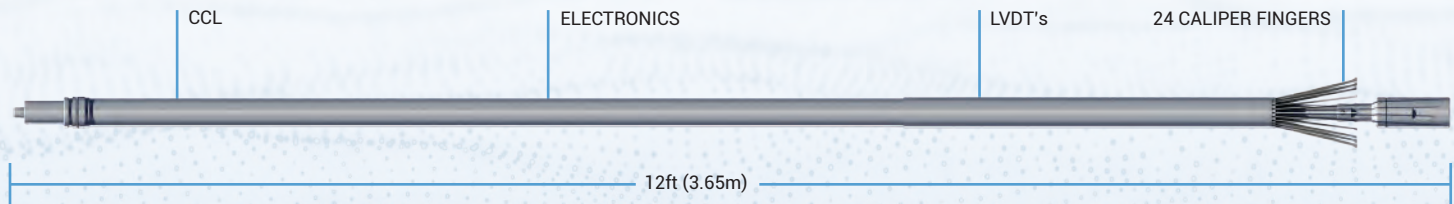
## TARGET APPLICATIONS

- + Production logging
- + Steam density measurement
- + Leak detection



# VULCAN™ MFT 24

Scientific Drilling's Vulcan™ MFT 24 is an extreme temperature, high-accuracy, high-resolution caliper tool that provides detailed inspection inside the completion string. With a finger sensor every 15°, large memory capacity, and fast electronics, the Vulcan MFT 24 can sample 100 times per second; this improves profiling measurements for more detailed results.



## DELIVERING THE ULTIMATE VALUE

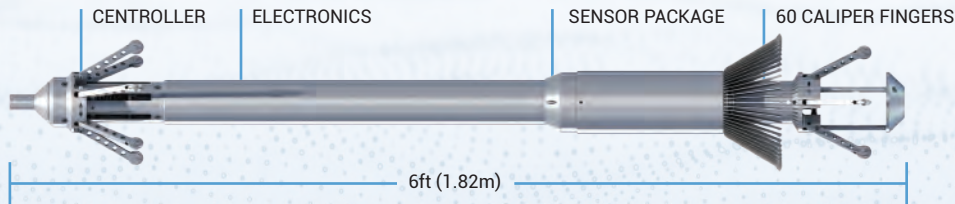
- + Integral casing collar locator
- + Compatible with SDI memory tools
- + In-house data analysis for rapid reporting
- + Samples 100 times per second

## TARGET APPLICATIONS

- + Casing/Tubing evaluation
- + Corrosion and scale detection
- + Whipstock setting Point determination

# VULCAN™ MFT 60 OR 90

Scientific Drilling's Vulcan™ MFT 60 provides reliable and accurate data on the condition of the casing in high-temperature wells up to 600°F (315°C). The tool extends 60 fingers to measure the minimum and maximum internal diameter of the casing, ranging from 5-1/2" to 13-3/8" casing diameters.



## DELIVERING THE ULTIMATE VALUE

- + Downloadable on-site for rapid verification of data and reporting
- + Delivers data in the most extreme environments
- + Fully electronic tool

## TARGET APPLICATIONS

- + HT O&G and Geothermal completions
- + Collar separation identification
- + Corrosion and scale detection

# DOWNHOLE MEMORY CAMERA

The Downhole Memory Camera systems are deployed by operators via slickline or coiled tubing conveyance, eliminating the requirement for costly electric line equipment. Obtaining images and/or color videos of a wellbore obstruction or wireline fish allows operators to fully visualize the situation in the wellbore. Validation of any downhole issues helps to determine the best course of action, reducing overall risk and associated cost.



## DELIVERING THE ULTIMATE VALUE

- + Highly portable system
- + Visualize rather than just theorize
- + Significantly reduce risk and intervention costs

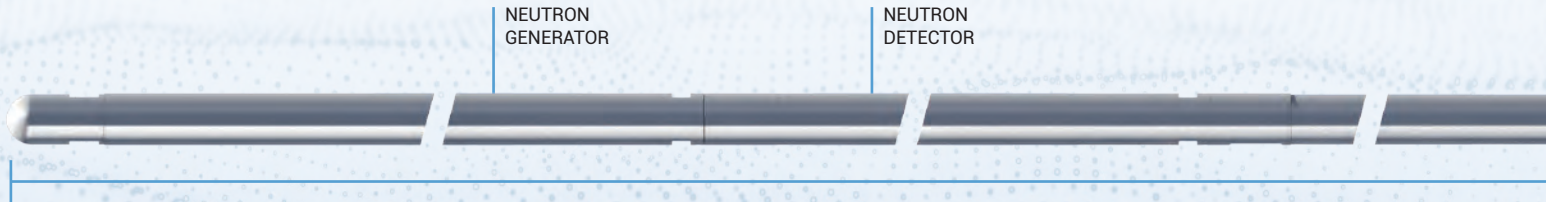
## TARGET APPLICATIONS

- + Wellbore integrity inspections
- + Wireline and fishing operations
- + Scale build-up evaluation
- + Production in-flow identification

# MEMORY PULSED NEUTRON-NEUTRON



MPNN delivers high-accuracy and high-resolution measurements for determining the hydrocarbon presence



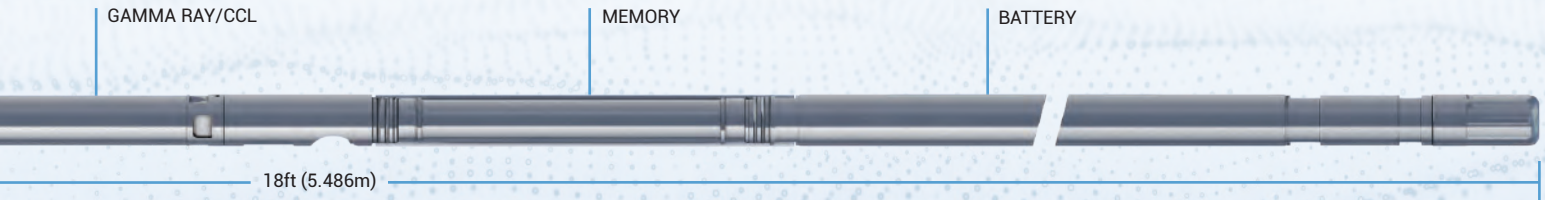
## DELIVERING THE ULTIMATE VALUE

- + Compact design allows for easier wellbore passage
- + Includes integral Gamma-Ray for correlation, pressure temperature CCL's available as extra modules
- + Sigma measurement point maximizes data acquisition across interval of interest

1.625", 1.69"

Scientific Drilling's MPNN 1.625 is the slimmest, most compact memory pulsed neutron tool, making it the ultimate choice for restricted space and tortuous well applications.

The MPNN maintains statistical accuracy in low-salinity formations, and is less dependent on the fluid type in the borehole to deliver accurate results.



## TARGET APPLICATIONS

- + Gas/oil/water contact
- + Non-completed hydrocarbon zone identification
- + Time-lapse water saturation

## PROVEN PERFORMANCE

SDI has an extensive portfolio of Cased hole solutions - logging wells in some of the most challenging environments around the world. Our experience spans a wide range of markets, including conventional and unconventional resources.

**SDI currently operates in 26+ countries, with over 40 locations**  
Visit [www.scientificdrilling.com/CHS](http://www.scientificdrilling.com/CHS) to view our recent successes.





