

**Gas Leasing Terminology A to Z** This is by no means a complete list of terms used. The Industry is growing by leaps and bounds.

## A

**Abandon:** To permanently plug a dry hole or well that no longer produces.

**Abstract Of Title:** A chronological history of ownership of a tract of land.

**Acidizing A Well:** Increasing the flow of oil from a well by pumping hydrochloric acid into the well under high pressure. This re-opens and enlarges the pores in the oil-bearing limestone formation.

**Acre:** The most common of land measure in the United States. A square 210 feet on a side (44,100 sq. ft.) would be a bit larger than an acre (43,560 sq. ft.). There are 640 acres in a square mile.

**Acre-Foot:** In the U.S., the thickness of a pay zone is measured in feet, and the area of the reservoir is measured in acres. An acre-foot is a volume of reservoir rock that is one acre in area and one foot thick.

**AFE (Authorization For Expenditure):** An estimate of the costs of drilling and completing a proposed well, which the operator provides to each working interest owner before the well is commenced.

**Air Drilling:** A form of rotary drilling that uses compressed air instead of mud. Used predominantly in shallow, low pressure areas.

**Allowable:** The amount of oil and/or gas a well is permitted by state authorities to produce. Not all states impose allowables.

**Annular Space:** The space between a well's casing and the wall of the borehole.

**Annulus Of A Well:** The space between the surface casing and the inner, producing wellbore casing.

**Anticline:** A geological term describing a fold in the earth's surface with strata sloping downward on both sides from a common crest. Anticlines frequently have surface manifestations like hills, knobs and ridges. At least 80 percent of the world's oil and gas has been found in anticlines.

**API:** American Petroleum Institute, a petroleum industry association that sets standards for oil field equipment and operations.

**API Gravity:** The gravity (weight per unit of volume) of crude oil expressed in degrees according to an American Petroleum Institute recommended system. The higher the API gravity, the higher the crude. High-gravity crude's are generally considered more valuable.

**Assignment:** The sale, transfer or conveyance of all or a fraction of ownership interest or rights owned in real estate or other such property. The term is commonly used in the oil and gas business to convey working interest, leases, royalty, overriding royalty interests and net profit interests.

**Associated Gas:** The gas that occurs with the oil either as free gas or in a solution. When occurring alone, it is referred to as unassociated gas.

## B

**Back-In Interest:** Form of carried interest in which the latter converts to a regular working interest after payout, that is, after the carrying parties have recouped their costs, the carried party converts to a regular fractional working interest, paying its share of costs and receiving its share of revenues.

**Barrel Standard (BBL):** Unit of measurement in the petroleum industry. One barrel of oil equals 42 U.S. gallons.

**Basement Rock:** Igneous or metamorphic rock lying below sedimentary formation in the earth's crust. Basement rock does not contain petroleum deposits.

**Basin:** A depression in the earth's crust in which sedimentary materials have accumulated. Such a basin may contain oil or gas fields.

**Bbl:** A barrel of 42 U.S. gallons of oil

**BCF (Billion Cubic Feet):** The cubic foot is a standard unit of measure for gas at atmospheric pressure.

**Behind Pipe:** If a well drills through several pay zones and is completed in the deepest productive reservoir, casing is set all the way down to the producing zone. Viewed from (a perspective) inside the borehole, reserves in the shallower pay zones up the hole are behind the casing.

**BHP (Bottom Hole Pressure):** The pressure of the reservoir or formation at the bottom of the hole. A decline in pressure indicates some depletion of the reservoir.

**Bleeding Core:** A core sample of rock so highly permeable and saturated that oil drips from it.

**Blind Pool:** Refers to an oil and gas limited partnership which has not committed to specific prospects, leases or properties at the time of capital formation.

**Blowout:** A sudden escape of oil or gas from a well, caused by uncontrolled high pressure. It usually occurs during drilling.

**Blowout Insurance:** An insurance policy that protects the insured party (working interest owner) from liabilities which might arise from a blowout during the drilling, completion or production of a well.

**Blue Sky Law:** State regulations governing an offering to sell securities within the state.

**BOEPD:** Barrels Of Oil Equivalent Per Day.

**Boiler Plate Offer:** A term often used to describe a standard company lease offer. Boiler plate leases generally grant many rights to the company that an informed landowner would strike out. Some of these often include royalties paid after expenses are deducted, free storage and free pipeline right of ways.

**Bonus:** A monetary incentive given by the company to the mineral owner for executing or ratifying an oil, gas and mineral lease.

**BOP (Blowout Preventor):** An assembly of heavy-duty valves attached to the top of a well casing to control pressure.

**BOPM:** Barrels Of Oil Per Month.

**Bottom Hole Pressure (BHP):** The pressure of the reservoir or formation at the bottom of the well. Flowing bottom hole pressure and shut-in bottom hole pressure are measured under flowing and shut-in conditions respectively. A decline in pressure indicates some depletion of the reservoir.

**Bottom-Hole Pump:** A compact, high-volume pump located in the bottom of a well, not operated by sucker rods or a surface power unit.

**Bridle:** The cable link between the "horsehead" and the pump on a pumping unit.

**BS:** A brownish substance liberally applied during the leasing negotiations. Most often spread during a "hard sales close" by an overzealous landman.

**BS&W (Basic Sediment & Water):** Material pumped up with oil and gas which must be separated out.

**BTU (British Thermal Unit):** A standard measure of heat content in a fuel. One BTU equals the amount of energy required to raise the temperature of one pound of water one degree Fahrenheit at or near 39.2 degrees Fahrenheit.

**Butane:** A hydrocarbon associated with petroleum. It is gaseous at ordinary atmospheric conditions.

## C

**CAOF (Calculated Absolute Open Flow):** A figure representing a gas well's theoretical producing capability per day.

**Capital Asset:** An asset acquired as an investment, for the purpose of creating a product or service intended to be used in the activities or operations of a business.

**Capital Costs (Oil & Gas Tax Usage):** For Federal Income Tax purposes, the costs of Capital Expenditures which may be recovered by deduction against income (through depreciation and depletion).

**Capital Expenditure:** An expenditure intended to benefit the future activities of a business, usually by adding to the assets of a business, or by improving an existing asset.

**Capitalize:** To treat certain expenditures as Capital Expenditures for Federal Income Tax computations.

**Carried Interest:** A fractional working interest in an oil and gas lease that comes about through an arrangement between co-owners of a working interest.

**Casing Pipe:** Used in oil wells to reinforce the borehole. Sometimes several casings are used, one inside the other. The outer casing, called the "surface pipe", shuts out water and serves as a foundation for subsequent drilling.

**Casinghead:** The portion of the casing that protrudes above the surface and to which control valves and flow pipes are attached.

**Casinghead Gas:** Natural Gas produced from an oil well, as opposed to gas produced from a gas well.

**Cavings Rock:** Fragments that break off from the walls of a borehole and fall into the borehole during drilling operations.

**Cement (CMT):** Fluid cement is mixed at the surface, pumped to the bottom of a cased well, forced to flow around the lower end of the casing and up into the space between the casing and the borehole. When cement solidifies (sets), it holds the casing in place and provides support.

**Cement Squeeze:** Forcing cement into the perforations, large cracks and fissures in the wall of a borehole to seal them off.

**Choke:** An orifice installed in a pipeline at the well surface to control the rate of flow.

**Christmas Tree:** An assembly of valves, gauges and chokes mounted on a well casinghead to control production and the flow of oil or gas to the storage tanks or pipelines.

