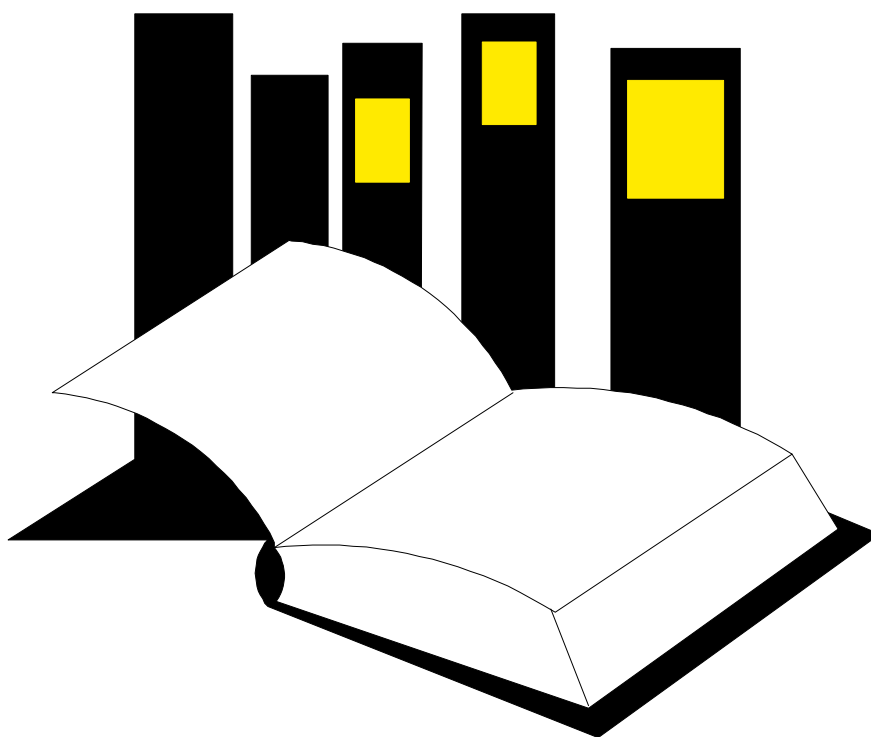


Glossary of Mineral Terms

Minerals Revenue Management



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Minerals Revenue Management

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Abbreviations Used in this Glossary

ACH	Automated Clearing House
ADP	Automated data processing
AFEE	Automated front-end enhancement
AFS	Auditing and Financial System
AGA	American Gas Association
AIRS	Automated Inspection Record System
ALEP	Allowance Limit Exception Processing
ANSI	American National Standards Institute
API	American Petroleum Institute
Bbl	Barrel
BIA	Bureau of Indian Affairs
BIS	Business Information System
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
BS&W	Basic sediment and water
Btu	British thermal unit
CFR	Code of Federal Regulations
CIRI	Cook Inlet Region, Inc.
COE	U.S. Army Corps of Engineers
COLD	Computer output on laser disk
CY	Calendar year
DOE	Department of Energy
DOI	Department of the Interior
DOJ	Department of Justice
EDI	Electronic data interchange
EEZ	Exclusive Economic Zone
EFT	Electronic funds transfer
EIS	Environmental impact statement
EOP	Explanation of payment
EOR	Enhanced oil recovery
°F	Degree Fahrenheit
FERC	Federal Energy Regulatory Commission
FOGRMA	Federal Oil and Gas Royalty Management Act of 1982
FOGRSFA	Federal Oil and Gas Royalty Simplification and Fairness Act
FY	Fiscal year

Abbreviations Used in this Glossary (cont.)

GAO	General Accounting Office
GDP	Gross domestic product
IBLA	Interior Board of Land Appeals
IDVS	Interagency Data Verification System
I&E	Inspection and Enforcement Program
IITA	Initiative for Indian Tribes and Allottees
IMDA	Indian Mineral Development Act of 1982
IMSC	Indian Minerals Steering Committee
IPAA	Independent Petroleum Association of America
KGRA	Known geothermal resource area
KGS	Known geological structure
LACT	Lease automatic custody transfer
LAN	Local area network
LMU	Logical mining unit
LWCF	Land and Water Conservation Fund
Mcf	Thousand cubic feet
MMbd	Million barrels per day
MMcf	Million cubic feet
MMS	Minerals Management Service
MRO	Monthly Report of Operations
NHPF	National Historic Preservation Fund
NPS	National Park Service
NTL	Notice to lessees and operators
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act of 1953
OECD	Organization for Economic Cooperation and Development
OIG	Office of Inspector General, Department of the Interior
OIP	Offshore Inspection Program
OIRA	Office of Indian Royalty Assistance
OMM	Offshore Minerals Management
OPEC	Organization of Petroleum Exporting Countries
OSMRE	Office of Surface Mining Reclamation and Enforcement
OTFM	Office of Trust Funds Management

Abbreviations Used in this Glossary (cont.)

PAAS	Production Accounting and Auditing System
PIF	Payor Information Form
PINC	National Potential Incident of Noncompliance List
PSI	Pounds per square inch
RIK	Royalty-in-kind
RMP	Royalty Management Program
RQS	Royalty Management Program Query System
SEMP	Safety and Environmental Management Plan
SPR	Strategic Petroleum Reserve
STATSS	State and Tribal Support System
STRAC	State and Tribal Royalty Audit Committee
TIMS	Technical Information Management System
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USGS	United States Geological Survey
WAN	Wide area network
Yd	Yard

Notice

The *Glossary of Mineral Terms* is designed to provide a general description of terms frequently used in the Federal and Indian mineral leasing program.

The glossary is **not** intended to provide legally binding definitions of any term or a comprehensive explanation of a term based on industry standards or practices. Some terms may have additional meanings beyond those provided here depending on the context.

This glossary is not intended to modify or change in any way any definition or meaning of any term as announced in any official policy pronouncement of the United States Government.

About This Glossary

The *Glossary of Mineral Terms* provides definitions of terms used in the Federal and Indian mineral leasing program. The Minerals Management Service (MMS) Royalty Management Program (RMP) distributes the glossary as a service to Federal, State, Indian, and industry representatives. A brief explanation of RMP functions may clarify many of the definitions addressed in this report.

Mineral Lease Revenues

The RMP collects four types of mineral lease revenues: bonuses, rents, minimum royalties, and royalties.

- **Bonuses.** Leases issued in areas known to contain minerals are awarded through a competitive bidding process. Bonuses represent the cash amount successfully bid to win the rights to a lease.
- **Rents.** A rent schedule is established at the time a lease is issued. Rents are annual payments, normally a fixed dollar amount per acre, required to preserve the rights to a lease while the lease is not in production.
- **Minimum Royalties.** A Federal lease may further contain a minimum royalty provision. Minimum royalty is the annual payment, on a per-acre basis, required to maintain the rights to a lease until production exceeds a minimum value. Once annual production exceeds the minimum value, minimum royalty payments are no longer required in that lease year.

Minimum Royalties are included under the entry “Other Revenues” in current RMP statistical reports and publications. “Other Revenues” include settlement payments, gas storage fees, estimated payments, and recoupments in addition to minimum royalties.

- **Royalties.** A royalty is due when production begins. Royalty payments represent a stated share or percentage of the amount or the value of the mineral produced. The royalty may be an established minimum, a step-scale, or a sliding-scale. A step-scale royalty rate increases by steps as the average production on the lease increases. A sliding-scale royalty rate is based on average production and applies to all production from the lease.

Mineral Revenue Collections and Disbursements

Revenues collected from mineral leases on Federal lands are distributed to States, to the U.S. Department of the Treasury (Treasury), and to a number of designated special-purpose accounts administered by Federal agencies, depending on the land category and applicable law

involved. The Bureau of Indian Affairs (BIA) disburses revenues collected from Indian leases to the appropriate Indian Tribes and allottees.

Royalty payments are generally due on the last day of the month following the month of production, unless that day falls on a weekend or holiday. Payments are then due on the first business day of the following month.

Since 1983, MMS has generally disbursed mineral revenues derived from leases on public domain lands and shared with the States in the month following receipt of the payment. Disbursements are made under provisions of section 104 of the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) which amended the revenue disbursement provisions of the Mineral Leasing Act of 1920 (MLA), 30 U.S.C. 191. The MMS deposits Indian revenues in accounts administered by the Office of Trust Funds Management (OTFM) where they are invested and subsequently distributed to Indian Tribes and allottees by BIA. Since revenues collected in one month are disbursed in the following month, collection totals in a given year will not equal disbursement totals for the same year.

The MMS administers leases from different land categories. Legislation and regulations govern formulas for these disbursements.

- **Offshore Lands**

Royalty, rent, and bonus revenues from Federal offshore leases on the Outer Continental Shelf (OCS) are deposited to miscellaneous receipts in the Treasury, which becomes part of the Treasury's General Fund. Under other applicable laws, specified amounts from total offshore revenues are transferred to the National Historic Preservation Fund (NHPF) and the Land and Water Conservation Fund (LWCF).

