Thermal imaging to determine mud temperature on drilling rigs

Can mud profiles be used to predict mud temperature during drilling?
The mud profiles also give indication of formation characteristics of the rock contacted during drilling. The object of this investigation was to develop an analytical mathematical model that could be used to predict the mud temperaturein the drill pipe and annulus during drilling at any depth in the well.

Does wellbore temperature affect drilling mud properties?
Therefore,with increasing in drilling depth the wellbore temperature increasesthat effect on drilling mud properties (viscosity include yield point (YP) and plastic viscosity (PV)). This experimental work conducted at rig IDC 41,NS-39 in the Nasiriyah oil field by using real field data.

What factors affect drilling mud properties?
There are many factors that effect on drilling mud,including the borehole temperature. Therefore,with increasing in drilling depth the wellbore temperature increases that effect on drilling mud properties (viscosity include yield point (YP) and plastic viscosity (PV)).

Can mud circulation temperatures be used to predict logged bottom-hole mud temperature?
The mud circulation temperatures obtained by this simple analytical method can be used to predict logged bottom-hole mud temperatures,they can be used also as initial temperatures in predicting mud column temperature buildup after circulation is stopped.

Is mud circulation necessary for supercritical geothermal drilling?
This is insufficient for drilling supercritical geothermal reservoirs with temperatures exceeding 400°C. Downhole cooling techniques by mud circulation is still considered indispensablefor ultrahigh-temperature supercritical geothermal drilling even if the heat-resistant performance of drilling tools will be improved in the future.

What devices are used to measure drilling mud density?
The devices for this work are fan V-G meter(Model 286),heat source and temperature measurement (IR Thermometer).In this experiment using two types of drilling mud density (1.35 gm/cc and 1.21 gm/cc),with increasing temperature the value of PV and YP increase. Also,YP/PV ratio increasing means more drilling cuttings transport.

In this study, first, the computer code of the wellbore temperature simulator GEOTEMP2, which was previously developed at the Sandia National Laboratory, was modified to deal with ...

Quantitative interpretation of electric logs requires knowledge of the formation temperature in order to establish the resistivity of the formation water with accuracy. To determine the ...

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Two graphical methods are presented and illustrated with examples to determine, from transient temperature measurements, the equilibrium formation temperature as well as insitu thermal ...

The depth of the lost circulation was known from the temperature logging and the drilling history (drilling depth, drilling mud properties and the volume of the lost circulation) was taken from ...

The mud circulation temperature at the bottom of the hole was close to 60°C when drilling stopped, and the temperature rose from 130 to 160°C over the subsequent 24 hours. A ...

Based on the model in this study, a heat extraction-while-drilling technology approach is proposed by combining insulated pipe string and the phase-change heat storage ...

In addition, real-time heat maps are valuable for facilitating active temperature management and providing real-time guidance for optimal drilling ...

Abstract One of the management strategies in handling drill cuttings is the use of low temperature thermal desorption technology which goal is to produce oil-free solids for disposal by distilling ...

In this study into the most effective ways to pro-actively manage downhole temperatures, a validated coupled thermal/hydraulic model is used to simulate the transient ...

Innovative drilling mud cooling systems designed for high-temperature environments, featuring advanced temperature control, energy-efficient heat exchange technology, and modular ...

The current state of the art in geothermal drilling is essentially that of oil and gas drilling, incorporating engineering solutions to problems that are associated with geothermal ...

Discover industry-leading mud cooling systems featuring advanced temperature control technology, energy-efficient operation, and enhanced drilling performance capabilities for ...

In areas with high geothermal gradients, the thermal expansion of drilling muds can lead to unintentional underbalance, and a kick may occur. In this paper we demonstrate the use of an ...

In high-temperature drilling operations, maintaining optimal drilling fluid (mud) temperature is critical to ensuring operational efficiency, equipment reliability, and safety. The ...

Temperature, HPHT environments are characterized by temperatures exceeding 300°F (149°C), which can cause thermal degradation of drilling fluids, equipment, and materials.

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Smartphone attachments normally have moderate thermal sensitivity from -4 to 248 degrees Fahrenheit, while handheld thermal cameras may extend the temperature range from -13 to ...

In the decades that followed, drilling fluid companies introduced developments in chemistry, measurement and process engineering that led to significant ...

The mud cooling heat exchanger equipment is an advanced industrial solution designed to efficiently manage and regulate the temperature of drilling mud in various drilling operations. ...

This research analyzed the thermal process in drilling or completion process. The research presented two analytical methods to determine temperature profile for onshore drilling and ...

In addition, real- time heat maps are valuable for facilitating active temperature management and providing real- time guidance for optimal drill-ing parameters during daily drilling operations.

In the decades that followed, drilling fluid companies introduced developments in chemistry, measurement and process engineering that led to significant improvements in drilling ...

In this study formation temperatures of the five geothermal wells in Germencik-Omerbeyli field were estimated by using mud inlet and outlet temperatures obtained during drilling. GTEMP ...

This paper describes the development and application of TEMLOPI v1.0, a numerical thermal simulator for estimation of the transient temperature distribution in a ...

Industry-leading mud temperature control equipment featuring advanced thermal management technology, versatile environmental adaptation, and smart monitoring systems for enhanced ...

The object of this investigation was to develop an analytical mathematical model that could be used to predict the mud temperature in the drill pipe and annulus during drilling at any depth in ...

Typical drilling fluids additives (cellulose materials, calcium carbonate, graphite) used in drilling conventional and unconventional oil and gas wells may not be suitable for drilling geothermal ...

Resources Here you will find links to relevant white-papers as well as downloadable materials below. Downloads Links Determination of Skin Burn Temperature Limits for Insulative ...

Drill Cool Systems is the premier provider of drilling fluid temperature control solutions and mud coolers for the oil, gas and geothermal ...

Therefore, with increasing in drilling depth the wellbore temperature increases that effect on drilling mud

properties (viscosity include yield point ...

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