**Circulate (CIRC):** To pump drilling fluid into the borehole through the drill pipe and back up the annulus.

**Circulation, Lost:** When the mud does not re-circulate to the surface because it is disappearing into a thief zone, a highly porous cavity. Such a zone must be immediately plugged with lost circulation materials (nut shells, sawdust, newspapers, cellophane, etc.), slurry or a chemical mix. Otherwise the well is at the mercy of any sudden high-pressure surge.

**Clean Oil:** Crude Oil containing less than 1 percent sediment and water; “pipeline oil”, oil clean enough to send through a pipeline.

**CO2 Injection:** A secondary recovery technique in which carbon dioxide (CO<sub>2</sub>) is injected into wells as part of a miscible recovery program.

**Common Carrier:** A person or company in the business of transporting the public or goods for a fee. In the industry, a person or company engaged in the movement of petroleum products, like a public utility.

**Completed Well:** A well made ready to produce Oil or Natural Gas. Completion involves cleaning out the well, running steel casing and tubing into the hole, adding permanent surface control equipment and perforating the casing so oil or gas can flow into the well and be brought to the surface.

**Compulsive Integration:** After the Department of Environmental Conservation (DEC) issues a well permit, you will be required to elect an option for how your “unleased acreage” in the spacing unit will be integrated with other properties in the unit. Your election will be finalized by issuance of a compulsory integration order after a public hearing. This process consolidates control and management of well operations with the well operator who holds the permit from DEC. If you have leased your oil and gas rights to someone else, then you are not required to make an election; your lessee will make the decision if necessary. You will be offered a choice from the following options:

- Integration as a royalty owner
- Integration as a non-participating owner
- Integration as a participating owner

Each option presents different risks and potential rewards. The option you select may subject you to certain costs and obligations, and there is no guarantee that a well will make money. You should carefully consider all the implications of your decision. If no permit is issued, then your acreage will not be affected.

**Condensate:** Liquid hydrocarbons separated from Natural Gas, usually by cooling.

**Confirmation Well:** A well drilled to “prove” the formation encountered by an exploratory well.

**Connate Water:** The water present in a petroleum reservoir in the same zone occupied by oil and gas considered by some to be the residue of the primal sea. Connate Water occurs as a film of water around each grain of sand in granular reservoir rock and is held in place by capillary attraction.

**Conveyance:** A written contract between a grantor and grantee, used to transfer title or rights to real estate or property. Typical conveyances include oil, gas and mineral leases; assignments; deeds and rights of way.

**Core:** Samples of subsurface rocks taken as a well is being drilled. The core allows geologists to examine the strata in proper sequence and thickness.

**Correlative Rights:** Means that each owner and producer in a common pool or source of supply of oil and gas shall have an equal opportunity to obtain and produce his just and equitable share of the oil and gas underlying such pool or source of supply.

**Crude Oil:** Liquid petroleum as it comes out of the ground. Crude Oils range from very light (high in gasoline) to very heavy (high in residual oils). Sour Crude is high in sulfur content. Sweet Crude is low in sulfur and therefore often more valuable.

**Crude Oil Equivalent:** A measure of energy content that converts units of different kinds of energy into the energy equivalent of barrels of oil.

**Cubic Foot (CF):** The most common unit of measurement of gas volume. It is the amount of gas required to fill a volume of one cubic foot under stated conditions of temperature, pressure and water vapor.

**Cuttings:** Chips and small rock fragments brought to the surface by the flow of drilling mud as it is circulated and examined by geologists for oil or gas content.

## D

**Deductions:** Tax items which may be subtracted from Gross Income to arrive at Taxable Income in Federal Income computations.

**Deed:** A written document by which the title to a property is transferred from one party (the grantor) to another (the grantee).

**Delay Rental:** Cash payments to the Mineral Rights Owner (lessor) by the Working Interest Owner (lessee), for the privilege of postponing the commencement of drilling operations on the leased property. Consideration paid to the lessor by a lessee to extend the terms of an oil and gas lease in the absence of operations and/or production that is contractually required to hold the lease. This consideration is usually required to be paid on or before the anniversary date of the oil and gas lease during its primary term, and typically extends the lease for an additional year. Nonpayment of the delay rental in the absence of production or commencement of operations will generally result in abandonment of the lease after its primary term has expired.

**Deliverability:** A well's tested ability to produce.

**Depletion:** The act of emptying, reducing or exhausting as the depletion of nature resources.

**Depletion, Restoration Of:** In Federal Income Taxation, the adding back to income of the Depletion Allowance taken on minerals not produced.

**Depreciation:** Reduction in Capital Value of a tangible asset (such as mechanical equipment, building, etc.) that results from wear, waste and obsolescence.

**Development Well:** A well drilled in an already discovered oil or gas field.

**Differential-Pressure Sticking:** A condition in which a section of drill pipe becomes stuck in deposits on the wall of the borehole.

**Directional Drilling:** Drilling at an angle, instead of on the perpendicular, by using a whip stock to bend the pipe until it is going in the desired direction. Directional Drilling is used to develop offshore leases, where it is very costly and sometimes impossible to prepare separate sites for every well; to reach oil beneath a building or some other location which cannot be drilled directly; or to control damage or as a last resort when a well has cratered. It is much more expensive than conventional drilling procedures.

**Distillate:** Liquid hydrocarbons, usually colorless and of high API Gravity, recovered from wet gas by a separator that condenses that liquid out of the gas. The present term is Natural Gas.

**Distributor:** A wholesaler of gasoline and other petroleum products; also known as a jobber. Distributors of Natural Gas are almost always regulated utility companies.

**Division Order (DO):** A contract for the sale of oil or gas, by the holder of a revenue interest in a well or property, to the purchaser (often a pipeline transmission company).

**Downhole:** Refers to equipment or operations that take place down inside a borehole.

**Downstream:** All operations taking place after Crude Oil is produced, such as transportation, refining and marketing.

**Drill Bit:** The part of the drilling tool that cuts through rock strata.

**Drilling:** The act of boring a hole through which oil or gas may be produced if encountered in commercial quantities.

**Drilling Break:** A sudden increase in the rate of drilling.

**Drilling Mud:** A mixture of clay, water, chemical additives and weighting materials that flushes rock cuttings from a well, lubricates and cools the drill bit, maintains the required pressure at the bottom of the well, prevents the wall of the borehole from crumbling or collapsing and prevents other fluids from entering the well bore.

**Drilling Rig:** The surface equipment used to drill for oil or gas, consisting chiefly of a derrick, a winch for lifting and lowering drill pipe, a rotary table to turn the drill pipe and engines to drive the winch and rotary table.

**Drillstem Test (DST):** A test through the drill pipe prior to completion to determine if oil or gas is present in a formation.

**Drill String (Also called Drill Pipe or Drill Stem):** Thirty-foot lengths of steel tubing screwed together to form a pipe connecting the drill bit to the drilling rig. The string is rotated to drill the hole and also serves as a conduit for drilling mud.

**Dry Hole:** A well that either produces no oil or gas or yields too little to make it economic to produce.

**Dry Natural Gas:** Natural Gas containing few or no natural gas liquids (liquid petroleum mixed with gas).

**DST:** Drill Stem Test.

**Dual Completion:** Completing a well that draws from two or more separate producing formations at different depths. This is done by inserting multiple strings of tubing into the well casing and inserting packers to seal off all formations except the one to be produced by a particular string.