The NHPF, administered by the National Park Service, is designed to expand and accelerate historic preservation plans and activities. The NHPF provides revenues for matching grants-in-aid to States and local governments, and funds the National Trust for Historic Preservation. Offshore mineral leasing provides 100 percent of NHPF revenues.

The LWCF, administered by the National Park Service, provides revenues for the Federal Government, State governments, and local governments to purchase parks and recreation areas and to plan, acquire, and develop land and water resources for recreational use. Offshore mineral leasing provides approximately 70–90 percent of LWCF revenues.

Section 8(g)(2) of the Outer Continental Shelf Lands Act (OCSLA), as amended, 43 U.S.C. 1337(g)(2), provides that coastal States receive 27 percent of revenues generated from the leasing of lands within 3 miles of the seaward boundary of the coastal State.

- **Public Domain Lands**

The majority of Federal lands are in the public domain. Under section 35 of MLA, States other than Alaska receive 50 percent of all royalties, rents, and bonuses collected from any public domain mineral leases located within their respective boundaries.

Forty percent of remaining mineral revenues is deposited in the Reclamation Fund administered by the Bureau of Reclamation. The Reclamation Fund provides revenues to build, maintain, and operate water and associated power projects on arid and semiarid Western lands. Federal onshore mineral leasing provides approximately 40–50 percent of Reclamation Fund revenues.

The remaining ten percent of mineral revenues from public domain leases is directed into the General Fund of the Treasury through miscellaneous receipts.

Alaska receives 90 percent of all royalties, rents, and bonuses paid for mineral production on public domain leases in Alaska. The State also receives 50 percent of all royalties, rents, and bonuses generated from the National Petroleum Reserve Alaska.

- **Acquired Lands**

The MMS collects all royalties, rents, and bonuses from leases issued under the Mineral Leasing Act for Acquired Lands of 1947, 30 U.S.C. 351 *et seq.*, on behalf of a number of Federal agencies. Revenues are disbursed according to laws applicable to the particular lands involved.

Seventy-five percent of mineral receipts from leases on acquired lands within a national forest administered by the U.S. Department of Agriculture is distributed to the General Fund of the Treasury. The remaining 25 percent is distributed to the State in which the lease is located.

Seventy-five percent of mineral revenues from leases on acquired lands within a national grassland administered by the U.S. Department of Agriculture is distributed to the General Fund of the Treasury. The remaining 25 percent is distributed to the county in which the lease is located.

Seventy-five percent of mineral receipts from acquired Flood Control Act lands administered by the U.S. Army Corps of Engineers is distributed to the State in which the lease is located. The remaining 25 percent is distributed to the General Fund of the Treasury.

Mineral revenues derived from leases on acquired National Wildlife Refuge lands are shared with the county in which the lease is located, according to one of three alternative formulas prescribed by statute, with the remainder deposited in the General Fund of the Treasury.

All mineral receipts generated from leases on acquired reclamation project lands are paid to the Reclamation Fund.

Mineral revenues collected from leases on acquired military lands issued before 1981 are deposited in the General Fund of the Treasury. Mineral revenues collected for leases issued beginning January 1, 1981, are disbursed in the same manner as revenues from public domain leases.

Receipts from other acquired lands are deposited in a general Treasury account.

- **Indian Lands**

The BIA collects bonuses and rents from nonproducing leases. The MMS disburses mineral royalties and rents from producing Indian Tribal and allotted leases to OTFM. The BIA subsequently makes disbursements to Tribes and to individual Indian allottees, with the following exceptions:

- Oil and gas payments to four Tribes—the Jicarilla Apache, the Blackfeet, the Navajo, and the Southern Ute—are made directly by the lease payor to financial institutions contracted by the Tribes to receive their mineral payments.
- The BIA has authorized payors to make direct payments to selected individual Indian allottees.
- The Osage Nation manages all mineral leases on its Tribal lands and collects its own revenues.
- Solid mineral royalties are paid directly to the applicable Tribes or to a designated BIA office.

- **Alaska Native Lands**

Payments to the Cook Inlet Region, Inc., in Alaska on behalf of Alaskan Natives for the interests the Region holds in several previously all-Federal leases, are made directly by lease payors to the corporation.

Cooperative Audit Agreements

The RMP maintained cooperative agreements and delegations of authority that provided audit funding in FY 1996 to 7 Indian Tribes and 10 States under the authority provided in sections 202 and 205 of FOGRMA. Cooperative audit agreements under section 202 were in effect at the end of FY 1996 with the following Indian Tribes:

- Blackfeet
- Jicarilla Apache
- Navajo Nation
- Shoshone and Arapaho
- Southern Ute
- Ute
- Ute Mountain Ute

Delegation agreements under section 205 were in effect at the end of FY 1996 with the following States:

- California
- Colorado
- Louisiana
- Montana
- New Mexico
- North Dakota
- Oklahoma
- Texas
- Utah
- Wyoming

The cooperative or delegation agreements with the Navajo Nation, California, Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming include audits of coal, geothermal steam and heated water sources, and solid mineral leases, including phosphate, potassium, and sodium. The cooperative agreements with California, Louisiana, and Texas include the audit of royalties from leases subject to section 8(g)(2) of the OCSLA. The RMP maintained an unfunded Memorandum of Understanding with Alaska to share audit information in FY 1996.

A

Abandoned well	A well whose well bore is secured and is no longer in use. A well may be either temporarily or permanently abandoned.
Abandonment	An action disclaiming further interest in rights to an oil and gas lease. The action must be provable under strict rules of evidence and cannot be presumed since a question of individual intent is involved. Abandonment is demonstrated by plugging a well, removing installations, and terminating operations from the well.
ACH	Automated Clearing House. A computerized financial system operated to effect the electronic transfer of funds between banks. ACH is designed to accommodate a large volume of small-dollar transactions. Payors remit payments to ACH and the funds become available to the recipient the following day.
Acquired lands	Lands in Federal ownership that the Government obtained by deed through purchase, gift, exchange, or condemnation proceedings.
Active well	A well in mechanical condition for production or service use (i.e., in active production or service use).
Actual production	A Federal oil and gas lease is considered in actual production status when it contains one or more wells drilled on a lease or unit or communitization agreement basis which are producing oil or gas in paying quantities. A lease is also considered in actual production status whenever it contains one or more wells drilled on a lease or unit or communitization agreement basis which are capable of producing oil or gas in paying quantities even though production may not be occurring. See Agreement, Communitization agreement, and Unitization agreement .
ADP	Automated data processing.
AFEE	Automated front-end enhancement. A computer systems enhancement developed by the Minerals Management Service to automate the front-end processes to detect potential discrepancies, or exceptions, between sales volumes reported to the Auditing and Financial System by payors, and sales or transfer volumes reported to the Production Accounting and Auditing System by lease or

agreement operators. System-generated worksheets and automated correspondence to operators help resolve exceptions by identifying payors who may be underreporting royalties.

AFS	Auditing and Financial System. A computer system application operated by the Minerals Management Service for collecting and disbursing royalties from producing leases and rents from nonproducing leases on Federal and Indian lands.
AGA	American Gas Association. A national trade association whose members represent U.S. and Canadian distributors of natural, manufactured, and mixed gases. AGA provides information addressing sales, finances, utilization, and all phases of gas transmission and distribution.
Agent	An individual or entity authorized to act on behalf of another individual or entity.
Agreement	An arrangement approved by the Minerals Management Service between lessees or operating rights holders of different leases under which production from the leases is pooled for various purposes. Unitization and communitization agreements are the most common.
AIRS	Automated Inspection Record System. A computer system application operated by the Bureau of Land Management for storage and retrieval of oil and gas inspection and enforcement records.
ALEP	Allowance Limit Exception Processing. An automated program developed by the Minerals Management Service that employs royalty reports submitted by payors to determine compliance with regulatory allowance limits.
Alienation	In real property law, the voluntary and complete transfer of the property and possession of lands from one person to another. This includes every mode of passing realty by act of the party, as distinguished from passing realty by the operation of law.
Allocated production	A lease's proportionate share of total unit or communitized production and sales from wells committed to a unitization or communitization agreement, regardless of the physical location of the wells. The share proportion is stated in the agreement.

