

Category: Geophysics

1. An adjustment of the relative positive and negative excursions of reflections during seismic processing by bulk shifting the null point, or baseline, of the data to emphasize peaks at the expense of troughs or vice versa.

Key: Bias

2. A small, electrically activated explosive charge that detonates a larger charge.

Key: Cap

3. An elastic body wave or sound wave in which particles oscillate in the direction the wave propagates.

Key: dilatational wave

Category: Shale gas

4. Measurement of adsorbed gas and interstitial gas, which is the gas contained in pore spaces, allows calculation of gas in place in a reservoir.

Key: interstitial gas

5. Predictable variation of a property of a material with the direction in which it is measured, which can occur at all scales. For a crystal of a mineral, variation in physical properties observed in different directions is aeolotropy (also known as anisotropy)

Key: Aeolotropy

6. A type of areally (区域的) extensive reservoir that contains hydrocarbon throughout, rather than containing a water contact or being significantly affected by a water column or a defined structural closure. The areal extent of a continuous reservoir, such as a shale reservoir, can be as large as the extent of the sedimentary basin in which the shale was deposited.

Key: continuous reservoir

7. Also known as logging while drilling or LWD, the measurement of formation properties during the excavation of the hole, or shortly thereafter, through the use of tools integrated into the bottomhole assembly.

Key: formation evaluation while drilling

8. fluid injected into a well as part of a stimulation operation. Fracturing fluids for shale reservoirs usually contain water, proppant, and a small amount of nonaqueous fluids designed to reduce friction pressure while pumping the fluid into the wellbore

Key: frac fluid

9. The gaseous phase present in a reservoir or other contained area. Gas may be found either dissolved in reservoir fluids or as free gas that tends to form a gas cap beneath the top seal on the reservoir trap.

Key: free gas

10. The geologic specialty that deals with understanding how rocks, stresses, pressures, and temperatures interact. This understanding is used to solve oilfield problems, such as optimizing hydraulic fracturing treatments of shale reservoirs.

Key: geomechanics

11. What is GIIP?

Key: Abbreviation for gas initially in place, the volume of gas in a reservoir before production.

12. The quality of variation in rock properties with location in a reservoir or formation. Shale gas reservoirs are heterogeneous formations whose mineralogy, organic content, natural fractures, and other properties vary from place to place.

Key: heterogeneity

13. A technique to track the propagation of a hydraulic fracture as it advances through a formation. Microseisms are detected, located, and displayed in time for scientists and engineers to approximate the location and propagation of the hydraulic fracture.

Key: hydraulic fracture monitoring

14. **Kerogen** is the portion of naturally occurring organic matter that is nonextractable using organic solvents. Typical organic constituents of kerogen are algae and woody plant material.

Key: Kerogen

Category: Oil history and statistics

15. On 1917 Senator Berenger warned Prime Minister George Clemenceau that France would run out of oil by ...

Key: 1918.3

16. Who is known as the “Champion of Oil” ...

Key: Winston Churchill

17. San Remo Agreement was signed between ...

Key: British and French

18. Retrograde condensation is...

Key: a phenomenon that liquid condensation can occur within the phase envelop with Reduction of the pressure

19. Reynolds number represents the ratio of inertial forces by viscous dissipation forces

Key: Reynolds number

20. The process of a source rock becoming capable of generating oil or gas when exposed to appropriate pressures and temperatures. As a source rock begins to mature, it generates hydrocarbons. As an oil-prone source rock matures, the generation of heavy oils is succeeded by medium and light oils and condensates.

Key: maturation

Category: Production

21. The tendency of fluids to stratify into different layers because of gravity forces. In this phenomenon, the heaviest fluid settles near the bottom and the lightest fluid rises to the top. It occurs inside reservoirs as well as in separator facilities. What is the phenomenon called?

Key: Gravity segregation

22. A tubular, perforated device attached to the bottom of a suckered pump that helps to prevent gas lock. As well fluids enter it, gas breaks out of the fluid and exits from it through perforations near the top. Remaining fluids enter the pump through a mosquito bill (a tube within the anchor), which has an opening near the bottom. In this way, all or most of the gas escapes before the fluids enter the pump. What is this device called?