## E

**Economic Interest:** An interest in oil and gas in the ground. It entitles the owner to a deduction from Gross Income derived from production of that oil and gas as specified in Federal Income Tax Regulations.

**Electrical Well Logging:** A method of oil exploration that originated with Conrad Schlumberger, who first tested it in 1927 on a 1,500-meter well in France. As used today, the process is very simple. Current passes into the ground, through the resistive medium and into the sonde. The resulting charts show the varying resistance, the conductance and the self-potential of the strata surrounding the well at entry level, and geophysicists use them to assay whether petroleum is present in a formation.

**Enhanced Oil Recovery:** Injection of water, steam, gas or chemicals into underground reservoirs to cause oil to flow toward producing wells, permitting more recovery that would have been possible from natural pressure or pumping alone.

**EOT:** End Of Tubing.

**Expenses (Tax Usage):** Expenditures for business items that have no future life (such as rent, utilities or wages) and are incurred in conducting normal business activities.

**Exploration:** The search for oil and gas. Exploration Operations include: aerial surveys, geophysical surveys, geophysical studies, core testing and the drilling of test wells.

**Exploratory Well:** A well drilled to an unexplored depth or in unproven territory, either in search of a new reservoir or to extend the known limits of a field that is already partly developed.

**External Casing Packer:** A device used on the inside of the well casing to seal off formations or to protect certain zones. The packer is run on the casing and expanded against the wall of the borehole at the proper depth by hydraulic pressure or fluid pressure from the well.

## F

**Farm In:** When one company drills or performs other activity on another company's lease in order to earn interest in or acquire that lease.

**Farm Out Agreement:** An arrangement in which the responsibility of exploration and development is shifted (by assignment) from the Working Interest Owner to another party.

**Favored Nations Clause:** A clause which stipulates that if higher terms are negotiated you will get the difference within a certain amount of time or your lease is invalid. A Favored Nations clause may be negotiated for both the bonus and the royalty or one or the other. A time limit specifies the time that the clause is in effect, and a geographic limitation is generally included to define the distance from the leased land where the clause is to be honored.

**Fault:** A break in the continuity of stratified rocks or even basement rocks. Faults are significant to oilmen, because they can form traps for oil when the rock fractures, they can break oil reservoirs into non-communicating sections, they help produce oil accumulations, and they form traps on their own.

**Fault Trap:** A geological formation in which oil or gas, in a porous section of rock, is sealed off by a displaced, non-porous layer.

**Fee Lands:** Privately owned, non-public lands.

**Feet Of Pay:** The thickness of the pay zone penetrated in a well.

**Field:** A geographical area under which one or more oil or gas reservoirs lie, all of them related to the same geological structure.

**Filter Cake:** A plastic-like coating that builds up inside the borehole. Such buildup can cause serious drilling problems, including sticking of the drill pipe.

**Fishing:** Recovering the tools or pipe that have been accidentally lost down the borehole by using specially designed tools that screw into or grab the missing equipment.

**Fishing Tools:** Special instruments equipped with the means for recovering objects lost while drilling the well.

**Five-Spot Water Flood Program:** A secondary-recovery operation in which four injection wells are drilled in a square pattern with the production well in the center. Water from the injection wells moves through the formation, forcing oil toward the production well.

**Flange Up:** To complete the drilling of a well.

**Flaring:** The burning of gas vented through a pipe or stack at a refinery, or a method of disposing of gas while a well is being drilled. Flaring is regulated by state agencies. Venting (letting gas escape unburned) is generally prohibited.

**Flooding:** One of the methods of enhanced oil recovery. Water Flooding or Gas Flooding might be considered secondary recovery methods.

**Flow Through Concept:** In ventures structured as partnerships (or "S" corporations), certain items or tax significance (profit, loss, etc.) are passed on to the partners (or "S" corporation shareholders) in the venture. In a venture structured as a "C" corporation, the responsible tax-paying party would be the corporation itself (not its shareholders).

**Flowing Well:** A well that produces through natural reservoir pressure and does not require pumping.

**Formation:** A geological term that describes a succession of strata similar enough to form a distinctive geological unit useful for mapping or description.

**Fossil Fuels:** Fuels that originate from the remains of living things, such as coal, oil, Natural Gas and peat.

**Fracturing (FRAC):** A well stimulation technique in which fluids are pumped into a formation under extremely high pressure to create or enlarge fractures for oil and gas to flow through. Proppants such as sand are injected with the liquid to hold the fractures open.

**Front-End Costs:** Costs that are paid out of the initial investment in a venture, first, before the venture activities actually begin.

**FTP:** Flowing Tubing Pressure.

**Future Prices:** Refers to the New York Mercantile Exchange (NYMEX) which introduced future contracts for Crude Oil in 1985 and Natural Gas in 1990.

## G

**Gamma-Ray Logging:** A technique of exploration for oil in which a well's borehole is irradiated with gamma rays. The varying emission of these rays indicates to geologists the relative density of the rock formation at different levels.

**Gas Cap:** The gas that exists in a free state above the oil in the reservoir.

**Gas Condensate:** Liquid hydrocarbons present in casinghead gas that condense when brought to the surface.

**Gas Lift:** A recovery method that brings oil from the bottom of a well to the surface by using compressed gas. Gas pumped to the bottom of the reservoir mixes with fluid, expands it and lifts it to the surface.

**Gas-Cut Mud:** Drilling mud permeated with bubbles of gas from down hole. The circulation of such mud can be severely impaired, seriously affecting drilling operations.

**Gas-Oil Ratio (GOR):** The number of cubic feet of Natural Gas produced along with a barrel of oil.



**Geophones:** The sound-detecting instruments used to measure sound waves created by explosions set off during seismic exploration work.

**Geophysicist:** A geophysicist applies the principles of physics to the understanding of geology.

**Geothermal Energy:** Energy produced from subterranean heat.

**Gross Income:** Total income from an activity, before deduction of (1) items that may be treated as expenses (such as intangible drilling costs), and (2) allowed tax items (such as depletion allowance, depreciation allowance, etc.).

**Guaranteed Payments:** Payments by a partnership to one or more of its partners for services rendered.

**Gun Perforation:** A method of creating holes in a well casing down hole by exploding charges to propel steel projectiles through the casing well. Such holes allow oil or gas from the formation to enter the well.

## H

**Hang The Rods:** To pull pump rods out of the well and hang them in the derrick on rod hangers.

**Heavy Oil:** A type of crude petroleum characterized by high viscosity and a high carbon-to-hydrogen ratio. It is usually difficult and costly to produce by conventional techniques.

**Held By Production (HBP):** Refers to an oil and gas property under lease, in which the lease continues to be enforced because of production from the property.

**Horizon:** A specific sedimentary layer in a cross section of land, especially one in which a petroleum reservoir is found.

**Horizontal Drilling:** The newer and developing technology that makes it possible to drill a well from the surface, vertically down to a certain level, then to turn at a right angle and continue drilling horizontally within a specified reservoir or an interval of a reservoir, which can result in both increased production rates and greater ultimate recoveries of hydrocarbons.

**Horsehead:** The curved guide or head piece on the well end of a pumping jack's walking beam. The guide holds the short loop of cable, called the bridle, attached to the well's pump rods.

**Hydraulic Fracturing:** A method of stimulating production from a low-permeability formation by creating fractures and fissures by applying very high fluid pressure.