Allocation of receipts	The determination of revenues to be paid to counties, States, Indian Tribes or allottees, special-purpose accounts administered by Federal agencies, or the General Fund of the U.S. Department of the Treasury from mineral receipts collected during the fiscal year as required by law.
Allotted lands	Lands in which title has been conveyed to an individual Indian allottee which are administered by the Bureau of Indian Affairs for the benefit of the individual Indian owner.
Allowance	An allowable deduction from value for royalty purposes. See Processing allowance and Transportation allowance .
Anniversary date	The annual recurrence of the effective date of a lease.
ANSI	American National Standards Institute. A national coordinating body of representatives from industry and government dedicated to developing voluntary standards for various industries.
Anthracite coal	A hard, black, lustrous coal containing a high percentage of fixed carbon matter and a low percentage of volatile matter.
API	American Petroleum Institute. A trade association representing all segments of the petroleum industry from exploration through marketing. API is the largest association in the petroleum industry.
API gravity	The standard adopted by API for measuring the density or gravity of liquid petroleum products on the North American Continent, derived from specific gravity in accordance with the following equation: $API\ gravity = \frac{141.5}{Specific\ gravity} - 131.5$ <p>API gravity is expressed in degrees, a specific gravity of 1.0 is equivalent to 10 degrees API.</p>
Application	A formal request for rights to public lands or resources, or for the eventual title to those lands or resources.
Approved mine plan	A plan submitted by an operator identifying the nature and scope of proposed mining operations. Plans must be approved by an appropriate agency with jurisdictional control. Regulations that affect operator submission of a mine plan vary according to

mineral type and land category. Federal coal requires a Resource Recovery and Protection Plan approved by the Bureau of Land Management (BLM). Federal phosphate, potassium, and sodium require a mining plan approved by BLM. All minerals on Federal acquired lands require a mining plan approved by the Federal agency with jurisdiction over the land, which often involves BLM or the U.S. Forest Service. Mining plan requirements for Indian leases vary by mineral type and by Bureau of Indian Affairs and Tribal offices. Some Indian minerals require a mining plan approved by BLM.

Arm’s-length contract A contract or agreement between independent, nonaffiliated parties of opposing economic interests. In mineral leasing, an arm’s-length contract or agreement normally involves the sale or transportation of mineral resources.

Assay An examination of a mineral, ore, or alloy to determine the commercial value of selected ingredients in the substance. This process differs from an analysis that examines all ingredients in the substance.

Assignment A written transfer by one party to another party of all or a portion of an interest in a lease.

Assistant Secretary Assistant Secretary–Land and Minerals Management. An executive who serves under the Secretary of the Interior and exercises Secretarial direction and supervision over the Bureau of Land Management, the Minerals Management Service, and the Office of Surface Mining Reclamation and Enforcement.

Associated gas Gas combined with oil. Known also as gas cap gas and solution gas, it provides the drive mechanism needed to force oil to the surface of a well. Associated gas is normally present in an oil reservoir in the early stages of production.

B

Barrel/bbl A measure of volume for petroleum products. One barrel is equivalent to 42 U.S. gallons or 0.1589 cubic meters. One cubic meter equals 6.293 barrels.

BIA	Bureau of Indian Affairs. A Federal agency within the Department of the Interior responsible for facilitating the full development of the human and natural resource potential of Indian and Alaskan Native people to manage their own affairs under a trust relationship with the Federal Government.
Bid	An offer for a lease submitted by a potential lessee in the form of a cash bonus dollar amount or other commitments as specified in the final notice of sale.
BIS	Business Information System. A computer system application operated by the Minerals Management Service. BIS is an enhanced version of the former State and Tribal Support System and is compatible with the post-Business Systems Planning Implementation architecture. BIS provides States, Indian Tribes, and other Federal agencies access to Auditing and Financial System data and selected Production Accounting and Auditing System data.
Bit	The cutting or boring element used in drilling oil and gas wells. The bit consists of a cutting element and a circulating element. The circulating element permits the passage of drilling fluid and employs the hydraulic force of the fluid stream to improve drilling rates. In rotary drilling, several drill collars are joined to the bottom end of the drill pipe column, and the bit is attached to the end of the string of drill collars. Bits used in rotary drilling are either roller cone bits or diamond bits.
Bituminous coal	A coal that is high in carbon matter, with a volatility greater than anthracite and a calorific value greater than lignite. Often referred to as soft coal, bituminous coal is used primarily for electricity generation, coke production, and space heating.
BLM	Bureau of Land Management. A Federal agency within the Department of the Interior that administers public lands and natural resources. BLM programs provide for the protection, orderly development, and use of the public lands and resources under principles of multiple use and sustained yield.
Blowout	An uncontrolled flow of gas, oil, or other fluids from a well to the atmosphere. A well may blow out when formation pressure exceeds the pressure overburden of a column of drilling fluid.
BLS	Bureau of Labor Statistics. A Federal agency within the Department of Labor that collects and issues statistical

information. BLS data serves the requirements of business, labor, Congress, administrative and executive agencies, and the general public for information addressing economic and social trends.

Bonus The cash consideration paid to the United States by the successful bidder for a mineral lease. The payment is made in addition to the rent and royalty obligations specified in the lease.

Borehole The hole in the earth made by the drill; the uncased drill hole from the surface to the bottom of the well.

BS&W Basic sediment and water. The water and other extraneous material present in crude oil. BS&W content must be low before a pipeline will accept oil for delivery to a refinery. The acceptable amount depends on a number of factors, but normally extends from an upper value of 5 percent to a small fraction of 1 percent.

Btu British thermal unit. The amount of energy required to raise the temperature of 1 pound of water 1 °F when near 39.2 °F. An average Btu content of fuel is a heat value per unit quantity of fuel, determined from tests of fuel samples.

Butane A normally gaseous, paraffinic hydrocarbon (C₄H₁₀) extracted from natural gas or refinery gas streams. It includes isobutane and normal butane, and is used primarily for blending into high-octane gasoline, for residential and commercial heating, and for industrial purposes, especially the manufacture of chemicals and synthetic rubber.

C

Cadastral survey A survey relating to land boundaries and subdivisions that creates units suitable for management or defines the limits of title.

Capping A process to close a well to prevent the escape of gas.

Cap rock	The impermeable rock overlying an oil or gas reservoir that prevents migration of oil or gas out of the reservoir.
Casing	The large-diameter steel pipe placed in an oil and gas well as drilling progresses to prevent the wall of the hole from caving in during drilling, to prevent seepage of fluids, and to provide a means of extracting hydrocarbons if the well is productive.
Casinghead	The top of the casing set in a well; the part of the casing that protrudes above the surface and to which the control valves and flow pipes are attached.
Casinghead gas	Gas produced from an oil well as distinguished from gas produced from a gas well. The casinghead gas is taken off at the top of the well or at the separator.
Catalytic cracking	A type of cracking procedure that uses catalysts and lower temperatures and pressures to produce a gasoline that has a higher octane rating and a lower sulfur content than gasoline produced by thermal cracking. See Cracking and Thermal cracking .
Cement	A powder consisting of alumina, silica, lime, and other substances that hardens when mixed with water. Cement is used in the oil industry to bond casing to the walls of the well bore and to plug abandoned zones and sections of well bores.
CFR	Code of Federal Regulations. A codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.
Choke	A type of orifice installed for the purpose of restricting and controlling the flow of oil or gas.
Christmas tree	The assembly of control valves, pressure gauges, and chokes at the top of a well to control the flow of oil and gas after the well has been drilled and completed.
CIRI	Cook Inlet Region, Inc. One of 12 regional corporations established by the Alaska Native Claims Settlement Act in 1971 to manage real property and capital assets paid as compensation for the aboriginal land rights of Alaska Natives. CIRI maintains land holdings containing significant proven reserves of oil, natural gas, coal, and other mineral commodities.

COE	U.S. Army Corps of Engineers. A major command within the U.S. Department of the Army responsible for planning, designing, building, and operating water resources and other civil works projects in cooperation with Federal agencies, State agencies, and local sponsors. COE further performs real estate services, conducts engineering research and development, furnishes emergency operations support in response to national disasters, and administers an environmental restoration program for the U.S. Department of Defense and the U.S. Environmental Protection Agency.
Coke	The strong, porous residue consisting of carbon and mineral ash that is formed when the volatile constituents of bituminous coal are driven off by heat accompanied by little or no air. Coal coke is used primarily in blast furnaces for smelting ores, especially iron ore.
COLD	Computer output on laser disk. An automated process that copies mainframe reports to optical storage and allows users to access and manipulate the reports and data online as soon as they are produced.
Communitization agreement	A voluntary arrangement that combines small tracts of Federal or Indian lands, in many cases with non-Federal and non-Indian lands, to obtain a permit to drill under applicable well-spacing rules. Production is allocated to participating tracts on the basis of surface acreage.
Compensatory royalty	Money paid to compensate the lessor for royalties lost due to drainage in lieu of drilling a well that would otherwise be required under the express or implied covenants of a lease to protect the lease from drainage.
Compensatory royalty agreement	An agreement with the lessee or owner of adjacent land to compensate the government or Indian owners of unleased Federal or Indian land for drainage by a well located on adjacent land.
Competitive leasing	The Federal Government issues leases on Federal onshore lands where there are known mineral deposits, or where inference of probable mineralization may be derived from knowledge of the geology of the land. The lands are offered for lease by competitive bidding following publication of the offer of the lands for lease. The lease is issued to the highest bidder at a sale by public auction. The Federal Government offers leases of certain Outer Continental Shelf tracts by competitive sealed bid. The bids are received,

announced, and recorded and the lease is generally issued to the highest bidder. See **Noncompetitive leasing**.

