

January 2023

PETROKASS

MAGAZINE

What Is Professional Ethics

The concept of professional ethics or work ethics means all the principles, customs, behaviors and policies that would ensure the provision of a safe environment for work, and make it more suitable for production and development

**SPECIAL
EDITION**

DRILLING FLUID ENGINEERING

More Detailing with Full Course

TECHNOLOGY

The ERA of Being Fast

2023

Are you ready?

Monthly Magazine Published and Owned by PETROKASS Company

PETROKASS Magazine is a Monthly Magazine Owned by PETROKASS Company Specialized in Petroleum Sector and Generalized in Management and New Technology This Magazine Created by you Containing Chaptered Topics and Information's with New Style and Published all over the World.

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Public Topics



ADVERTISING

There is no doubt that the world of oil, gas and petroleum industries has become one of the most important areas that the whole world is preoccupied with and that there are great efforts for continuous development, along with serious research efforts for young researchers.

Therefore, we are pleased to present the first issue of **PETROKASS** magazine, which contains among its pages a number of articles, news and editorial presentations in various fields related to the world of the petroleum industry.

This Magazine included honest words to suit the generation of elders of science and its senior professors, the middle generation that seeks promotion and prepares for it, and the young generation of its employees, who the magazine's management was keen to Express their thoughts and allocate a corner for the hardworking and serious among them, in order to achieve the main goal of its issuance.

Editorial Board



PETROKASS in words:

PETROKASS is a Specialized and Authorized Education and Consultancy Company established since 2010, providing a wide range of Training & Consultancy services within MENA and overseas in Different Field Industries and Specialized in Oil & Gas and Located in United Arab Emirates.

Our vision:

Business Market needs Special services in-which Serve the Potential and requirements Also Looking for an answer for the most Important Question, which how can we develop our Needs, PETROKASS Has the Answer for this its Unique Options and After Market Services.

Our Mission:

To provide the Business market with Appropriate professional needs with Assuming the best works to companies *in the field*.

PUBLISHER'S MESSAGE

"Success is the progressive realization of a worthy goal or ideal"

Earl Nightingale

The greatest inventor of modern times, Thomas Edison, (failed ten thousand times) in his experiments on the light bulb before he succeeded in inventing it! A journalist asked him, "Mr. Edison, you have so far failed five thousand times to invent the light bulb, so why do you insist on going ahead with your experiments?" He replied, "I made a mistake, young man, I have succeeded in discovering five thousand ways that do not get me to what I want!

Today we give you a number of tips that may help you achieve your goals easily:

1- Desire:

Start with a strong and sincere desire, your goal should be very desirable to you, and stemming from within, not be a desire that others want for you.

2- Trust:

Generate in yourself full confidence that you will get your hopefully goal, without doubt or doubt, because if your conscious mind fully believes your goals, your subconscious mind (or your subconscious) will believe those goals, and thus direct your behavior towards achieving them, and let your goals be realistic.

3- Write down your goals:

Writing goals on a piece of paper is very important; it is like writing a program (computer) that enters the subconscious mind, write the goal in all its possible details

4- Determine your benefit from achieving your goal:

Write down all the benefits you will get if your goal is achieved, if it appears that the benefits are few, your pursuit of the goal will be weak, but if many are important, the goal becomes irresistible attractiveness.

5- Decide where you are now and where you want to reach:

If you want to lose weight, check your current weight, and decide how much you want to lose next.

6. Set a date to reach the goal:

It helps you have a measurable goal; you won't be successful until you know how many steps you have to take, how many of them you have taken, and how many you have left.

7- Identify the obstacles you have to overcome:

If there are no obstacles, what you are looking for is not a goal, but just an activity and movement, and you will notice that obstacles that used to seem big will seem smaller after you write them down.