**Hydrocarbons:** A large class of organic compound of hydrogen and carbon. Crude Oil, Natural Gas and Natural Gas Condensate are all mixtures of various hydrocarbons, among which methane is the simplest.

**Hydrometer:** An instrument that measures the specific gravity of liquids.

**Hydrostatic Head:** The height of a column of liquid. The difference in height between two points in a body of liquid.

## I

**Independent Producer:** 1. A person or corporation that produces oil for the market who has no pipeline system or refining. 2. An oil entrepreneur who secures financial backing and drills his own wells.

**Infill Drilling:** Wells drilled to fill in between established producing wells to increase production.

**Initial Potential (IP):** Flow rate measured during the initial completion of a well in a specific reservoir (initial daily rate of production).

**Injection Well:** A well employed for the introduction into an underground stratum of water, gas or other fluid under pressure. Injection Wells are employed for the disposal of salt water produced with oil or other waste. They are also used for a variety of other purposes: 1) Pressure Maintenance-to introduce a fluid into a producing formation to maintain underground pressures which would otherwise be reduced by virtue of the production of oil or gas 2) Secondary Recovery Operations-to introduce a fluid to decrease the viscosity of oil, reduce its surface tension, lighten its specific gravity and drive oil into producing wells resulting in greater production of oil.

**In Situ:** In its original place. Refers to methods of producing synfuels underground, such as underground gasification of a coal seam or heating oil shale underground, to release its oil.

**Intangible Drilling Costs (IDC's):** Expenditures, deductible for Federal Income Tax purposes, incurred by an operator for labor, fuel, repairs, hauling and supplies used in drilling and completing a well for production.

**Intermediate Casing:** The middle string of casing where three strings of casing are run in a well, sometimes called protection string.

**Investment Tax Credit (ITC):** A credit against income taxes, usually computed as a percent of the cost of investment in certain types of assets.

**Isopachous Map:** A geological map showing the thickness and shape of underground formations. A tool used to determine underground oil and gas reservoirs.

**ISIP:** Initial Shut-In Pressure.

## J

**Jack or Unit:** An oil-pumping unit. The pumping jack's walking beam provides the up-and-down motion to the well's pump rods.

**Jetting:** Injecting gas into a subsurface formation for the purpose of maintaining reservoir pressure.

**Joint (JT):** A single section of drill pipe, casing or tubing usually about 30 feet long.

**Joint Operating Agreement (JOA):** A detailed written agreement between the Working Interest Owners of a property which specifies the terms according to which that property will be developed.

**Joint Venture:** A large-scale project in which two or more parties (usually oil companies) cooperate. One supplies funds and the other actually carries out the project. Each participant retains control over his share, including liability and the right to sell.

**Junk Basket:** A magnet used to retrieve small tools lost in the well. A fishing instrument.

## K

**Kelly Bushing:** Part of the drilling rig. The Kelly is a long hollow steel bar that connects to the upper end of the drill string.

**Kerogen:** The hydrocarbon in oil shale. Scientists believe that Kerogen was the precursor of petroleum and that petroleum development in shale was somehow prematurely arrested.

**Keyseating:** A condition in which the drill collar of another part of the drill string becomes wedged in a section of crooked hole.

**Kick Occurs:** When the pressure encountered in a formation exceeds the pressure exerted by the column of drilling mud circulating through the hole. If uncontrolled, a kick leads to a blowout.

**Kill A Well:** To overcome down hole pressure by adding weighting elements to the drilling mud or wellbore.

## L

**Lag Time:** The time it takes for cuttings to be carried (circulate) from the bottom of the borehole up to the surface by the mud system.

**Landman:** A self-employed individual or company employee who secures oil and gas leases, check legal titles and attempts to cure title defects so that drilling can begin.

**Landowner Royalty:** The share of the gross production of the oil and gas on a property without deducting any of the cost of producing the oil or gas.

**Law Of Capture:** A legal concept on which the oil and gas law in some states is based: since petroleum is liquid, and hence mobile, it is not owned until it is produced.

**Lead Lines:** The lines through which production from individual wells is run to tanks.

**Lease (Oil and Gas):** A contract by which the owner, of the mineral rights to a property (lessor), conveys to another party (lessee), the exclusive right to explore for and develop minerals on the property during a specified primary term and as long thereafter as oil, gas or other minerals are being produced in paying quantities.

**Lease Acquisition Costs:** Bonus payments to acquire a specific oil/gas lease.

**Lease Hound:** Someone who goes out and aggressively acquires oil and gas leases from the landowner and then turns around and sells or trades them to an oil company planning to drill a well in that area.

**Lease Offering (Lease Sale):** An area of land offered for lease, usually by the U.S. Department of Interior, for the exploration for and production of specific natural resources such as oil and gas. Such a lease conveys no title or occupancy rights apart from the right to search for and produce petroleum or other natural resources subject to the conditions stated in the lease.

**Lease or Sublease:** Any transaction in which the owner of operating rights in a property assigns all or a portion of these rights to any other party.

**Lifting Costs:** The costs of producing oil from a well or lease; the operating expenses.

**Limestone:** Sedimentary rock largely consisting of calcite. On a world-wide scale, limestone reservoirs probably contain more oil and gas reserves than all other types of reservoir rock combined.

**LNG (Liquefied Natural Gas):** Natural Gas that has been converted to a liquid through cooling to -260 degrees Fahrenheit at atmospheric pressure.

**Load Water:** Fluid (water) pumped into a well, usually during a fracture treatment of a producing formation.

**Logs:** Records made from data-gathering devices lowered into the wellbore. The devices transmit signals to the surface which are then recorded on film, paper or computer and used to make the record describing the formation's porosity, fluid saturation and lithology. The filing of a log is required by the Federal Government if the drill site is on federal land.

**Lost Circulation:** A serious condition that occurs when drilling mud pumped into the well does not return to the surface but goes into the porous formation, crevices or caverns instead.

**LPG (Liquefied Petroleum Gas):** Hydrocarbon fractions lighter than gasoline, such as ethane, propane and butane, kept in a liquid state through compression and/or refrigeration commonly referred to as “bottled gas”.

## **M**

**MBbls:** One thousand barrels of oil

**MCFPD:** Thousand Cubic Feet Per Day.

**MMBOE:** Million barrels of oil equivalent

**MMBbls:** Million barrels of oil

**MMcf:** Million cubic feet of natural gas

**MMcfe:** Million cubic feet of gas equivalent, determined using the ratio of 6 Mcf of natural gas to 1 Bbl of crude oil, condensate or natural gas liquids.

**Mid-Continent Crude:** Oil produced mainly in Kansas, Oklahoma and North Texas.

**Midstream or Middle Distillates:** Refinery products in the middle of the distillation range of Crude Oil, including kerosene, kerosene-based jet fuel, home heating, range oil, stove oil and diesel fuel.

**Migration:** The movement of oil and gas through layers of rock deep in the earth.

**Milling:** Cutting a “window” in a well’s casing with a tool lowered into the hole on the drillstring.

**Mineral Rights:** The ownership of all rights to gas, oil or other minerals as they naturally occur in place at or below the surface of a tract of land.

**MMCF:** One Million Cubic Feet of Gas.

**Monocline:** A geologic formation in which all the strata are inclined in the same direction.

**Mud:** A fluid mixture of clay, chemicals and weighting materials suspended in fresh water, salt water or Diesel Oil.

**Mud Engineer:** A technician responsible for proper maintenance of the mud system.

**Mud Logger:** A technician who uses chemical analysis, microscopic examination of the cuttings and an assortment of electronic instruments to monitor the mud system for possible indications of hydrocarbons (shows).