Completed well

A well that has been mechanically completed for production or service use. There may be more than one completed zone in the well. See **Active well**.

Completion

Installation of downhole equipment to place a well into producing status for oil, gas, or service use from a single zone or reservoir. If separate zones are commingled in the well bore, it is considered a single completion.

Composition analysis

A process to define the composition or characteristics of a representative sample of coal, rock, or mineral through analytical methods. For many products, analysis specifies the concentration of an element or compound expressed as a percentage or other ratio. For example, an analysis of coal specifies the heating value of the commodity expressed in British thermal units.

Compression

The process of squeezing a volume of gas into a smaller space.

Condensate

A natural gas liquid with a low vapor pressure, compared with natural gasoline and liquefied petroleum gas. It is produced from a deep well where the temperature and pressure are high. Gas condenses as it rises up the well bore and reaches the surface as condensate. Similarly, condensate separates out naturally in pipelines or in a separation plant by the normal process of condensation.

Cooperative agreement

An agreement or plan of development and operation for the recovery of oil and gas in which separate ownership units are independently operated without allocation of production.

Cracking

The process of breaking down large chemical compounds into smaller compounds. The two principal types of cracking are thermal and catalytic. See **Catalytic cracking** and **Thermal cracking**.

Crude oil

An unrefined liquid petroleum consisting of a mixture of hydrocarbons. It ranges in gravity from 9 degrees API to 55 degrees API and in color from yellow to black. Crude oils may be referred to as heavy or light according to API gravity, with the lighter weight oils exhibiting the higher gravities. Viscosity varies with gravity; crude oils with lower gravity are more viscous and

oils with higher gravity are less viscous. Crude oil may have a paraffin, asphalt, or mixed base. Crude oil containing significant amounts of sulfur or sulfur compounds is called sour crude. Crude oil containing little or no sulfur is called sweet crude.

Cut oil Oil that contains water, usually in the form of an emulsion. Also known as wet oil.

CY Calendar year. A period of time, often used for accounting purposes, that extends from January 1 to December 31 of the same year.

D

Database A collection of information organized in a logical, systematic manner in a computer for quick search and retrieval.

Delineation well A well that is drilled to determine the extent of a reservoir.

Demonstrated reserves (American Petroleum Institute) A collective term for the sum of proved and indicated reserves. Proved reserves are estimated with reasonable certainty to be recovered under current economic conditions. Indicated reserves are economic reserves in known productive reservoirs in existing fields expected to respond to improved recovery techniques where (1) an improved technique has been installed but its effect cannot yet be fully evaluated, or (2) an improved technique has not been installed but knowledge of reservoir characteristics and the results of a known technique installed in a similar situation are available for use in the estimating procedure.

Demulsifier A chemical used to break down crude oil/water emulsions so that water may be removed from the oil.

Deposit A natural occurrence of a mineral or ore in sufficient concentration to encourage exploration and development.

Derrick The tower component of a drilling rig that supports the cables and blocks, which in turn raise and lower the drill stem and bit.

Development	Activities following exploration, including the installation of facilities and the drilling and completion of mines or wells for production purposes.
Development contract	An agreement between a lessee and a lessor that combines more than one solid mineral lease into a unitized area under a standard royalty rate. The mine operator then reports to the Minerals Management Service Production Accounting and Auditing System under the terms of the development contract rather than the individual leases.
Development well	A well drilled within the proven area of an oil or gas reservoir into a stratigraphic horizon known to be productive.
Diamond bit	A drilling bit composed of a steel body with a matrix of industrial diamonds on the surface. Rotation of the diamonds cuts the rock surface.
Disposal well	A well through which water is returned to subsurface formations.
Disposition	The sale or transfer of a mineral from a lease site.
Dissolved gas	Natural gas which is in solution with crude oil in the reservoir.
Distillate fuel oil	Light fuel oils distilled during the refining process and used primarily for space heating, diesel engine fuel, and electric power generation.
DOE	Department of Energy. A Cabinet-level department in the Executive Branch of the Federal Government responsible for coordinating a comprehensive and balanced national energy plan. DOE is responsible for long-term research and development of energy technology; marketing Federal power; energy conservation; the nuclear weapons program; and a central energy data collection and analysis program.
DOI	Department of the Interior. A Cabinet-level department in the Executive Branch of the Federal Government, responsible for the administration of most of the nationally owned public lands and natural resources. DOI is further responsible for American Indian reservation communities and for individuals who live in Island Territories under U.S. administration.
DOJ	Department of Justice. A Cabinet-level department in the Executive Branch of the Federal Government that serves as

counsel for the United States. DOJ is responsible for investigating, apprehending, and prosecuting offenders; representing the United States Government in Federal courts and before the Supreme Court; enforcing immigration laws; and operating the Federal prison system.

Dragline	Excavation equipment employing a cable-suspended bucket that drags along the ground collecting material to be deposited in a hopper or in a pile.
Drawworks	The hoisting mechanism on a drilling rig. The drawworks is a large winch that releases or retracts the drilling line to raise and lower the drill stem and bit.
Drill bit	The cutting or boring element used in drilling oil and gas wells. See Bit .
Drilling rig	The derrick or mast, drawworks, and attendant surface equipment of a drilling or workover unit.
Drill ship	A ship constructed with a derrick amidships to permit a well to be drilled at an offshore location, often in deep waters. A drill ship may have a ship hull, a catamaran hull, or a trimaran hull.
Drill stem	All components 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.
Drip	The small quantities of liquid hydrocarbons which sometimes condense in a natural gas line. Drip also refers to equipment installed on a gas line to remove liquids.
Dry gas	Natural gas from the well that is free of liquid hydrocarbons; gas that has been treated to remove all liquids; pipeline gas.
Dry hole	An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as a production well.
Dual accounting	A requirement for most Indian leases and for some Federal leases to pay royalty on the higher of (1) the unprocessed gas value, or (2) the combined value of separate components of a gas stream after processing (residue gas and extracted liquids) less the permitted processing allowance. Also known as “accounting for comparison.”

E

Economically recoverable resource estimate	An assessment of hydrocarbon potential that takes into account (1) physical and technological constraints on production and (2) the influence of exploration and development costs and market price on industry investment in Outer Continental Shelf exploration and production.
EDI	Electronic data interchange. A process designed to exchange information electronically to reduce paper report volume, reduce errors and expedite error correction, and provide a more current database.
EEZ	Exclusive Economic Zone. An area contiguous to the territorial sea of the United States, the Commonwealth of Puerto Rico, the Commonwealth of Northern Mariana Islands, and U.S. overseas territories and possessions that extends 200 nautical miles from the coastline.
Effective date	The date a lease or assignment becomes effective. The effective date for a lease is the first day of the month after the issue date or, upon applicant request, the first day of the month of issuance. The effective date for an assignment is the first day of the month after proper filing of all required documents.
EFT	Electronic funds transfer. The automated exchange of funds between computer systems which obviates the necessity for the physical exchange of cash, checks, or other forms of money.
EIS	Environmental impact statement. A statement prepared by a Federal agency in compliance with the National Environmental Policy Act for any major action that could have a significant effect on the human or natural environment.
Electric utility	A corporation, person, agency, authority, or other entity that owns or operates facilities for the generation, transmission, distribution, or sale of electricity, primarily for use by the public.
Emulsion	A mixture in which one liquid is uniformly distributed in another liquid. Water-oil emulsion is a typical product of oil wells.

Entrained gas	Gas suspended in bubbles in a stream of liquid such as water or oil.
Entrained liquids	Heavier liquid hydrocarbons, often in the form of mist-sized liquid droplets, occurring in a gas stream. Specially designed separators or processing facilities are used to remove the liquid from the gas stream.
EOP	Explanation of payment. A series of reports produced by the Minerals Management Service Royalty Management Program, mailed twice each month to Indian Tribes and once each month to States. EOP reports for Indian allottees are produced and distributed twice each month by the Bureau of Indian Affairs with information supplied by the Royalty Management Program. The reports address the source and nature of mineral revenue disbursements.
EOR	Enhanced oil recovery. The introduction of an artificial drive and displacement mechanism into a reservoir to produce oil that is not recoverable by primary recovery methods. The purpose of EOR is to restore formation pressure and fluid flow to a substantial portion of a reservoir by injecting fluids into injection wells located in a rock that has fluid communication with production wells. Water flooding, chemical flooding, gas injection, and thermal recovery represent principal EOR methods. Chemical flooding, most types of gas injection, and thermal methods are often called advanced EOR methods because they not only restore formation pressure but also improve displacement of oil by overcoming forces that keep the oil trapped in rock pores.
Excavation	The process of blasting, breaking, digging, and removing coal, ore, or rocks in mines.
Exploration	The process of searching for minerals preliminary to development. Fluid mineral exploration activities include (1) geophysical surveys, (2) drilling to locate an oil or gas reservoir, and (3) the drilling of additional wells after a discovery to delineate a reservoir. Solid mineral exploration includes (1) geological surveys, (2) geophysical surveys, and (3) drilling of core samples. Exploration activities enable the lessee to determine whether to proceed with development and production.
Exploratory well	A well drilled in an unexplored area where no oil or gas production exists. Also known as a wildcat well.