YEAR HIGH LIGHT 2022

Notably

Half a year later, the future of the global energy market is complete; many facts have changed amid a complete reformulation of the global energy map. The war has affected everywhere in the world, from food prices to fuel and petroleum products globally, and with it the economic map of the world. Perhaps one of the most important repercussions is the impact of the crisis on the supply of oil, natural gas and energy security significantly, after more than 180 days; the Russian-Ukrainian crisis caused a radical change in the plans of the European Union countries regarding the Russian energy file

The countries of the European continent are rapidly seeking to get rid of dependence on Russian energy.

Notably, Russia was the largest oil exporter, with oil exports accounting for more than 5 million barrels per day of crude oil, about 12% of total world trade. It accounts for about 2.8 million barrels per day (bpd) of global petroleum product exports, equivalent to about 15% of global refined product trade.

To combat rising inflation, central banks around the world have taken a series of rate hikes to cool the economy and the labor market. Interest rate hikes have pushed the dollar up, putting pressure on oil prices, as a stronger dollar makes the commodity denominated more expensive for holders of other currencies.

Gold prices rose, supported by a weaker dollar, while investors braced for important inflation data in the United States and a series of central bank meetings with a focus on the US Federal Reserve.

The dollar a basket of six major currencies, is still up about 9.5 percent so far this year, but has fallen more than 6 percent in the fourth quarter, reflecting a pessimistic outlook on inflation and interest rates.

Gold prices rose, supported by a weaker dollar, while investors braced for important inflation data in the United States and a series of central bank meetings with a focus on the US Federal Reserve.

The first half of this year (2022) witnessed many oil and gas discoveries around the world, with crude prices jumping, which make drilling and exploration operations economically feasible to a large extent.

Norway has topped the world's important oil discoveries, as has been the case in recent years, while Algeria has led the discoveries in the Arab region.

What Is Professional Ethics?

The concept of professional ethics or work ethics means all the principles, customs, behaviors and policies that would ensure the provision of a safe environment for work, and make it more suitable for production and development.

Each profession has a set of ethics and principles that regulate its workflow, starting with the ethics of the doctor's profession and preventing him from disclosing patients' secrets, through the rules governing dealing with offenders in the legal profession, disclosing clients' secrets in different professions, obtaining a bribe, conflict of interest, or making a profit that harms the public interest or the environment as a whole.

Professional ethics are important because they serve to create organizations based on moral standards of conduct.

Here are a number of reasons why professional ethics are important.

- 1-Based on a set of rules, it can organize a group of professionals from the same profession.
- 2-The organization formed contributes to the personal growth of the associated professional.
- 3-Motivates teamwork and increases the bonds between colleagues.
- 4-Creates a system for each profession, called a code of ethics; in which the duties to be fulfilled by each professional are twinned.
- 5Provides personal and professional benefits by regulating the actions of a profession and highlighting the virtues of the professional.

SOURCES OF ETHICS:

Professional ethics has a range of different sources, but there are three specific sources that are the most famous and influential with regard to the upbringing of the collective mind, and they are as follows:

The value system of the individual:

The system of values prevailing in society

Regulations of professional ethics

A good place to start for establishing ethics in safety is with the code of ethics created by the Board of Certified Safety Professionals (BCSP) and used by permission of the BCSP



REF : Bob Lapidus-safetycenter-2019

History of Science

EXPLORATION

Hutton was a Scottish geologist, agriculturalist, chemical manufacturer, naturalist and physician. Often referred to as the father of modern geology, he played a key role in establishing geology as a modern science.

Hutton devoted his time to extensive scientific reading and traveled widely to inspect rocks and observe the actions of natural processes. His chief contribution to scientific knowledge, the



uniformitarian principle, was put forward in his papers presented to the Royal Society of Edinburgh in 1785. Two of these papers were published in 1788 in the Transactions of the Royal Society of Edinburgh under the title "Theory of the Earth; or an Investigation of the Laws Observable in the Composition, Dissolution, and Restoration of Land Upon the Globe."

Hutton's view as stated in these papers was that the world's geologic phenomena can be explained in terms of observable processes, and that those processes now at

work on and within the Earth have operated with general uniformity over immensely long periods of time. These two papers marked a turning point for geology; from that time on, geology became a science founded upon the principle of uniformitarianism.