**Multiple Completion:** Completion of a well in more than one producing formation. The tubing of each production zone extends up to the Christmas Tree or wellhead to be piped to separate tankage or gas sales lines.

## **N**

**Natural Gas:** A mixture of hydrocarbon compounds and small amounts of various non-hydrocarbons (such as carbon dioxide, helium, hydrogen sulfide and nitrogen) existing in the gaseous phase or in solution with Crude Oil in natural underground reservoirs.

**Net Profits Interest:** A share of Gross Production from a property that is carved out of a Working Interest and is figured as a function of Net Profits from operation of the property.

**Net Revenue Interest (NRI):** The percentage of revenues due an interest holder in a property, net of royalties or other burdens of the property. A Landowner leases his Mineral Rights to an oil man. The Landowner retains a royalty of c (=12.5%); his Net Revenue Interest is 12.5%. The oil man's Set Revenue Interest would be 87.5% (=100% - 12.5%).

**NGL (Natural Gas Liquids):** Portions of Natural Gas that are liquefied at the surface in lease separators, field facilities or gas processing plants leaving dry Natural Gas. They include, but are not limited to: ethane, propane, butane, natural gasoline and condensate.

O

**Octane:** A hydrocarbon of the paraffin series. It is liquid at ordinary atmospheric conditions, although small amounts may be present in the gas associated with petroleum.

**Offset Well:** A well drilled near the discovery well. Also a well drilled to prevent oil and gas from draining from one tract of land to another where a well is being drilled or is already producing.

**Oil Column:** The vertical height (thickness) of an oil accumulation above the oil-water contact.

**Oil Gravity:** The density of liquid hydrocarbons, generally measured in degrees.

**Oil In Place:** The Crude Oil estimated to exist in a field or a reservoir. Oil in the formation not yet produced.

**Oil Pool:** An underground reservoir containing oil. An oil field may contain one or more pools, each of which has its own pressure system.

**Oil Rig:** A Drilling Rig that drills for oil and gas.

**Oil Run:** (1) The production of oil during a specified period of time. (2) A tank of oil gauged, tested and put in a pipeline or trucked to a refinery or pipeline.

**Oil Shale:** A fine-grained sedimentary rock that contains kerogen partially formed oil. Kerogen can be extracted by heating the shale but at a very high cost.

**Oilfield Services:** Described as service companies that do work in and for the oilfield. These services may include: cementing, perforating, trucking, logging, etc.

**On The Pump:** A phrase used in reference to a well that no longer flows from natural reservoir energy but is produced by means of a pump.

**OPEC (Organization of Petroleum Exporting Countries):** An International Oil Cartel originally formed in 1960 and including in 1983: Saudi Arabia, Kuwait, Iran, Iraq, Venezuela, Qatar, Libya, Indonesia, United Arab Emirates, Algeria, Nigeria, Ecuador and Gabon.

**Open Hole:** The uncased part of a well.

**Operator:** The individual or company responsible for the drilling, completion and production operations of a well and the physical maintenance of the leased property.

**Organization Costs:** Direct costs incurred in the creation of a new business organization, such as an Oil and Gas Limited Partnership or Joint Venture.

**Outcrop:** A portion of bedrock or other stratum, protruding through the soil level indicating a fault or some other oil-bearing formation.

**Overriding Royalty (ORR):** A Revenue Interest in oil and gas created out of a Working Interest. Like the Lessor's Royalty, it entitles the owner to a share of the proceeds from Gross Production free of any operating or production costs.

**Overthrust Belt:** A geological system of faults and basins in which geologic forces have thrust layers of older rock above strata of newer rock that might contain oil or Natural Gas. The Eastern Overthrust Belt runs from eastern Canada through Appalachia into Alabama. The Western Overthrust Belt runs from Alaska through western Canada and the Rocky Mountains into Central America.

## P

**Packer:** A flexible rubber sleeve that is part of a special joint of pipe.

**Paid Up Lease:** An oil and gas lease in which delay rentals for the entire primary term are paid in advance with the bonus consideration.

**Pay Zones:** The term to describe the reservoir that is producing oil and gas within a given wellbore. Pay Zones (or oil reservoirs) can vary in thickness from one foot to several hundred feet.

**Payoff:** The time when a well's production begins to bring in revenues.

**Payout:** The amount of time it takes to recover the Capital Investment made on a well or drilling program.

**Perforating Gun:** An instrument lowered at the end of a wire line into a cased well. It contains explosive charges that can be electronically detonated from the surface.

**Perforation:** A method of making holes through the casing opposite the producing formation to allow the oil or gas to flow into the well. (See the Gun Perforation)

**Permeability:** A measure of the ease with which a fluid such as water or oil moves through a rock when the pores are connected. Geologists express permeability in a unit named the Darcy, but oil men use the Millidarcy because most of the rocks they come in contact with are not very permeable. Permeability is the measure of how easily a fluid can pass through a section of rock. If fluid can pass relatively easily through a given layer, then the permeability is said to be high. However, if a layer effectively blocks fluids or no fluids that can flow through the layer at all, then the layer is said to be impermeable.

**Petroleum Engineer:** A term including three areas of specialization: (1) Drilling Engineers specialize in the drilling, work over and completion operations, (2) Production Engineers specialize in studying a well's characteristics and using various chemical and mechanical procedures to maximize the recovery from the well, (3) Reservoir Engineers design and execute the planned development of a reservoir. Many U.S. Universities offer BS, MS and PhD Degrees in Petroleum Engineering.

**Petroleum Geologist:** A geologist who specializes in exploration for and production of petroleum.

**Pinch Out:** The disappearance of porous, permeable formation between two layers of impervious rock over a horizontal distance.

**Pipeline:** A tube or system of tubes for the transportation of oil or gas. Types of oil pipelines include: lead lines-form pumping well to a storage tank; flow lines-from flowing well to a storage tank; lease lines-extending from the wells to lease tanks; gathering lines-extending from lease tanks to a central accumulation point; feeder lines-extending from lease to trunk lines; and trunk lines-extending from a producing area to refineries or terminals.

**Pipeline Gas:** Gas under enough pressure to enter the high-pressure gas lines of a purchaser; gas in which enough liquid hydrocarbons have been removed so that such liquids will not condense in the transmission lines.

**Plug Back:** To block off the lower section of the borehole by setting a plug in order to perform operations in the upper part of the hole.

**Plugged & Abandoned (P&A):** This expression refers to setting cement plugs in an unsuccessful well (a dry hole) or a depleted well.

**Plugging A Well:** Filling the borehole of an abandoned well with mud and cement to prevent the flow of water or oil from one strata to another or to the surface.

**Pool:** (1) (noun) An underground reservoir containing or appearing to contain a common accumulation of oil and Natural Gas. A zone of a structure which is completely separated from any other zone in the same structure is a pool. (2) (verb) To combine two or more tracts of land into one unit for drilling purposes. This may be accomplished voluntarily or through compulsion.

**Pooling:** A term frequently used interchangeably with "Unitization" but more properly used to denominate the bringing together of small tracts sufficient for the granting of a well permit under applicable spacing rules.