F

°F	Degree Fahrenheit.
Federal land	All land and interests in land owned by the Federal Government, including Outer Continental Shelf, public domain, acquired, and military lands.
Fee lands	Lands in private ownership.
FERC	Federal Energy Regulatory Commission. An independent agency created through the Department of Energy Organization Act in 1977. FERC regulates the transportation of natural gas in interstate commerce; the transportation of oil by pipeline in interstate commerce; the transmission and wholesale sales of electricity in interstate commerce; the licensing of private, municipal, and state hydroelectric projects; and provides oversight of related environmental matters.
Field	A geographical area in which one or more oil or gas wells produce. A field may refer to surface area only or to an underground productive formation. A single field may include several reservoirs separated either horizontally or vertically.
Fishing	A process to recover and remove bore tools, cables, pipe, casing, and rods that have become detached while in a well or that have been inadvertently dropped into a well.
Flaring	A process to dispose of surplus combustible vapors by igniting and burning them in the atmosphere. Flaring in significant quantities is rarely used due to the high value of gas, as well as stringent air pollution controls.
Fluid minerals	Oil, gas, and geothermal resources.
FOGRMA	Federal Oil and Gas Royalty Management Act of 1982, Public Law 97-451, 30 U.S.C. 1701 <i>et seq.</i> , enacted to ensure that royalties from oil and gas produced from Federal and Indian lands and the Outer Continental Shelf are properly collected and accounted for under the direction of the Secretary of the Interior.

FOGRSFA	Federal Oil and Gas Royalty Simplification and Fairness Act, Public Law 104-185, 110 Stat. 1700, enacted to amend the Federal Oil and Gas Royalty Management Act of 1982 and revise Minerals Management Service procedures in several respects.
Formation	A rock unit that possesses distinctive characteristics. Formations are often given names as a result of the study of the formation outcrop at the surface or based on fossils found in the formation.
Formation fracturing	A process to stimulate production by increasing the permeability of the production formation. A fluid such as water, oil, alcohol, diluted hydrochloric acid, liquefied petroleum gas, liquefied carbon dioxide, or foam is pumped down a well into a formation under high hydraulic pressure through tubing or drill pipe to fracture the formation. Propping agents such as sand grains, aluminum pellets, glass beads, or similar materials are carried in suspension by the fluid into the fractures. The fluid returns to the well when the pressure is released at the surface. The fractures then partially close on the proppants, creating channels for oil to flow to the well.
Free-use permit	A permit to a governmental agency or nonprofit group to use mineral materials, such as sand and gravel, or other resources at no charge.
FY	Fiscal year. A period of time used for accounting purposes. The Federal Government recognizes a fiscal year that begins October 1 of one year and ends September 30 of the following year.

G

GAO	General Accounting Office. An organization established by the Budget and Accounting Act of 1921 to serve as the investigative arm of Congress responsible for independently auditing Government agencies. GAO is charged with examining all matters relating to the receipt and disbursement of public funds.
Garnet	A semi-precious silicate mineral ranging in color from deep red, to a red-orange, to green. Garnet is often used as a gem stone or abrasive.

Gas	Any fluid, either combustible or noncombustible, that has neither independent shape nor volume and tends to expand indefinitely if unconfined. Gas is any substance that exists in a gaseous stage at the surface under normal conditions. Gas includes methane (CH ₄), carbon dioxide, other gaseous hydrocarbons, and nitrogen.
Gas injection well	A well used to introduce gas under high pressure into a formation as part of pressure maintenance, a secondary recovery effort, a recycling operation, or for gas storage.
Gas lost	Avoidably lost natural gas which is flared or vented (i.e., natural gas not retained in the production system for sale or use).
Gas/oil ratio	The measure of the volume of gas produced with oil, expressed in cubic feet per barrel or cubic meters per ton.
Gas plant	A physical plant through which raw gas is processed to remove heavier hydrocarbons and other chemical components.
Gas plant products	Natural gas liquids and other products such as carbon dioxide and sulfur recovered from processing raw natural gas. Finished natural gas liquids are processed through a fractionation plant. Gas plant products include ethane, propane, normal butane, isobutane, pentane, and other finished petroleum products produced at natural gas processing plants. Finished petroleum products include motor gasoline, aviation gasoline, special naphthas, kerosene, distillate fuel oil, and other miscellaneous products.
Gas storage agreement	An agreement that provides for the temporary storage of natural gas in a subsurface structure such as a salt dome.
Gas well	A well completed for the production of natural gas from one or more gas zones or reservoirs.
Gathering lines	Pipelines and other equipment normally used to transport oil or gas from a well on a lease to a central accumulation point on or near the lease site where production is measured for royalty purposes. An oil gathering system includes oil and gas separators, emulsion treaters, gathering tanks, and similar equipment. Gas gathering lines collect gas from the wells under fluctuating pressures. The gas passes through compressors to regulate pressure before the gas is introduced into trunk or

transmission lines. A gas gathering system generally includes regulators, compressors, dehydrators, and associated equipment.

Gauger	A pipeline representative who measures the quantity and quality of oil for sale or transfer from the producer to the pipeline.
GDP	Gross domestic product. The total value of goods and services produced by the Nation's economy before deduction and depreciation charges and other allowances for capital consumption. GDP includes the total purchases of goods and services by private consumers and Government, gross private domestic capital investment, and net foreign trade.
Gem	A precious or semi-precious stone such as a diamond, ruby, or topaz, characterized by hardness, transparency, and nonmetallic luster. Gems are often cut and polished for ornamental purposes.
Gem stone	A term that includes amber, coral, diamond, jet, pearl, ruby, topaz, or any stone of any variety of a gem mineral of sufficient beauty and durability for use as a personal ornament.
Geology	The scientific study of the origin, history, and structure of the Earth as recorded in rocks. A person trained in geology is a geologist. A petroleum geologist is primarily concerned with sedimentary rocks where most of the world's oil has been found. See Petroleum geology .
Geothermal resource	Hot water, steam, by-products, and associated energy extracted from geothermal reservoirs in the Earth's crust. Geothermal resources are used in turbine generators to produce electricity. The resource may also be used to provide process heat for agricultural, industrial, and space heating applications.
Gradient pressure	Pressure change in depth, expressed in psi/ft.
Gusher	A well that is flowing out of control from such pressure that gas, oil, and water escapes to the surface like a geyser. A gusher is wasteful of reservoir fluids and drive energy. In the early days of the oil industry, gushers were common and many times were the only indications that a large reservoir of oil and gas had been struck.

H

Hard rock minerals	Locatable minerals that are neither leasable minerals such as oil, gas, coal, oil shale, phosphate, sodium, potassium, sulfur, asphalt, or gilsonite, nor salable mineral materials such as common sand and gravel. Hard rock minerals include copper, lead, zinc, magnesium, nickel, tungsten, gold, silver, bentonite, barite, feldspar, fluorspar, and uranium. See Locatable minerals and Salable minerals .
Headgate	The gate valve nearest the pump or compressor on oil or gas lines.
Heating value	The amount of heat developed by the complete combustion of a unit quantity of a material. Also called heat of combustion.
Helium	A colorless, odorless, inert gaseous element. Helium is the lightest of the gases and may be extracted from natural gas by liquefaction processes. The principal source of helium is natural gas in the southwestern United States. Helium is not leasable through the Federal mineral program and is reserved for use by the Federal Government. See Liquefaction .
Hopper	A storage bin or a funnel, usually constructed in the shape of an inverted pyramid or cone, where materials are loaded at the top and discharged through a door or chute in the bottom. A hopper is often used to regulate or smooth out the discharge of ore, minerals, or other solid materials into a truck, railcar, or other transportation equipment.
Hydrocarbons	Compounds consisting of molecules of hydrogen and carbon. Hydrocarbons exist in a variety of compounds because of the strong affinity of the carbon atom for other atoms and for itself. The smallest molecules of hydrocarbons are gaseous while the largest are solids. Both oil and unprocessed “wet” natural gas are mixtures of many hydrocarbons.
Hydroelectric power	Electricity generated by an electric plant whose turbines are driven by falling water.