Theory of rock formations

Hutton developed several hypotheses to explain the rock formations he saw around him, but according to Play fair he "was in no haste to publish his theory; for he was one of those who are much more delighted with the contemplation of truth, than with the praise of having discovered it". After some 25 years of work, his Theory of the Earth; or an Investigation of the Laws observable in the Composition, Dissolution, and Restoration of Land upon the Globe was read to meetings of the Royal Society of Edinburgh in two parts, the first by his friend Joseph Black on 7 March 1785, and the second by himself on 4 April 1785.

Hutton subsequently read an abstract of his dissertation Concerning the System of the Earth, its Duration and Stability to Society meeting on 4 July 1785, which he had printed and circulated privately in it, he outlined his theory as follows;

The solid parts of the present land appear in general, to have been composed of the productions of the sea, and of other materials similar to those now found upon the shores.



James Hutton

1726-1797

The past history of our globe must be explained by what can be seen to be happening now. No powers are to be employed that are not natural to the globe, no action to be admitted except those of which we know the principle.

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Ref:

Brian Frederick Windley - uniformitarianism – Britannica -2020

Wikipedia, seen 20-11-2022

Do not use pencil or paper or a calculator during this test. 😊

1-27 minutes before 7 o'clock is 33 minutes past 5 o'clock.

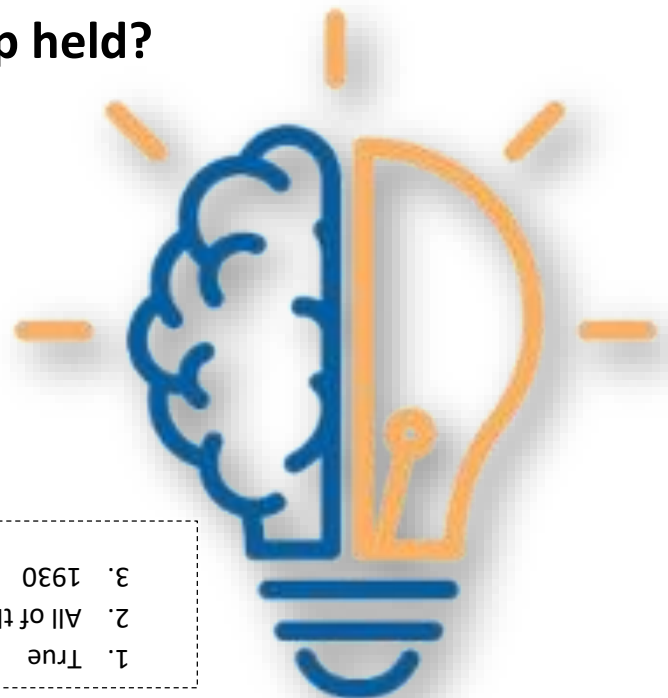
- True
- False

2-If there are 15 cows standing in line on a hill, how many are facing in the same direction?

- 6
- 8
- All of them

3- When was the first soccer world cup held?

- 1945
- 1917
- 1930



- 1. True
- 2. All of them
- 3. 1930

TEST YOUR KNOWLEDGE

Drilling Fluid Engineering

1-INTRODUCTION

The simplest drilling fluid is a dirty mixture of water and clay, often referred to as mud. The drilling fluid in the drilling process can be seen as the equivalent to the blood in the human body, the mud pump is the heart, and the drilled out shale (cuttings) represent the slag products. At the surface, we find the mud cleaning system which corresponds to the kidney and the lungs. In the mud cleaning system, the cuttings are removed by means of a sieve, the shale shaker.

Mud is basically a fluid (water or oil) circulated to bring cuttings out of the wellbore. Two important qualities of the fluid are needed for mud to achieve all its tasks:

- **Viscosity:** Water and oil has a viscosity of around 1 cP (centiPoise), which is far too little to transport the cuttings out. A component is needed to increase the viscosity. The main viscosifiers are clay and polymer.
- **Density:** Water and oil have a density of around 1 kg/l, which in most cases is too little to counter high pore pressure. It may in fact become necessary to increase it to twice the pressure of a water column. The main density giver is Barite (BaSO_4), a mineral often found as evaporites (with a specific density of 4.2 kg/l), or, soluble salts (brines).