**Porosity:** A measure of the number and size of the spaces between each particle in a rock. Porosity affects the amount of liquid and gases, such as Natural Gas and Crude Oil, that a given reservoir can contain. Pores are spaces between grains of sediment in sedimentary rock. A sedimentary rock with larger grain size will generally be more porous allowing more fluid or air to flow through it. Very porous rock acts somewhat like a sponge; soaking up water, air and petroleum. Generally, porosity or the degree to which a formation can hold fluid decreases with depth because increased pressures press grains together, thus decreasing the space between grains.

**Possible Reserves:** Areas in which production of Crude Oil is presumed possible owing to geological inference of a strongly speculative nature.

**Present Net Value:** The present value of the dollars (income or stream of income) to be received at some specified time in the future discounted back to the present at a specified interest rate.

**Primary Recovery:** Production in which oil moves from the reservoir into the wellbore under naturally occurring reservoir pressure.

**Primary Term:** The period of time during which an oil and gas lease will be in effect, in the absence of production, drilling or other operations specified by the lease. The oil and gas lease can be perpetuated past the primary term by production in paying quantities, drilling, operations and/or the payment of shut-in royalties specified by the lease.

**Probable Reserves:** Areas which are unproven but presumed capable of production because of geological inference for instance, proximity to proven reserves in the same reservoir.

**Producing Horizon:** Where the well is actually produced since it may be drilled to a greater depth.

**Production:** A term commonly used to describe taking natural resources out of the ground.

**Production Test:** A test made to determine the daily rate of oil, gas and water production from a potential pay zone.

**Proppants:** Materials used in hydraulic fracturing for holding open the cracks made in the formation by the fracturing process. Proppants may consist of sand grains, beads or other small pellets suspended in fracturing fluid.

**Prospect:** A lease or group of leases on which an operator intends to drill.

**Proved Behind-Pipe Reserves:** Estimates of the amount of Crude Oil or Natural Gas recoverable by re-completing existing wells.

**Proved Developed Reserves (PDP's):** Estimates of what is recoverable from existing wells with existing facilities from open, producing pay zones.

**Proved Reserves:** Estimates of the amount of oil or Natural Gas believed to be recoverable from known reservoirs under existing economic and operating conditions.

**Proved Undeveloped Reserves (PUD's):** Estimates of what is recoverable through new wells on un-drilled acreage, deepening existing wells or secondary recovery methods.

**PU:** Picked Up.

**Public Lands:** Any land or land interest owned by the Federal Government within the 50 states; not including offshore Federal lands or lands held in trust for Native American groups.

**Public Offering:** A securities (investment) offering intended for sales to the general public. It must be registered with (1) The Securities and Exchange Commission of the Federal Government and (2) The Securities-Regulating Agencies of the various states in which it will be offered.

**Pugh Clause:** A clause, which is calculated to prevent the holding of non-pooled acreage in a lease while certain portions of the lease acreage are being held under pooled arrangements. The main purpose of a Pugh clause is to protect the landowner from having their entire property held under a lease by production from a very small portion.

**Pump:** A device that is installed inside or on a production string (tubing) that lifts liquids to the surface.

**Pumper:** A person who oversees daily operations of wells in the field.

**Pumping Unit:** Surface pumping equipment driven by a motor.

**Pumping Well:** A well that does not flow naturally and requires a pump to bring product to the surface.

**Pump Off:** To pump a well so rapidly that the oil level falls below the pump's standing valve rendering the well temporarily dry.

## Q

**Quitclaim Deed:** A document by which one party (grantor) conveys title to a property by giving up any claim which he may have to title (although he does not profess that claim is necessarily valid).

## R

**R & D:** Research and Development.

**Ram:** A closure mechanism on a blowout-preventor stack.

**Re-Entry:** A well that was abandoned, but subsequent drilling and production in the area, suggest that a potential pay zone in the well was missed or passed over.

**Reamer:** A tool used to enlarge or straighten a borehole.



**Reclamation:** The restoration of land to its original condition by regarding contours and re-planting after the land has been mined, drilled or otherwise has undergone alteration from its original state.

**Recoverable Resources:** An estimate of resources including oil and/or Natural Gas, both proved and undiscovered, that would be economically extractable under specified price-cost relationships and technological conditions.

**Reef:** A buildup of limestone formed by skeletal remains of marine organisms. It often makes an excellent reservoir for petroleum.

**Refiner:** A person or company that has any part in the control or management of any operation by which the physical or chemical characteristics of petroleum or petroleum products are changed.

**Refining:** Manufacturing petroleum products by a series of processes that separate Crude Oil into its major components and blend or convert these components into a wide range of finished products, such as gasoline or jet fuel.

**Relief Well:** A well drilled in a high-pressure formation to control a blowout.

**Reserve:** That portion of the identified resource from which a usable mineral and energy commodity can be economically and legally extracted at the time of determination.

**Reserve (pool):** A porous and permeable underground formation of producible oil and/or Natural Gas confined by impermeable rock or water barriers and characterized by a single natural pressure system.

**Reservoir:** A porous, permeable sedimentary rock formation containing quantities of oil and/or gas enclosed or surrounded by layers of less permeable or impervious rock. Also called a "horizon".

**Reservoir Pressure:** The pressure at the face of the producing formation when the well is shut-in. It equals the shut-in pressure at the wellhead plus the weight of the column of oil in the hole.

**Retained Interest:** A fractional interest reserved by the owner of a whole interest when the balance of the whole interest is transferred to another party.

**Reversionary Interest:** An interest in a well property that becomes effective at a specified time in the future or on the occurrence of a specified future event.

**Risk:** The possibility of loss or injury. A level of uncertainty is associated with the various possible outcomes of the undertaking. Risk usually refers to a numerical estimate of the likelihood of the occurrence to these various possible outcomes.

**Roof Rock:** A layer of impervious rock above a porous and permeable formation that contains oil or gas.

**Rotary Drilling:** A method of well-drilling that employs a rotating bit and drilling mud to cut through rock formations.

**Roughnecks:** Members of the drilling crew.

**Round Trip:** Pulling the drillpipe from the hole to change the bit then running the drillpipe and new bit back in the hole.

**Roustabout:** A semi-skilled hand who looks after, maintains or works on producing wells and production facilities.

**Royalty:** A payment to a Landowner or Mineral Rights Owner by a Leaseholder on each unit of resources produced. A percentage share of production, or the value derived from production, paid from a producing well. It is important to specify how royalties are to be calculated and paid as well as insuring that you are given the right to have a third party auditor verify the records of the production from your wells. Your royalty should be free of the costs of drilling and producing. The **minimum** Royalty in NY is 12.5%.

**Royalty Funds:** Generally speaking, a Royalty Fund is when Royalty Interests are being bought, sold and held by the funds sponsors. In nearly all leasing situations, once a lease has been developed, it provides a revenue stream. A portion of the revenue stream is set aside for royalty which generally amounts to 12.5% to 20% and Overriding Royalty and/or Carried Working Interest of 2-5%. In a Royalty Fund, the objective of the fund is to generate its revenue from royalties that are held from different producing fields throughout the country. The main feature to owning a percentage of a Royalty Fund is that with an Oil Royalty. The Royalty Owner (or Interest Owner) pays no percentage of operating or developmental costs associated with the production of the oil or gas. Royalty programs generally offer a low risk factor along with a relatively low return. However, their main feature is that these types of programs last for many, many years.

**RU:** Rig Up.

**Runs:** The transfer and delivery of Crude Oil and/or gas sold from a lease or leases; refers to either the measured volume sold and/or the dollar amount of the sale.