I

- IBLA** Interior Board of Land Appeals. A board that exercises the delegated authority of the Secretary of the Interior, including the authority to hear appeals from decisions of the Director, Minerals Management Service, concerning computation and collection of royalties on Federal and Indian mineral leases, and appeals from decisions of administrative law judges in civil penalty proceedings. In addition, the IBLA serves as the Secretary's designate to decide appeals from decisions of officers of the Bureau of Land Management concerning the public lands and mineral resources, and from decisions of officers of the Office of Surface Mining Reclamation and Enforcement and of Departmental administrative law judges concerning regulation of surface coal mining activities.
- IDVS** Interagency Data Verification System. A computerized system operated by the Bureau of Land Management and the Minerals Management Service to ensure that certain select lease data elements maintained by the two organizations are consistent and accurate.
- I&E** Inspection and Enforcement Program. A Bureau of Land Management program designed to ensure that oil and gas production on Federal and Indian leases is accurately reported by the lessee and verified by the Bureau of Land Management. The program further ensures that all drilling, producing, and abandonment operations comply with approved operating plans and that all violations are corrected.
- IITA** Initiative for Indian Tribes and Allottees. An initiative developed by the Director, Minerals Management Service to improve royalty management services to the Indian community as a result of, among other things, concerns expressed by the Special Committee on Investigations of the Senate Select Committee on Indian Affairs.
- IMDA** Indian Mineral Development Act of 1982, 25 U.S.C. 2101 *et seq.* An act that permits Indian Tribes to enter into certain agreements for the disposition of Tribal mineral resources and for other purposes.

IMSC	Indian Minerals Steering Committee. A senior policy forum of officials from the Bureau of Indian Affairs, Bureau of Land Management, and Minerals Management Service established by the Department of the Interior to improve the management of Indian minerals.
Indian allotment	An allocation of a parcel of public lands or Indian reservation lands to an Indian for individual use. Revenue from mineral production from leases on Indian allotments is paid to the individual Indian allottee. See Indian allottee .
Indian allottee	Any Indian who holds title to land or an interest in land subject to Federal restrictions against alienation. See Alienation and Indian allotment .
Indian land	Lands owned by Indians, including either Tribal lands held in trust by the United States or subject to Federal restrictions against alienation, or allotted land owned by an individual Indian with Federal restrictions against alienation. The Bureau of Indian Affairs monitors Indian leases. See Alienation .
Injected gas	High pressure gas injected into a formation to maintain or restore reservoir pressure or otherwise enhance recovery.
Injection pattern	The spacing and pattern of wells employed in an enhanced recovery project.
Injection well	The well in which fluids have been injected into an underground stratum to increase reservoir pressure.
Inventory	The measured or estimated quantity of all economic mineral production that is stockpiled at the lease site, in gas pipelines, or in gas storage. Inventory does not include the in-place reserves of small quantities of solid mineral production maintained in surge bins during the processing cycle. See Surge bin .
IPAA	Independent Petroleum Association of America. A national trade association representing oil and natural gas exploration and production companies in the United States. The membership ranges from large public companies to small, privately held businesses.

J

Joint tenants

A form of concurrent ownership that involves unity of interest, title, time, and possession. Joint tenants must have the same interest accruing under the same conveyance, commencing at the same time, and held under the same undivided possession. Joint tenancy is characterized by the right of survivorship.

K

Kelly

A heavy steel member suspended through the rotary table and connected to the topmost joint of a drill pipe to turn the drill stem as the rotary table turns. The kelly has a bored passageway that permits fluids to be circulated into the drill stem.

KGRA

Known geothermal resource area. A geologic structure in which geothermal hot water or steam has been discovered by drilling and determined to be productive. The boundary limits include all acreage presumed to be productive.

KGS

Known geological structure. A geologic structure in which an accumulation of oil and gas has been discovered by drilling and determined to be productive. The boundary limits include all acreage presumed to be productive.

L

LACT unit

Lease automatic custody transfer unit. An automated system for measuring, testing, and transferring oil from a lease gathering system into a pipeline.

LAN	Local area network. A telecommunications network that enables individuals to communicate and share information more efficiently. The network links personnel within similar organizations or functions.
Lease	A legal document executed between a landowner, as lessor, and a company or individual, as lessee, that conveys the right to exploit the premises for minerals or other products for a specified period of time over a given area.
Lease amendment	A modification of lease terms or conditions after issuance, including land description, rental obligations, royalty obligations, or other lease provisions.
Lease sale	A process conducted by the Bureau of Indian Affairs for Indian lands, the Bureau of Land Management for Federal onshore lands, and the Minerals Management Service for Federal offshore lands in which leases of certain mineral tracts are offered for lease by competitive sealed bidding and during which bids are received, announced, and recorded.
Lease term	The duration of the contract specified in the lease. Many oil and gas leases extend for a primary period of 5–10 years, and thereafter continue for as long as there is production in paying quantities. Many solid mineral leases extend for a period of 20 years and are subject to readjustment or renewal every 10–20 years thereafter.
Lessee	The person or company authorized by the lease terms to produce specific minerals from the leased land; the owner of the working interest under the lease instrument. The lessee is responsible for paying royalties but may authorize others to do so on the lessee's behalf.
Lessor	The owner of the leased land or mineral rights. The lessor typically retains a reserved royalty interest and a reversion upon expiration of the lease.
License	An authority granted by the United States to perform a particular act or series of acts upon public lands without the licensee possessing any estate or interest in the land itself. See Right-of-way .

Lignite coal	A brownish-black coal with high inherent moisture and volatile matter. Lignite, also referred to as brown coal, is used almost exclusively for electric power generation.
Linowes Commission	Commission on Fiscal Accountability of the Nation's Energy Resources. A Commission that submitted 60 recommendations in January 1982 to improve management of the Nation's energy resources and to prevent a loss of revenues owed the Federal Government, the States, and Indians. The Commission's work lead to the creation of the Minerals Management Service and enactment of the Federal Oil and Gas Royalty Management Act of 1982.
Liquefaction	A process to convert a substance in a gaseous or solid state to a liquid.
LMU	Logical mining unit. An area of land in which recoverable coal reserves can be developed as a unit in an efficient, orderly manner to conserve the reserves and other resources. An LMU may consist of one or more Federal leases and may include intervening or adjacent lands in which the United States does not own the coal. All lands in an LMU are contiguous, are under the effective control of a single operator or lessee, and are capable of being developed and operated as a single operation.
Locatable minerals	Valuable mineral deposits that are not excluded from the operation of the Mining Law of 1872 by the Mineral Leasing Act of 1920, the Mineral Leasing Act for Acquired Lands of 1947, or the Mineral Materials Act of 1947. Locatable minerals include base metals, precious metals, light metals, ferrous metals, precious and semi-precious stones, and a wide array of industrial minerals. See Mining Law of 1872, as amended .
Longwall	A method of mining in which seams of coal or trona are removed by fixed equipment working on a long working face or wall. The coal is mined in a continuous line that may be several hundred yards in length. The space from which the coal has been removed is either allowed to collapse or is completely or partially filled with rock or debris. See Shortwall .
LWCF	Land and Water Conservation Fund. The Land and Water Conservation Act of 1965 created a fund currently administered by the National Park Service to provide revenues for the Federal Government, State governments, and local governments to purchase parks and recreation areas and to plan, acquire, and

develop land and water resources for recreational use. Approximately 10–30 percent of the legislated yearly minimum of \$900 million is provided through revenues from surplus property sales and receipts from the motorboat fuels tax. The remaining 70–90 percent of the legislated yearly minimum is provided from offshore mineral leasing under the provisions of the Outer Continental Shelf Lands Act, as amended.

M

Major portion analysis	A requirement found in most Indian mineral lease terms to pay royalties on the higher of the price received by the lessee or the price paid for a major portion of like-quality production from the same field or area.
Marginal probability of hydrocarbons	The probability that oil and gas occur in commercial quantities, using existing recovery technology under current economic conditions.
Marginal well	A low-producing well. Profit from continued production may be doubtful.
Master valve	A large valve located on the Christmas tree used to shut in a well. See Christmas tree .
Matrix	The rock containing a mineral or metallic ore.
Mcf	Thousand cubic feet.
Military acquired lands	Lands acquired with military funds under military acquisition laws.
Mill/refinery/smelter	Facilities where secondary processing of mineral production occurs. Facilities are classified according to standard industry criteria: mills process lead, zinc, copper concentrates, and other products; refineries process potash, phosphate, sodium, and other products; and smelters process lead, zinc, copper metals, and other products.