Clay and polymers react with water, while Barite does not, and is therefore referred to as the inert phase.

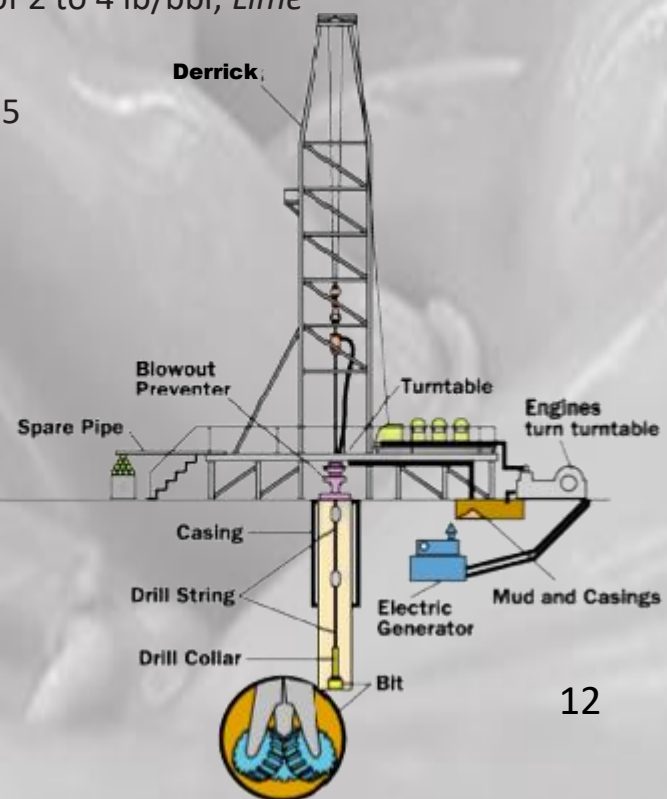
1.1 Nine distinct mud systems

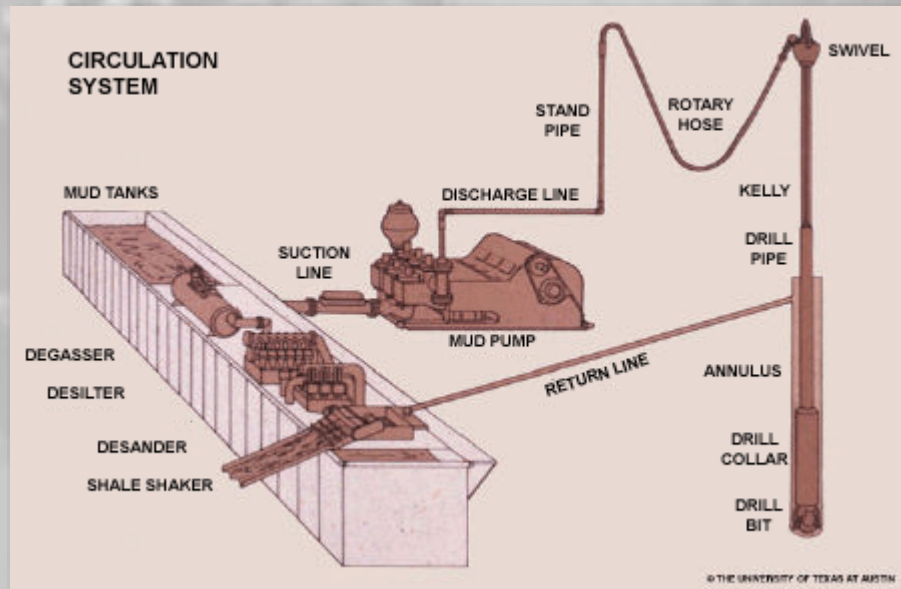
For mud to manage its many tasks, a broad range of different fluid systems have been developed. The July issue of World Oil (a list of general references are found in Chapter 9) presents all drilling fluids and additives (approximately 5000 different additives). Nine distinct mud systems are defined here. The first seven are water-based, while the eighth is oil-based. The ninth category is a specialized one in which air or gas is the continuous fluid. The 9 categories are:

1. *Non dispersed*. These may consist of spud muds, natural muds and other lightly treated systems generally used for shallow wells or top hole drilling.
2. *Dispersed*. At greater depths or where hole conditions may be problematic, muds are often dispersed, typically by means of lignosulphonates or other DE flocculants. These and similar products are also effective filtrate reducers.
3. *Calcium treated*. Divalent cations such as calcium and magnesium, when added to a mud, inhibit the swelling of formation clays and shale, and are therefore added to control sloughing shale, hole enlargement and to prevent formation damage. Hydrated lime, gypsum (calcium sulphate) and calcium chloride are principal ingredients of calcium systems. *Gyp systems* (note: Gyp = gypsum) usually have a pH of 9.5 to 10.5 and an excess gyp concentration of 2 to 4 lb/bbl; *Lime*

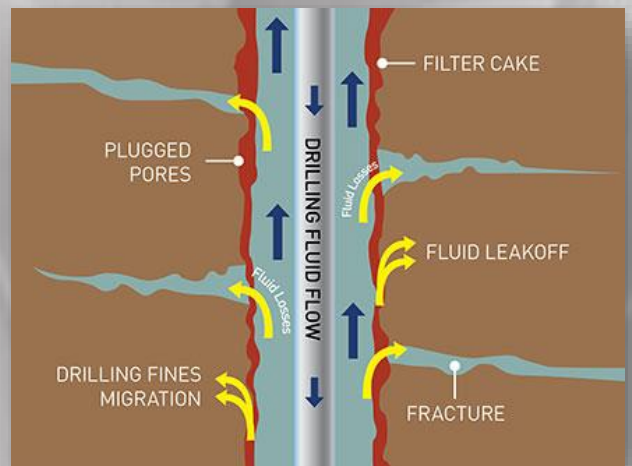
4. *systems* have an excess lime concentration of 1 to 15 lb/bbl and a pH of 11.5 to 12.0.

5. *Polymer*. Muds incorporating long-chain, high-molecular-weight chemicals are effective in increasing viscosity, flocculating muds, reducing filtrate loss and stabilizing the formation. Various types of polymers are available for this purpose, including Bentonite extenders. Bio polymers and cross-linked polymers are also used and have good shear-thinning properties at low concentrations.





6. *Low solids*. This includes systems in which the amount and type of solids are controlled. Total solids should not range higher than about 6 % to 10 % by volume (and clay < 3 % by volume). One primary advantage of low-solids systems is that they significantly improve the rate of penetration.
7. *Saturated salt*. Include several groups: *Saturated salt systems* have a chloride ion concentration of 189 000 ppm. *Saltwater systems* have a chloride content from 6 000 to 189 000 ppm, and at its lower level are usually referred to as *brackish* or *seawater systems*.
8. *Workover*. Completion and workover fluids are specialized systems designed to minimize formation damage, and be compatible with acidizing and fracturing operations (acid soluble) and capable of inhibiting swelling clays that reduce formation permeability. Density is obtained through dissolved salt to avoid long term settling.
Oil/synthetic. Oil-based fluids are used for high temperature wells, deviated holes and wells where pipe sticking and hole stabilization is a problem.



Funny Infomati ☺ n



Lake Superior State University in Michigan offers a unicorn hunting license. Unsurprisingly, the "chief herald of the Unicorn Hunters" was once quoted saying: "The pursuit of the unicorn is a lonely quest." We wish them nothing but good luck!



Want another funny fact? If you eat enough carrots—about three large carrots a day for several weeks—it increases the beta-carotene in your blood and could turn your skin orange.



You're twice as likely to be killed by a vending machine than a shark, according to the New England Aquarium. So when is Discovery Channel premiering their "Vending Machine Week?"