**Run Ticket:** A record of the oil run from a lease tank into a connecting pipeline. An invoice for oil delivered.

**Running The Tools:** Putting the drillpipe, with the bit attached, into the hole in preparation for drilling.

## S

**Salt Dome:** A subsurface mound or dome of salt.

**Salt-Bed Storage:** Storage of petroleum products in underground formations of salt whose cavities have been mined or leached out with superheated water.

**Sample:** Cuttings of a rock formation broken up by the drill bit and brought to the surface by the drilling mud. These are examined by geologists to identify the formation and type of rock being drilled.

**Sample Log:** A record of rock cuttings made as a well is being drilled. A record is then kept that shows the characteristics of the various strata drilled through.

**Sandstone:** Rock composed mainly of sand-sized particles or fragments of the mineral quartz.

**Saturation:** (1) The extent to which the pore space in a formation contains hydrocarbons or connate water.  
(2) The extent to which gas is dissolved in the liquid hydrocarbons in a formation.

**Schlumberger:** The founder of Electrical Well Logging; now the name for any Electrical Well Log.

**Scout:** An individual who observes and reports on competitor's leasing and drilling activities.

**Secondary Recovery:** The introduction of water or gas into a well to supplement the natural reservoir drive and force additional oil to the producing wells.

**Section:** A square tract of land having an area of one square mile (= 640 acres). There are 36 sections in a township.

**Securities:** Securities are commonly thought of as stocks and bonds. As defined by the Securities Act of 1933, however, securities include any certificate of interest or participation in any Profit Sharing Agreement, investment contract or fractional undivided interest in oil, gas or other mineral rights.

**Securities Act of 1933:** Establishes requirements for the disclosure of information for any interstate offering and sale of securities.

**Securities Exchange Act of 1934:** Established the Securities and Exchange Commission which regulates the activities of securities markets.

**Sedimentary Basin:** A large land area composed of un-metamorphized sediments. Oil and gas commonly occur in such formations.

**Sedimentary Rock:** Rock formed by the deposition of sediment usually in a marine environment.

**Seismic 3-D:** A relatively new exploration technique used in the search for oil and gas underground structures. The basic premise behind Seismic is the same as Ultra Sound Technology used in the medical field. Sound from a shot hole is recorded from geophones and interpreted to give a picture of the underlying structures within the earth. 3-D has now become a common practice to re-define and identify known as well unknown structures. Many times these structures contain traps that hold oil and gas yet to be discovered.

**Seismic 4-D:** The newest advances in Seismic Technology which now takes into consideration a 4th dimension, which is time. With 4-D Seismic, geologists are now able to monitor the movement and mobility of oil as it is extracted in the production process.

**Seismic Exploration:** A method of prospecting for oil or gas by sending shock waves into the earth. Different rocks transmit, reflect or refract sound waves at different speeds, so when vibrations at the surface send sound waves into the earth in all directions, they reflect to the surface at a distance and angle from the sound source that indicates the depth of the interface. These reflections are recorded and analyzed to map underground formations.

**Seismograph:** A device that records natural or manmade vibrations from the earth. Geologists read what it has recorded to evaluate the oil potential of underground formations.

**Selling Expenses:** Expenses incurred in marketing interests in securities and commonly paid out of the Investor's capital investment.

**Separator:** A pressure vessel used to separate well fluids into gases and liquids.

**Service Well:** A well drilled in a known oil or Natural Gas field to inject liquids that enhance recovery or dispose of salt water.

**Set Casing:** To cement casing in the well hole; usually in preparation for producing a commercial well.

**Severance:** The owner of all rights to a tract of land can sever the rights to his land (vertically or horizontally). In horizontal severance, for example, if he chooses to sell all or part of the mineral rights, two distinct estates are created: the surface rights to the tract of land and the mineral rights to the same tract. The two estates may change hands independently of each other.

**Severance Tax:** Tax paid to the State Government by producers of oil or gas in the state.

**Shale:** A type of rock composed of common clay or mud.

**Shale Oil:** The substance produced from the treatment of kerogen, the hydrocarbon found in some shale's, which is difficult and costly to extract. About 34 gallons of Shale Oil can be extracted from one ton of ore.

**Shale Shaker:** A vibrating screen or sieve that strains cuttings out of the mud before the mud is pumped back down into the borehole.

**Sharing Arrangement:** An arrangement whereby a party contributes to the acquisition or exploration and development, of an oil and gas property and receives as compensation, a fractional interest in that property.

**Shoestring Sands:** Narrow strands of saturated formation that have retained the shape of the stream bed that formed them. In the United States, such a formation is located in Kansas.

**Shoot A Well:** A technique that stimulates production of a tight formation by setting off charges downhole that crack open the formation. The early wells were shot with nitroglycerin then dynamite was used. The nitro man has been replaced today by acidizers and frac trucks.

**Show:** An indication of oil or gas while drilling.

**Shut-Down Well/Shut-In Well (SI):** A well is shut down when initial drilling ceases for one reason or another. A well is shut in when the wellhead valves are closed, shutting off production, often while waiting for transportation or for the market to improve or for repairs.

**Shut-In (SI):** To stop a producing oil and gas well from producing.

**Shut-In Pressure (SIP):** The pressure at the wellhead when valves are closed.

**Shut-In Royalty:** A special type of royalty negotiated in the leasing of a property.

**SI:** Shut-In.

**Side Track:** When fishing operations have been unable to recover an object in the hole that prevents drilling ahead. The borehole can often be drilled around the obstacle in the original hole.

**SITP:** Shut-In Tubing Pressure.

**Skidding The Rig:** Moving a derrick from one location to another on skids and rollers.

**SN:** Seating Nipple.

**Solution Gas:** Natural Gas that is dissolved in the Crude Oil in a reservoir.

**Sour Crude or Gas:** Oil or Natural Gas containing sulfur compounds, notably hydrogen sulfide a poisonous gas.

**Source Rock:** Sedimentary rock, usually shale containing organic carbon in concentrations as high as 5-10% by weight.

**Spacing Unit:** The size (amount of surface area) of a parcel of land on which only one producing well is permitted to be drilled to a specific reservoir.

**Spot Market:** A short-term contract (typically 30 days) for the sale or purchase of a specified quantity of oil or gas at a specified price.

**Spud:** To spud a well means to start the initial drilling operations.

**Squeeze:** The procedure of pumping a slurry of cement into a particular space in the borehole (often the annulus between the borehole and the casing), so that the cement will solidify to form a seal.

**Step-Out Well:** A well drilled near a proven well but located in an unproven area that determines the boundaries of the producing formation.

**Stipper Oil Well:** An oil well capable of producing less than 10 barrels of oil per day.

**Stocktank Barrel:** A barrel of oil at the earth's surface.

**Stratigraphic Test:** A hole drilled to gather information about rock strata in an area.

**Structure:** Subsurface folds or fractures of strata, that form a reservoir, capable of holding oil or gas.

**Structured Trap:** A reservoir created by some cataclysmic geologic event that creates a barrier and prevents further migration. The most common structural traps are anticlines, in which at least 80% of the world's oil and gas have been discovered.

**Submersible Pump:** A bottom-hole group for use in an oil well when a large volume of fluid is to be filled.

**Subscription:** The manner by which an Investor participates in a drilling program through investment.

**Substructure:** A platform upon which a derrick is erected.

**Supervisory Fee:** Analogous to a management fee in an Oil and Gas Limited Partnership. It is paid by the partnership to the general partner for the direct supervision of mechanical operations at the well site.