Key: Gas anchor

23. A method of enhanced recovery in which various hydrocarbon solvents or gases (such as propane, LPG, natural gas, carbon dioxide, or a mixture thereof) are injected into the reservoir to reduce interfacial forces between oil and water in the pore channels and thus displace oil from the reservoir rock. What is the method called?

Key: Miscible drive

Category: Oil history & industries statistics

24. What is the percentage for Asia Pacific student members of SPE in 2014?

Key: 32%

25. This oil field was discovered in 1948 in Saudi Arabia. It is the largest conventional

oil field in the world. Name this oil field?

Key: Ghawar

26. When did SPE become a separately incorporated organization?

Key: 1985

27. Please name four print and digital magazines of SPE.

Key: JPT, Oil Gas Facilities, The Way Ahead, HSE Now.

28. How many barrels per day did total petroleum products deliver to the domestic markets in July 2013?

Key: 18,925,000 b/d

29. What is the average price for a barrel of OPEC crude oil in July 2013?

Key: \$104.45 per barrel

30. What is AIME short for?

Key: American Institute of Mining Engineers

31. When did SPE become a separately incorporated organization?

Key: 1985

32. Who will be the president of SPE in 2016?

Key: Nathan Meehan of Baker Hughes

33. Please name four peer-reviewed journals of SPE.

Key: Journal of Canadian Petroleum Technology, SPE Drilling&Completion, SPE Economic&Management, SPE Journal, SPE Production&Operation, SPE Reservoir Evaluation&Engineerin

34. In well cementing, the fluid, usually drilling mud or salt water, that is pumped into the well after the cement is pumped into it to force the cement out of the casing and into the annulus.

Key: Displacement fluid

35. A specially fabricated length of casing or tubing usually placed temporarily above a valve on top of the casing head or tubing head. It is used to run swabbing or perforating tools into producing well and provides a method for sealing off pressure and thus should be rated for highest anticipated pressure.

Key: Lubricator

Category: Drilling

36. The storage device for nitrogen pressurized hydraulic fluid, which is used in operating the blowout preventers. What is the device called?

Key: Accumulator

37. A pit in the ground to provide additional height between the rig floor and the well head to accommodate the installation of blowout preventers, ratholes, mouse holes, and so forth. It also collects drainage water and other fluids for disposal. What is this pit called?

Key: Cellar

38. An open discharge of fluid or gas to the atmosphere. It is often ignited to dispose of unwanted gas around a completed well. What is it called?

Key: Flare

39. A mixture of cement powder, water and additives which harden to form a cement sheath or cement plug in a well. What is it called?

Key: Cement slurry

40. What is IADC short for?

Key: International Association of Drilling Contractors

41. Please name four kinds of logging.

Key: Radiation logging, acoustic logging, gamma ray logging, differential temperature logging

42. It is the shear strength of the mud when at rest. Its ability to hold solids in suspension. Bentonite and other colloidal clays are added to the mud to increase it. What is this strength called?

Key: Gel strength

43. What is PDC short for?

Key: Polycrystalline diamond compact

Category: Oil history & industries statistics

44. At which conference was OPEC founded?

Key: the Baghdad Conference

45. Please name the five member countries when OPEC was founded in 1960.

Key: Iran, Iraq, Kuwait, Saudi Arabia and Venezuela

46. Currently, how many member countries does OPEC have?

Key: 12

47. When and where was the OPEC secretariat established?

Key: in 1961 in Geneva, Switzerland

48. Which two countries would be major players in deploying CCS from high-purity CO₂ sources?

Key: North America and China

49. When was Saudi Aramco founded?

Key: in 1933

Category: Geology

50. A subsurface condition in which the pore pressure of a geologic formation exceeds or is less than the expected, or normal, formation pressure. It usually occurs when impermeable rocks such as shales are compacted rapidly, their pore fluids cannot always escape. What is the pressure called?

Key: abnormal pressure

51. The measurement of the ability to flow or transmit fluids through a rock, conducted when a single fluid, or phase, is present in the rock. What is it called?

Key: absolute permeability

52. The measurement of pressure relative to the pressure in a vacuum, equal to the sum of the pressure shown on a pressure gauge and atmospheric pressure. What is it called?