Oil and Gas Industry Embracing Drones for Remote Inspection

Drone technology is becoming a valuable tool in the oil and gas industry. Oil and gas companies are opting to use drones to address their inspection needs and reduce operational costs.

TECHNOLOGY

*M*anual inspections in the oil and gas industry are expensive, time-consuming, and demand exhausting work. The oil and gas companies handle highly flammable substances which are hazardous to the personnel performing inspections. Drones for industrial use are proving to be highly beneficial in remote monitoring and assessments. Remote inspections can be performed by inspectors remotely from on-site or off-site locations without physically being present at the site.

"Drones are a flexible and cost-effective way to conduct inspections across the oil and gas industry value chain," said Prashanthi P S, Research Analyst at Beroe Inc. "Drones can increase the safety of workers, improve the quality of investigations, and reduce the high costs associated with manual reviews. Some of the other applications include pipeline inspections, deepwater

offshore location assessments, offshore vessels, rigs, underwater services, security, surveillance, monitoring, mapping, delivery of goods and survey for the potential asset."

Manual inspections of onshore and offshore locations are generally expensive. Labor cost is high, constituting up to 30 percent of the total cost. Drones allow cost-effective and faster inspections of pipelines, deepwater offshore, and underwater equipment. Analysis of drone data enables companies to predict the health of the equipment and foresee any potential failures. In addition, drones fitted with sensors can monitor methane emissions from assets in the oil and gas companies.

Manual inspections of offshore locations require helicopters to transport personnel. The cost of transportation for the inspection team and the cost for helicopter pilots is high.

With remote drone inspections, these costs can be eliminated. The person in charge need not travel to the site; they can perform image inspection through the video, still, infrared, and thermal images captured by the cameras fitted on drones. Inspectors can then perform advanced analysis of drone data with the help of the company's data analysis software.

Manual inspection of flare stacks requires the process production to stop for inspection.

With remote drone inspections, flares can be kept online without interrupting production. This eliminates production loss of approximately \$1 million per day per flare. Remote inspections of Fluid Catalytic Cracking Units with drones are more efficient since refinery downtime would not be needed, preventing production loss of approximately \$2 million per day. Scaffolding costs in the oil and gas industry amount to \$50 000 to \$80,000 per stack. Remote drone inspections can save more than 80 percent of scaffolding costs. Upcoming new drone technologies such as 5G and high-speed drones are expected to further boost the adoption of drones in the oil and gas industry.



"The use of drones in the oil and gas industry adds enormous value in terms of ease of operation, the safety of personnel, continued production, and reduced operational costs." said Prashanthi P S, Research Analyst at Beroe Inc. "With the continued development of drone technology, it's interesting to look forward to seeing new commercial drone applications and how they can be integrated with quality control, quality assurance, and maintenance processes. And when you add AI and automation to this mix, the existing benefits compound tremendously."

ADVERTISING



Why Sagacity Consulting

Education 4.0 is no longer just a buzzword it's here! It's the future of learning, one that focuses on personal growth, collaboration and the integration of technology into education.

Our team consists of education and technology experts passionate about promoting innovation in the learning environment.

We offer a variety of services aimed at creating learning environments tailored to the needs of learners and employees alike.

Our mission is to use technology to create an innovative learning experience, promoting communication, collaboration, and creativity so that everyone can reach their full potential.



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What is Time Management?

Time Management refers to managing time effectively so that the right time is allocated to the right activity.

Effective time management allows individuals to assign specific time slots to activities as per their importance.

Time Management refers to making the best use of time as time is always limited.

Ask yourself which activity is more important and how much time should be allocated to the same? Know which work should be done earlier and which can be done a little later.

WHAT ARE THE FIVE S'S (5S) OF LEAN?



5S stands for the 5 steps of this methodology: **Sort**, **Set in Order**, **Shine**, **Standardize**, **Sustain**. These steps involve going through everything in a space, deciding what's necessary and what isn't, putting things in order, cleaning, and setting up procedures for performing these tasks on a regular basis

2023

January

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