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**DICTIONARY**

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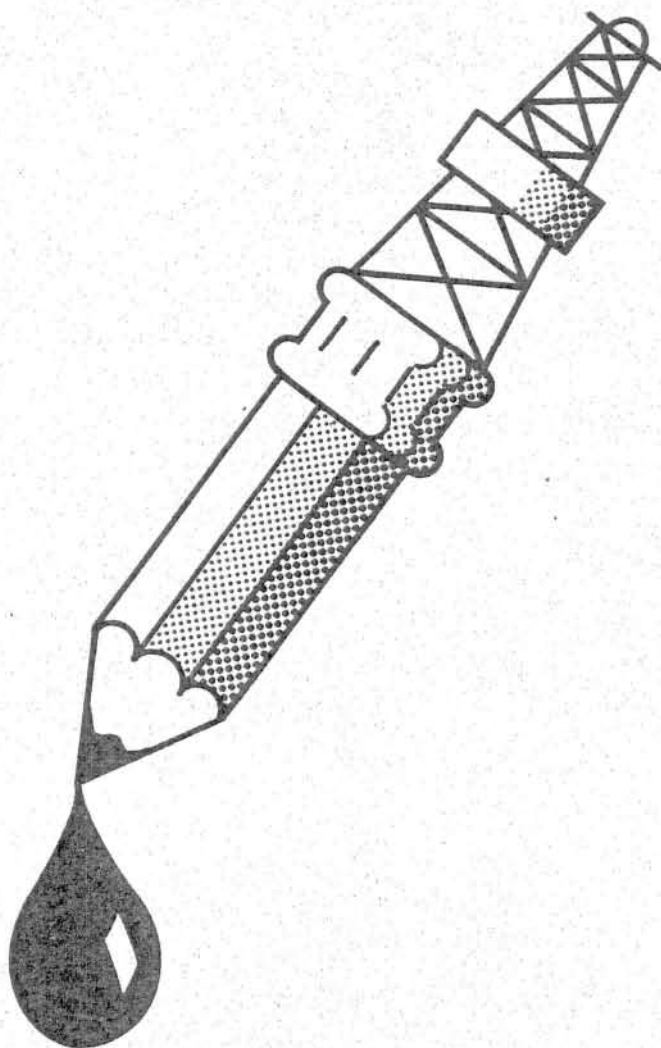
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**PETROLEUM INDUSTRY**

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**FIRST EDITION**

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**Petroleum Extension Service**

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# **A Dictionary for the Petroleum Industry**

**First Edition**

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**0002**

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Langenkamp, *Handbook of Oil Industry Terms and Phrases*, fourth ed. Tulsa: PennWell Books, 1985. Used with permission. All rights reserved.

middle distillate; straight-run

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Langenkamp, *Illustrated Petroleum Reference Dictionary*, third ed. Tulsa: PennWell Books, 1984. Used with permission. All rights reserved.

carrier bar; charge stock; gas oil; process stream; Seven Sisters; sling; swag

**control head** *n*: a special blowout preventer used in snubbing.

**controlled aggregation** *n*: a condition in which clay platelets remain stacked by a polyvalent cation, such as calcium, and are deflocculated by use of a thinner.

**controlled directional drilling** *n*: see *directional drilling*.

**controller** *n*: an electric device used for governing the power that goes to an apparatus to which it is connected.

**control panel** *n*: switches and devices to start, stop, measure, monitor, or signal what is taking place.

**control pod** *n*: see *hydraulic control pod*.

**control valve** *n*: a valve designed to regulate the flow or pressure of a fluid.

**control well** *n*: a well previously drilled in an area of drilling interest, the data from which may be a reliable source of information in the planning of a new well.

**conventional completion** *n*: a method for completing a well in which tubing is set inside 4½-inch or larger casing. Compare *miniaturized completion*.

**conventional coupling** *n*: piping configuration that uses ten diameters of straight full pipe upstream of a meter and straightening vanes; the downstream contains five or more full pipe diameters.

**conventional electric log** *n*: an electric log in which current flow in the logging tool was dispersed through the mud in the wellbore prior to entering the formation. As a result, formation resistivity measurements were often inaccurate. These logs are no longer used.

**conventional gas-lift mandrel** *n*: see *gas-lift mandrel*.

**conventional mud** *n*: a drilling fluid containing essentially clay and water; no special or expensive chemicals or conditioners are added.

**conventional river crossing** *n*: a waterway crossing in which pipeline construction techniques similar to those on land are used. In a conventional crossing, the route is graded and ditched; the pipe is welded, tested, and pulled across the stream; and then the pipe is tied in on each side to the cross-country line.