Key: absolute pressure

53. Pertaining to the environment of deposition of sediments by wind, such as the sand dunes in a desert. Because fine-grained sediments such as clays are removed easily from wind-blown deposits. What is it called?

Key: Aeolian

Category: Logging

54. A multiphase flow regime in which the lighter fluid flows in the center of the pipe, and the heavier fluid is contained in a thin film on the pipe wall. What is it called?

Key: annular flow

55. A device for measuring in situ the velocity of fluid flow in a production or injection well. What is it called?

Key: flowmeter

56. A multiphase fluid flow regime characterized by the gas phase being distributed as bubbles through the liquid phase. In a producing wellbore where the bubbles are uniformly distributed, there is little relative motion between the phases. What is it called?

Key: bubble flow

57. The frequency with which a local probe detects a change from one type of fluid to another. For example, if water is the continuous phase, the probe will respond digitally each time a bubble of oil or gas passes it. What is this device called?

Key: bubble count

58. Fluid pressure in the space between tubing and casing or between two strings of casing. What is it called?

Key: annular pressure

Category: Production testing

59. The maximum flow rate a well could theoretically deliver with zero pressure at the middle of the perforations. The term is commonly abbreviated as AOFP or OFP. What is it called?

Key: absolute open flow potential

60. Petroleum with a high content of naphthenic compounds, such as asphaltenes. It is also known as naphthene-based crude oil when the paraffin wax content is low. What is it called?

Key: asphaltic crude

61. The pressure that would be obtained if all fluid motion ceases in a given volume of reservoir. It also is the pressure to which a well will ultimately rise if shut in for an infinite period. What is it called?

Key: average reservoir pressure

62. The pumping of acid into the wellbore to remove near-well formation damage and other damaging substances. This procedure commonly enhances production by increasing the effective well radius. What is this procedure called?

Key: acidizing

63. Any system that adds energy to the fluid column in a wellbore with the objective of initiating and improving production from the well. The system uses a range of operating principles, including rod pumping, gas lift and electric submersible pump. What is it called?

Key: artificial lift

Category: EOR

64. This is an enhanced oil recovery process in which foam is injected into a reservoir to improve the sweep efficiency of a driving fluid. Name this EOR method.

Key: Foam Flooding

65. It is a general term used to describe reduction in the natural capability of a reservoir to produce its fluids, such as a decrease in porosity or permeability, which is usually caused by exposure to drilling fluids. Name this term.

Key: Formation Damage

66. This is a type of primary recovery mechanism, in which the force of gravity pushes hydrocarbons out of the reservoir, into the wellbore and up to surface. Name this recovery mechanism.

Key: Gravity Drainage

67. It is a type of reservoir-drive mechanism in which the energy for the transport and production of reservoir fluids is provided by the expansion of gas inside the oil phase. Name this drive method.

Key: Solution Gas Drive

68. Name a phenomenon of multiphase flow in a reservoir, in which a less dense fluid flows preferentially on the top of a reservoir unit and a more dense fluid flows at the bottom, which reduces sweep efficiency.

Key: Gravity Override.

69. This is a type of damage in which foreign particles injected during normal well operations, such as drilling, completion, workover, stimulation or enhanced recovery, block the near-wellbore formation, reducing well productivity. Name this type of damage.

Key: Induced Particle Plugging

70. Name the injection pattern in which four production wells are located at the corners of a square and the injector well sits in the center.

Key: Inverted Five Spot

Category: Oil history & industries statistics

71. SPE has achieved great improvements last year. Name the SPE President in the year of 2014?

Key: Jeff Spath from Schlumberger

72. In 1957, The Petroleum Branch of AIME becomes a full-fledged professional society – namely the Society of Petroleum Engineers. Name the city where the first Board of Directors meeting was held.

Key: Dallas, Texas.

73. As we know that SPE was officially founded within the American Institute of Mining Engineering (AIME) in 1957. In which year did SPE become a separately incorporated organization.

Key: 1985

74. For 5 points each, list 3 kinds of chemical flooding method.

Key: Surfactant Flooding, Polymer Flooding, Alkaline or CO₂ Flooding.

75. For 5 points each, list 4 kinds of injection patterns.

Key: Line drive, Four spot, Five spot, Seven spot or Nine spot.