Mine	An excavation in the earth for the purpose of extracting minerals. A mine may be composed of one or more leases or a development contract. See Development contract .
Mineral	Naturally occurring organic or inorganic substances with characteristics and uses that bring them within the purview of mineral laws. Minerals may be obtained under applicable laws from public lands by purchase, lease, or preemptive entry.
Mineral Leasing Act for Acquired Lands of 1947, as amended, (30 U.S.C. 351 <i>et seq.</i>)	An act that extends mineral leasing laws, including the Mineral Leasing Act of 1920 and subsequent amendments, to all lands acquired by the United States and authorizes mineral leasing on those lands. Mineral leases on acquired lands cannot be issued without the concurrence of the acquiring agency. The act requires disbursement of mineral receipts from acquired lands in the manner prescribed by legislation governing the type of land in question, including acquired national grasslands, and acquired national forest lands. See Mineral Leasing Act of 1920, as amended .
Mineral Leasing Act of 1920, as amended, (30 U.S.C. 181 <i>et seq.</i>)	An act, with subsequent amendments, that promotes the production of coal, gas, oil, oil shale, phosphate, potassium, and sodium on Federal public domain lands. The act establishes procedures to explore and develop each of these minerals and specifies terms and conditions for issuing permits and leases. Rental and royalty terms are specified for each mineral, and general conditions are established for pipeline right-of-way, lease diligence, royalty disposition, and holding restrictions. The act requires sharing royalty and other lease revenues with the States. The Secretary of the Interior is authorized to promulgate rules and regulations to implement and enforce the act.
Mineral permit	A permit that authorizes prospecting for certain leasable minerals on public lands described in the permit.
Minimum royalty	An annual payment, on a per-acre basis, required to maintain the rights to a lease until production exceeds a minimum value. Once annual production exceeds the minimum value, minimum royalty payments are no longer required in that lease year.
Mining claim	A mineral entry and appropriation of public land under the Mining Law of 1872, as amended. There are four types of mining claims or sites: lode claims, placer claims, millsites, and tunnel sites. Only tunnel sites may not be patented. A valid

lode or placer claim contains a discovery of a valuable mineral deposit that requires filing a Notice of Location document under the Mining Law of 1872, as amended. A valid millsite is used for the support of a mining or milling operation. A valid tunnel site must be diligently worked and maintained and may result in the location of lode claims. See **Notice of Location**.

**Mining Law of 1872,
as amended**

The principal Federal law governing locatable minerals in the United States. The law provides U.S. citizens with an opportunity to explore, discover, and purchase certain valuable metallic and nonmetallic minerals on Federal lands that are not closed to mineral entry. The law establishes standards and guidelines to claim mineral rights, and includes provisions for local rules to be developed consistent with Federal laws. See **Locatable minerals** and **Mining claim**.

Mmbd

Million barrels per day.

Mmcf

Million cubic feet.

MMS

Minerals Management Service. A Federal agency within the Department of the Interior that administers the Offshore Minerals Management Program and the Royalty Management Program. The Offshore Minerals Management Program is responsible for the Outer Continental Shelf leasing program and for ensuring that exploration and production of the Nation's offshore mineral resources is conducted in a safe manner with concern for the environment. The Royalty Management Program is responsible for the accurate and timely determination, collection, and distribution of royalties from Federal and Indian lands, and bonuses and rents from Federal lands.

MRO

Monthly Report of Operations (Form MMS-3160). A Minerals Management Service report used by operators to summarize all operations conducted on a Federal or Indian lease or unit or communitization agreement during a specific reporting period.

Mud

A suspension of bentonite, a clay, in water along with other components including conditioning or weighting materials such as barite. The liquid is circulated through the well bore during rotary drilling and workover operations to bring cuttings to the surface. Mud cools and lubricates the bit and drill stem, protects against blowouts by holding back subsurface pressures,

and deposits a mud cake on the wall of the borehole to prevent loss of fluids to the formation.

N

Natural gas	A compressible and expansible mixture of hydrocarbons having a low specific gravity and occurring naturally in a gaseous form. Natural gas ordinarily consists principally of methane and heavier entrained hydrocarbons, and may contain appreciable quantities of nitrogen, helium, carbon dioxide, and contaminants such as hydrogen sulfide and water vapor. Some of the gases may be found either in a gaseous state or as liquids under suitable conditions of temperature and pressure.
Net profit share lease	An Outer Continental Shelf lease that provides for payment to the United States of a percentage share of the net profits for production of oil and gas from the tract. The percentage share may be fixed in the notice of the lease sale or may be a variable of the bid, depending on the bidding system used for the lease sale.
NHPF	National Historic Preservation Fund. A fund, currently administered by the National Park Service, designed to expand and accelerate historic preservation plans and activities. NHPF provides revenues for matching grants-in-aid to States and local governments, and funds the National Trust for Historic Preservation. Offshore mineral leasing provides 100 percent of fund revenues.
Nonassociated gas	Dry natural gas that is not associated with oil in a productive reservoir, as opposed to associated gas or solution gas. See Associated gas .
Noncompetitive leasing	Leases issued to qualified applicants for land not specifically known or presumed to contain mineral or petroleum deposits in quantity. See Competitive leasing .
Notice of Location	A formal document that properly identifies the geographic location of a mining claim. The notice is recorded and maintained under section 314 of the Federal Land Policy and

Management Act of 1976 and the mining laws of the State where the claim or site is located. See **Mining claim**.

NPS National Park Service. A Federal agency within the Department of the Interior responsible for protecting and managing a diverse system of national parks, monuments, preserves, lakeshores, seashores, rivers, battlefields, historical parks, and sites that cover more than 83 million acres in 49 States, the District of Columbia, American Samoa, Guam, Puerto Rico, Saipan, and the Virgin Islands.

NTL Notice to lessees and operators. A document used by the Minerals Management Service to distribute information to lessees and operators. An NTL may be issued for several reasons, including interpreting regulations or transmitting administrative information such as the change in an agency office address.

Nuclear energy Heat from the fissioning of nuclear fuel. Steam generated in a reactor by nuclear energy is used to drive turbines to produce electricity in an electric power plant.

O

OCS Outer Continental Shelf. All submerged lands seaward and outside the area of lands beneath navigable waters. Lands beneath navigable waters are interpreted as extending from the coastline 3 nautical miles into the Arctic Ocean, the Atlantic Ocean, the Pacific Ocean, and the Gulf of Mexico, excluding the coastal waters off Texas and western Florida. Lands beneath navigable waters are interpreted as extending from the coastline 3 marine leagues into the Gulf of Mexico off Texas and western Florida.

OCSLA Outer Continental Shelf Lands Act of 1953, as amended, 43 U.S.C. 1331 *et seq.* An act that establishes procedures for U.S. jurisdiction over Outer Continental Shelf lands and authorizes the Secretary of the Interior to issue exploration permits and mineral leases for oil, gas, sulfur, and other mineral resources on those lands. The Secretary is authorized to

implement alternative bidding systems, including net profit share leases, to promote development of marginal oil and gas deposits. Significant amendments were enacted into the original law in 1978 and 1985. See **Net profit share lease**.

OECD	Organization for Economic Cooperation and Development. Current members follow: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Republic of Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States and its territories.
Offshore drilling	Drilling for oil in an ocean, gulf, or sea, usually on the Continental Shelf. A drilling unit for offshore operations may be a mobile floating vessel with a ship or barge hull, a semi-submersible or submersible base, a self-propelled or towed structure with jacking legs (jack-up drilling rig), or a permanent structure used as a production platform when drilling is completed. In general, wildcat wells are drilled from mobile floating vessels or from jack-ups, while development wells are drilled from platforms.
OIG	Office of Inspector General. An office within the Department of the Interior that performs internal audits and investigations in order to provide information and recommendations to improve operations and to detect and deter illegal activities.
Oil lost	Oil that is spilled or burned (i.e., oil not retained in the production system for sale).
Oil well	A well completed for the production of crude oil from one or more zones or reservoirs. Oil wells typically produce associated gas. See Associated gas .
OIP	Offshore Inspection Program. A program developed by the Minerals Management Service to promote safe and pollution-free operations on the Outer Continental Shelf, ensure fair and consistent inspections, and verify operator compliance with agency requirements.
OIRA	Office of Indian Royalty Assistance. An office within the Minerals Management Service responsible for providing royalty assistance and conducting an outreach program to ensure Royalty Management Program coordination and communication with

Indian Tribes and allottees as part of the Secretary of the Interior's trust responsibility to Indian mineral owners.

OMM	Offshore Minerals Management Program. See MMS .
OPEC	Organization of Petroleum Exporting Countries. Current members follow: Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.
Open-pit mining	The mining of metallic ores such as copper and iron ore by surface-mining methods. Waste, or overburden, is first removed; the mineral is then broken and loaded. Open-pit mining is distinguished from quarrying of nonmetallic materials such as limestone and strip mining of coal. See Quarrying and Strip mining .
Operating agreement	A written document between parties holding operating rights with one of the parties normally designated as the operator. The agreement contains detailed provisions for the drilling of a well, the sharing of expenses, and acceptable accounting methods.
Operator	The individual, partnership, firm, or corporation having control or management of operations on a leased area or a portion thereof. The operator may be a lessee, designated agent of the lessee, a holder of rights under an approved operation agreement, or an agent of an operating rights holder.
Ore	A mineral or mineral aggregate containing precious or useful metals in sufficient quantity or quality that may be mined for profit.
Ore body	A solid and fairly continuous mass of ore distinguished in form and character from adjoining rock. The ore body may contain lower grade ore and waste in addition to commercially profitable ore.
Orifice	An opening of a measured diameter, used for measuring the flow of fluid through a pipe or delivering a given amount of fluid through a fuel nozzle. In measuring the flow of fluid through a pipe, the orifice diameter in the side wall of the pipe must be smaller than the pipe diameter.
Orifice meter	An instrument used to measure the flow of fluid, normally gas, through a pipe.