**conventional tank** *n*: a tank of a shape commonly used in the petroleum industry. It is not constructed to withstand any appreciable pressure or

vacuum in the vapor space; it may, therefore, be gauged directly through an open hatch.

**convergence pressure** *n*: the pressure at a given temperature for a hydrocarbon system of fixed composition at which the vapor-liquid equilibrium values of the various components in the system become or tend to become unified. The convergence pressure is used to adjust vapor-liquid equilibrium values to the particular system under consideration.

**conversion** *n*: the change in the chemistry of a mud from one type to another. Reasons for making a conversion may be (1) to maintain a stable wellbore, (2) to provide a mud that will tolerate higher weight, or density, (3) to drill soluble formations, or (4) to protect producing zones. Also called a breakover.

**converter** *n*: a device for changing alternating current to direct current or vice versa; usually, if the device changes AC to DC, it is called a rectifier.

**convey** *v*: to transfer title to property from one party to another, usually by means of a written instrument.

**coolant** *n*: a cooling agent, usually a fluid, such as the liquid applied to the edge of a cutting tool to carry off frictional heat or a circulating fluid for cooling an engine.

**cooler** *n*: a heat exchanger that reduces the temperature of a fluid by transferring the heat to a nonprocess medium.

**cooling tower** *n*: a structure in which air contact is used to cool a stream of water that has been heated by circulation through a system. The air flows countercurrently or crosscurrently to the water.

**cooling water** *n*: treated fresh water that circulates inside a diesel engine to transfer heat.

**Coordinating Fuels and Equipment Research Committee (CFR)** *n*: a committee of engine manufacturing, petroleum refining, petroleum consuming, university, government, and other technical persons who supervise cooperative testing and study of engine fuels for the Coordinating Research Council, Inc. Address: 219 Perimeter Center Parkway; Atlanta, GA 30346; (404) 396-3400.

**Coordinating Research Council, Inc. (CRC)** *n*: a nonprofit organization supported jointly by the American Petroleum Institute and the Society of Automotive Engineers, Inc. It administers

**drill in** *v*: to penetrate the productive formation after the casing is set and cemented on top of the pay zone.

**drilling and delay rental clause** *n*: the clause in an oil and gas lease that allows the lease to expire after a given period of time (often 1 year from the date of the lease) unless drilling begins or delay rental is paid. Also called "unless" clause.

**drilling and spacing unit** *n*: a parcel of land of the size required or permitted by statutory law or by regulations of a state conservation body for drilling an oil or gas well. Also called a proration unit.

**drilling blind** *n*: drilling without mud returns, as in the case of severe lost circulation.

**drilling block** *n*: a lease or a number of leases of adjoining tracts of land that constitute a unit of acreage sufficient to justify the expense of drilling a wildcat.

**drilling break** *n*: a sudden increase in the drill bit's rate of penetration. It sometimes indicates that the bit has penetrated a high-pressure zone and thus warns of the possibility of a kick.

**drilling contract** *n*: an agreement made between a drilling company and an operating company to drill and complete a well. It sets forth the obligation of each party, compensation, identification, method of drilling, depth to be drilled, and so on.

**drilling contractor** *n*: an individual or group that owns a drilling rig or rigs and contracts services for drilling wells.

**drilling control** *n*: a device that controls the rate of penetration by maintaining a predetermined constant weight on the bit. Also called an automatic driller or automatic drilling control unit.

**drilling crew** *n*: a driller, a derrickman, and two or more helpers who operate a drilling or workover rig for one tour each day.

**drilling engine** *n*: an internal-combustion engine used to power a drilling rig. From two to six engines are used on a rotary rig and are usually fueled by diesel fuel, although liquefied petroleum gas, natural gas, and, very rarely, gasoline can also be used.

**drilling engineer** *n*: an engineer who specializes in the technical aspects of drilling.

**drilling fluid** *n*: circulating fluid, one function of which is to lift cuttings out of the wellbore and to the surface. Other functions are to cool the bit and to counteract downhole formation pressure. Although a mixture of barite, clay, water, and

chemical additives is the most common drilling fluid, wells can also be drilled by using air, gas, water, or oil-base mud as the drilling mud. See *mud*.

**drilling fluid analysis** *n*: see *mud analysis*.

**drilling foreman** *n*: the supervisor of drilling or workover operations on a rig. Also called a rig manager, rig supervisor, rig superintendent, or toolpusher.

**drilling head** *n*: a special rotating head that has a gear-and-pinion drive arrangement to allow turning of the kelly and simultaneous sealing of the kelly against well pressure.

**drilling hook** *n*: the large hook mounted on the bottom of the traveling block and from which the swivel is suspended. When drilling, the entire weight of the drill stem is suspended from the hook.