**Surface Rights:** Surface ownership, of a tract of land, from which the mineral rights have been severed.

**Swab:** A hollow rubber cylinder with a flap (check valve) on the bottom surface. It is lowered below the fluid level in the well. This opens the check valve allowing fluid into the cylinder. The check valve flap closes, as the swab is pulled back up, lifting oil to the surface.

**Sweet Crude:** Crude Oil with low sulfur content which is less corrosive, burns cleaner and requires less processing to yield valuable product.

**Syncline:** A downfold in stratified rock that looks like an upright bowl. Unfavorable to the accumulation of oil and gas.

**Syndication Expenses:** Expenditures incurred by a partnership in connection with issuing and marketing its interest to Investors: legal fees of the issuer for securities and tax advice, accounting fees for audits and other representations included in the offering memorandum.

**Synfuels:** Fuels produced through chemical conversions of natural hydrocarbon substances such as coal and oil shale.

**Synthetic Crude Oil (Syncrude):** A Crude Oil derived from processing carbonaceous material such as shale oil or unrefined oil in coal conversion process.

**Synthetic Gas:** Gas produced from solid hydrocarbons such as coal, oil shale or tar sands.

## T

**Take-Or-Pay Contract:** A (long term) contract between a gas producer and a gas purchaser such as a pipeline transmission company.

**Tank Battery:** Group of production tanks in the field that store Crude Oil.

**Tank Bottoms:** A mixture of oil, water and other foreign matter that collects in the bottoms of stock tanks and large crude storage tanks and must be cleaned or pumped out on a regular basis.

**Tax Preference Items:** Certain items of income or special deductions from Gross Income which are given favored treatment under Federal Tax Law.

**TCF:** Trillion Cubic Feet.

**TD (Total Depth Drilled):** A well is not always completed at its TD. The producing horizon may be up hole.

**Tertiary Recovery:** The recovery of oil that involves complex and very expensive methods such as the injection of steam, chemicals, gases or heat as compared to primary recovery which involves depleting a naturally flowing reservoir or secondary recovery, which usually involves re-pressuring or water flooding.

**Therm:** A measure of heat content. One therm equals 100,000 btus.

**Third For A Quarter:** Sometimes also known as a "quarter for a third". A widely used arrangement for promoting an oil deal to another party.

**Tight Formation:** A sedimentary layer of rock cemented together in a manner that greatly hinders the flow of any gas through the rock.

**Tight Hole:** A well about which the operator keeps all information secret.

**Tight Sand:** A formation with permeability. Gas produced from a formation so designated by the Federal Energy Regulatory Commission qualifies for a higher market price.

**TIH:** Trip In Hole.

**Time Value Of Money:** The concept that a dollar in hand today is worth more than a dollar that will be received in some future year.

**Title:** The combination of factors that together constitute legal ownership of a property.

**TOH:** Trip Out Of Hole.

**Tool Pusher:** The supervisor of drilling rig operations.

**Top Lease:** A (conditional) type of lease that may be granted by the mineral rights owner of a property while a pre-existing recorded lease of that property is nearing expiration but nonetheless, is still in effect. The top lease would become effective only if and when the existing lease expires (or is terminated).

**Total Depth (TD):** The maximum depth of a borehole.

**Township:** A square tract of land six miles on a side. It consists of 36 sections of one square mile each.

**TP:** Tubing Pressure.

**Transfer Rule:** When an interest in an oil and gas property already proven to be capable of commercial production, is transferred. The transferee taxpayer is generally not entitled to percentage depletion, although he may still be entitled to cost depletion in computing his depletion allowance deduction from Gross Income.

**Trap:** A natural configuration of layers of rock where non-porous or impermeable rocks act as a barrier blocking the natural upward flow of hydrocarbons.

**Trip:** Making a “trip” is the procedure of pulling the entire string of drill pipe out of the borehole and then running the entire length of drill pipe back in the hole.

**Tubing (TBG):** Small diameter pipe threaded at both ends that is lowered into a completed well. Oil and gas are produced through a string of tubing.

**Turnkey:** A drilling contract that calls for a drilling contractor to drill a well for a fixed price to a specified depth. The purpose of drilling a well by turnkey contract may be related to the timing of Federal Income Tax Deductions. For Income Tax purposes, expenses are deductible from Gross Income as they are incurred. When a turnkey contract is entered toward the end of the current tax year, the drilling costs may be pre-paid at the time. The idea is to give a Working Interest Owner (or Investor) in the well, the opportunity to deduct the Intangible Drilling Costs from his Gross Income in the current tax year.

## U

**Unassociated Gas:** Natural Gas that occurs alone, not in solution or as free gas, with oil or condensate.

**Underwriter:** One who guarantees the sale of securities to Investors. He is at risk to the extent he assumes the responsibility of paying the Net Purchase Price to the seller at a pre-determined price. He charges a fee for this service.

**Updip Well:** A well located high on structure where the oil-bearing formation is found at a shallower depth.

**Upstream:** Activities concerned with finding petroleum and producing it compared to downstream which are all the operations that take place after production.

## V

**Vapor Pressure:** The pressure exerted by a vapor held in equilibrium with its solid or liquid state.

**Viscosity (VIS):** A fluid’s resistance to flowing.

## W

**Wall Sticking:** A condition in which a section of the drill string becomes stuck on deposits of filter cake on the wall of the borehole on a well.

**Water Drive:** The most efficient driving mechanism to force oil and gas out of the reservoir.

**Water-Driven Reservoir:** A reservoir in which the pressure that forces the oil to the surface is exerted by edge or bottom water in the field.

**Waterflooding:** A secondary recovery method in which water is injected into a reservoir to force additional oil into the wells.

**Well Program:** The procedure for drilling, casing and completing a well.

**Wellbore:** Physically a wellbore refers to a borehole. In other words, a completed well.

**Wellhead:** A device on the surface used to hold the tubing in the well. The wellhead is the originating point of the producing well at the top of the ground.

**West Texas Intermediate:** Refers to a grade of Crude Oil produced in the Permian and Midland Basin areas of West Texas. The price paid for Crude Oil varies according to quality.

**Wet:** A reservoir rock is said to be “wet” when it contains water but little or no hydrocarbons.

**Wet Gas:** Natural Gas containing liquid hydrocarbons, commonly condensate.

**Whipstock:** A steel blocking device placed in a borehole. As drilling is resumed, the whipstock forces the drill bit to veer off at a slight angle.

**WI:** Working Interest.

**Wildcat:** An exploration well drilled to a reservoir from which no oil or gas has previously been produced in the nearby surrounding areas.

**Wildcatter:** An operator who drills the first well in unproven territory.

**WL:** Wire Line.

**WOB:** Weight On Bit.

**WOC:** Waiting On Cement.

**WOO:** Waiting On Orders.

**Working Interest (WI):** An interest created by the execution of an oil and gas lease.

**Workover:** To clean out or work on a well to restore or increase production.

**Workover-Rig:** The rig used when oil men try to restore or increase a well's production.

**Write-Off:** In common usage, a reduction in Taxable Income that results when allowable deductions are subtracted from Gross Income.

## Z

**Zone:** A specific interval of rock strata containing one or more reservoirs. Used interchangeably with "formation".

**Zone Isolation:** Sealing off a producing formation while a hole is being deepened. A special sealant is injected into the formation where it hardens long enough for the hole to be drilled. Afterward, the substance again turns to liquid unblocking the formation.