**drilling in** *n*: the operation during the drilling procedure at the point of drilling into the pay formation.

**drilling line** *n*: a wire rope used to support the drilling tools. Also called the rotary line.

**drilling mud** *n*: a specially compounded liquid circulated through the wellbore during rotary drilling operations. See *drilling fluid*, *mud*.

**drilling out** *n*: the operation during the drilling procedure when the cement is drilled out of the casing before further hole is made or completion is attempted.

**drilling pattern** *n*: see *well spacing*.

**drilling platform rig** *n*: see *platform rig*.

**drilling rate** *n*: the speed with which the bit drills the formation; usually called the rate of penetration.

**drilling recorder** *n*: an instrument that records hook load, rate of penetration, rotary speed and torque, pump rate and pressure, mud flow, and so forth during drilling.

**drilling rig** *n*: see *rig*.

**drilling slot** *n*: see *keyway*.

**drilling spool** *n*: a fitting placed in the blowout preventer stack to provide space between preventers for facilitating stripping operations, to permit attachment of choke and kill lines, and for localizing possible erosion by fluid flow to the spool instead of to the more expensive pieces of equipment.



**drill site** *n*: the location of a drilling rig.

**drill site opinion** *n*: the written statement of opinion for a title examiner on the status of the title to a drill site, usually in letter form. Compare *division order opinion*, *title opinion*.

**drill stem** *n*: all members in the assembly used for rotary drilling from the swivel to the bit, including the kelly, drill pipe and tool joints, drill collars, stabilizers, and various specialty items. Compare *drill string*.

**drill stem safety valve** *n*: a special valve normally installed below the kelly. Usually, the valve is open so that drilling fluid can flow out of the kelly and down the drill stem. It can, however, be manually closed with a special wrench when necessary. In one case, the valve is closed and broken out, still attached to the kelly to prevent drilling mud in the kelly from draining onto the rig floor. In another case, when kick pressure inside the drill stem exists, the drill stem safety valve is closed to prevent the pressure from escaping up the drill stem. Also called lower kelly cock, mud saver valve.

**drill stem test** *n*: the conventional method of formation testing. The basic drill stem test tool consists of a packer or packers, valves or ports that may be opened and closed from the surface, and two or more pressure-recording devices. The tool is lowered on the drill string to the zone to be tested. The packer or packers are set to isolate the zone from the drilling fluid column. The valves or ports are then opened to allow for formation flow while the recorders chart static pressures. A sampling chamber traps clean formation fluids at the end of the test. Analysis of the pressure charts is an important part of formation testing.

**drill string** *n*: the column, or string, of drill pipe with attached tool joints that transmits fluid and rotational power from the kelly to the drill collars and bit. Often, especially in the oil patch, the term is loosely applied to both drill pipe and drill collars. Compare *drill stem*.

**drill to granite** *v*: to drill a hole until basement rock is encountered, usually in a wildcat well. If no hydrocarbon-bearing formations are found above the basement, the well is assumed to be dry. The term comes from the fact that basement rock is sometimes granite.

**drill under pressure** *v*: to carry on drilling operations with a mud whose density is such that it exerts less pressure on bottom than the pressure in the formation while maintaining a seal (usually with a rotating head) to prevent the well fluids from blowing out under the rig. Drilling under

pressure is advantageous in that the rate of penetration is relatively fast; however, the technique requires extreme caution.

**drip** *n*: 1. the water and hydrocarbon liquids that have condensed from the vapor state in the natural gas flow line and accumulated in the low points of the line. 2. the receiving vessel that accumulates such liquids.

**drip accumulator** *n*: the device used to collect liquid hydrocarbons that condense out of a wet gas traveling through a pipeline.

**drip gasoline** *n*: hydrocarbon liquid that separates in a pipeline transporting gas from the well casing, lease separation, or other facilities and drains into equipment from which the liquid can be removed.

**drip pot** *n*: a device installed in a flow recorder's manifold to collect liquid that may condense out the gas in the manifold and to minimize the chance of inaccurate differential and static readings caused by liquid in the manifold lines.

**drive** *n*: 1. the means by which a machine is given motion or power, or by which power is transferred from one part of a machine to another. 2. the energy of expanding gas, inflowing water, or other natural or artificial mechanisms that forces crude oil out of the reservoir formation and into the wellbore. *v*: to give motion or power.

**drive bushing** *n*: see *kelly bushing*.

**drive chain** *n*: a chain by means of which a machine is propelled.

**drive-in unit** *n*: a type of portable service or workover rig that is self-propelled, using power from the hoisting engines. The driver's cab and steering wheel are mounted on the same end as the mast support; thus the unit can be driven straight ahead to reach the wellhead. See *carrier rig*.

**drive pipe** *n*: see *conductor casing*.

**drive rollers** *n*: see *kelly bushing rollers*.

**drive shaft** *n*: a shaft that transmits mechanical power to drive a machine.

**driving fluid** *n*: in a hydraulic coupling or torque converter, the moving fluid that impinges against blades to move the member being driven.

**drlg** *abbr*: drilling; used in drilling reports.

**drogue** *n*: a current-measuring instrument that is suspended by a buoy and lowered to a specified ocean depth. The effect of the current on the drogue is shown by the movement of the buoy at the surface.

the ROB does not contact both forward and aft bulkheads. The formula assumes ROB to be a flowable liquid.

**wedge formula** *n*: a mathematical means of approximating the small quantities of liquid and solid cargo and free water on board before a vessel is loaded and after its cargo is discharged, based on cargo compartment dimensions and vessel trim. It is used only when a wedge exists and when the liquid does not touch all bulkheads.

**wedge tables** *n pl*: precalculated ship's tables based on the wedge formula and displayed in much the same way as the ship's innage/ullage tables. Used for small quantities when the liquid does not touch all bulkheads.

**weevil** *n*: shortened form of boll weevil. See *boll weevil*.

**weigh scale** *n*: a device for determining either the mass or the weight of a body, depending on the apparatus and procedure employed.

**weight** *n*: 1. in mud terminology, refers to the density of a drilling fluid. 2. of a measurement, expresses degree of confidence in result of measurement of a certain quantity compared with result of another measurement of the same quantity.

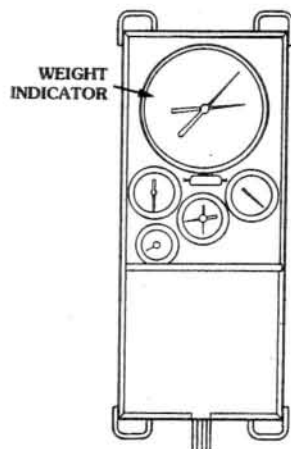
**weigh tank** *n*: a tank used with a weigh scale for measurement of the liquid contents of the tank.

**weight bar** *n*: see *sinker bar*. Also called stem.

**weighted average cost of gas (WACOG)** *n*: cost calculated as the total cost of all gas purchased during a base period divided by either the total quantity purchased (unit of production) or the system throughput (unit of sales) during the same period. This rate, plus any application of any pending surcharge adjustments, serves as the basis on which system tariff rates are computed and made effective.

**weight indicator**

*n*: an instrument near the driller's position on a drilling rig that shows both the weight of the drill stem that is hanging from the hook (hook load) and the weight that is placed on the bit by the drill collars (weight on bit).



**weighting material** *n*: a material that has a high specific gravity and is used to increase the density of drilling fluids or cement slurries.

**weight on bit (WOB)** *n*: the amount of downward force placed on the bit by the weight of the drill collars.

**weight-set packer** *n*: a packer whose packing elements are activated when weight from the tubing string is applied. To set some packers, rotation as well as weight is required. See *packer*.

**weight up** *v*: to increase the weight or density of drilling fluid by adding weighting material.

**weir** *n*: a metal plate installed in a separator, treater, or mud tank and used to regulate liquid level or, in the case of a metering separator, to measure flow.

**welded tuff** *n*: a pyroclastic deposit hardened by the action of heat, pressure from overlying material, and hot gases.

**well** *n*: the hole made by the drilling bit, which can be open, cased, or both. Also called borehole, hole, or wellbore.

**wellbore** *n*: a borehole; the hole drilled by the bit. A wellbore may have casing in it or it may be open (uncased); or part of it may be cased, and part of it may be open. Also called a borehole or hole.

**wellbore cleanup** *n*: see *wellbore soak*.

**wellbore pressure** *n*: 1. bottomhole pressure. 2. casing pressure.

**wellbore soak** *n*: an acidizing treatment in which the acid is placed in the wellbore and allowed to react by merely soaking. It is a relatively slow process, because very little of the acid actually comes in contact with the formation. Also called wellbore cleanup.

**well completion** *n*: 1. the activities and methods of preparing a well for the production of oil and gas or for other purposes, such as injection; the method by which one or more flow paths for hydrocarbons are established between the reservoir and the surface. 2. the system of tubulars, packers, and other tools installed beneath the wellhead in the production casing; that is, the tool assembly that provides the hydrocarbon flow path or paths.

**well control** *n*: the methods used to control a kick and prevent a well from blowing out. Such techniques include, but are not limited to, keeping the borehole completely filled with drilling mud of the proper weight or density during all operations,