OSMRE Office of Surface Mining Reclamation and Enforcement. A Federal agency within the Department of the Interior responsible for ensuring that coal mines are operated in a manner that protects citizens and the environment during mining, and that the land is restored to beneficial use following mining. OSMRE provides support and oversight for approved State regulatory and abandoned mine reclamation programs, and directly administers these activities on Federal and Indian lands.

OTFM Office of Trust Funds Management. OTFM is responsible for professional, technical, and managerial leadership of financial activities, programs, and functions associated with funds held in trust for individual Indians and Indian Tribes.

P

PAAS Production Accounting and Auditing System. An integrated system of both automated and manual applications operated by the Minerals Management Service to collect production and other operational data, and to ensure that royalties are paid on 100 percent of reported production.

Participating area The part of a unit area considered to be productive in paying quantities or that is necessary for unit operations. Production is allocated in the manner described in the unit agreement.

Payor A person or company reporting and paying royalties on production from a Federal or Indian lease.

Permeability The measure of a rock's ability to transmit fluids, or the ease with which fluids can flow through a porous rock.

Petroleum A naturally occurring complex, liquid hydrocarbon that may contain varying degrees of impurities. Petroleum is obtained from the rocks below the surface of the Earth by drilling down into a reservoir rock and piping the minerals to the surface. See **Crude oil** and **Hydrocarbons**.

Petroleum geology	The study of hydrocarbon-bearing rock formations. Petroleum geology addresses the origin, occurrence, movement, and accumulation of hydrocarbon fluids. See Hydrocarbons .
Petroleum rock	Sandstone, limestone, dolomite, fractured shale, and other porous rock formations where accumulations of hydrocarbons may be found. Also called source rock. See Hydrocarbons .
PIF	Payor Information Form (Form MMS-4025). A Minerals Management Service form required from each party who pays rents or royalties to the Minerals Management Service. The form provides detailed lease ownership and operations information necessary to properly account for revenues from the lease.
Pig	A device inserted into a pipeline to sweep the line clean of water, rust, or other foreign matter.
PINC	National Potential Incident of Noncompliance List. A listing of all potential violations of Minerals Management Service field operation regulations used by agency officials in the inspection of offshore facilities.
Planning area	A subdivision of an offshore area used as the initial basis for considering blocks to be offered for lease.
Plugged and abandoned	Wells in which casings have been removed, and the well bore sealed with mechanical or cement plugs.
Pocket	A small mass or body of rich ore, including an enlargement of a lode or vein.
Pooling agreement	An industry term for a communitization or unitization agreement. See Communitization agreement and Unitization agreement .
Porosity	The ratio of the holes, voids, or pores in a rock to the total volume or size of the rock.
Primary process	For solid minerals, the first stage in processing mine materials. Primary processes normally include mechanical operations that crush and size material for sale or prepare a product for secondary processing. See Secondary process .

Processing	Production methods that include extraction, fractionation, splitting, refining, or topping. Processing is designed to remove elements and compounds or to strip liquid hydrocarbon fractions from oil or gas by changing pressures or temperatures, or by introducing other materials.
Processing allowance	An allowable deduction from royalty value that includes reasonable, actual costs incurred by the payor for processing a mineral commodity. See Transportation allowance .
Producible lease	A lease where one well or several wells have discovered hydrocarbons in paying quantities, but for which there is no production during the reporting period.
Producible zone completion	The interval in a well bore that has been mechanically prepared to produce oil, gas, or other minerals. There can be more than one zone completed for production in a well bore.
Producing lease	A lease that is producing oil, gas, or other minerals in quantities sufficient to generate royalties.
Production	For fluid minerals, the phase of oil and gas operations involved with well fluids extraction, separation, treatment, measurement, etc. For solid minerals, all economic mineral quantities removed from their original position. Solid mineral production does not include pit inventory, or minerals left in place.
Production month	The month in which minerals are produced.
Propane	A gaseous or liquid hydrocarbon (C ₃ H ₈) extracted from natural gas or refinery gas streams. Propane is used primarily for residential and commercial heating and cooling, and as fuel for transportation. It is used in industry as a petrochemical feedstock.
Proven reserves (Society of Petroleum Engineers)	Reserves that can be estimated with reasonable certainty to be recovered under current economic conditions. Current economic conditions include processing costs prevailing at the time of the estimate. Proved reserves must either have facilities that are operational at the time of the estimate to process and transport those reserves to market, or a commitment of reasonable expectation to install such facilities in the future. Proved reserves can be subdivided into undeveloped and developed.

Prover	A device that calibrates meters used in measuring oil.
PSI	Pounds per square inch.
Public lands	Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management and the Minerals Management Service, without regard to the manner through which the United States acquired ownership, except (1) lands located on the Outer Continental Shelf, and (2) lands held for the benefit of Indians, Aleuts, and Eskimos. The Bureau of Land Management considers acquired lands to be a category of public lands. The Minerals Management Service distinguishes public domain lands from acquired lands for purposes of various statutory revenue distributions. See Acquired lands .

Q

Quarrying	The mining of nonmetallic minerals such as limestone through surface-mining methods. Quarrying is distinguished from open-pit mining of metallic ores such as copper and iron ore and strip mining of coal. See Open-pit mining and Strip mining .
Quartz	A common, often transparent, crystalline silica material. Amethyst and rock crystal represent two forms or varieties of quartz.

R

Reclamation Fund	A fund created under the Reclamation Act of 1902, that provides revenues to build, maintain, and operate water and associated power projects on arid and semiarid Western lands. The fund was originally supported by proceeds from sales of U.S. public lands. The Mineral Leasing Act of 1920, as amended, further augmented the fund, by allocating a portion (currently
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40 percent) of royalties from oil, gas, and other mineral leases on U.S. public domain lands. See **Mineral Leasing Act of 1920, as amended**.

Refinery	The physical plant and attendant equipment used to manufacture petroleum products from crude oil.
Remote storage facility	For solid mineral leases, any location or structure away from lease property or from a mine or secondary processing facility that stores mineral production prior to the point of royalty determination. An adjacent loadout facility that serves a single mine's total output may be considered an extension of that mine's inventory rather than a remote storage facility. See Royalty settlement point .
Renewable energy	Energy obtained from sources that may be renewed, including wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.
Rent	Periodic payments made by the holder of a lease, during the primary lease term, for the right to use the land or resources for purposes established in the lease.
Report month	The month in which the Minerals Management Service receives production, sales, or royalty reports from operators and lessees.
Reserves	A collective term for the sum of proved and indicated reserves. Proved reserves are estimated with reasonable certainty to be recovered under current economic conditions. Current economic conditions include processing costs prevailing at the time of the estimate. Proved reserves must either have facilities that are operational at the time of the estimate to process and transport those reserves to market, or a commitment of reasonable expectation to install such facilities in the future. Indicated reserves are economic reserves in known productive reservoirs in existing fields or in known productive deposits of solid minerals expected to respond to improved recovery techniques. A technique may be installed but its effect cannot yet be fully evaluated, or a technique may not be installed but knowledge of reservoir or deposit characteristics and the results of a known technique installed in a similar situation are available for use in the estimating process.
Reservoir	A subsurface, porous, permeable rock body containing oil, gas, or water. Most reservoir rocks consist individually or

collectively of limestones, dolomites, or sandstones. An oil reservoir generally contains three fluids — gas, oil, and water — with oil the dominant product. The fluids occur in different phases in the typical oil reservoir due to the variance in gravity. Gas, the lightest, occupies the upper part of the reservoir rocks; oil, the intermediate part; and water, the lowest part. A gas reservoir is created where gas accumulates independently of the oil. Salt water and some oil are associated with the gas in most instances. In a condensate reservoir, the hydrocarbons may exist as a gas, but when brought to the surface, some of the heavier hydrocarbons condense to a liquid.

Reservoir repressuring	The injection of air, gas, or water into oil and gas reservoir formations to increase or maintain internal pressure to produce greater ultimate recovery.
Residue gas	Gas (methane) remaining after processing in a separator or other plant equipment that removes liquid hydrocarbons from the gas.
Rig	The derrick and surface equipment of a drilling unit.
Right-of-way	A permit or an easement that authorizes the use of leased or unleased land for specified purposes, including the construction of a pipeline or road.
RIK	Royalty-in-kind. A program operated under the provisions of the Mineral Leasing Act of 1920 and the Outer Continental Shelf Lands Act of 1953. The Federal Government, as lessor, may take part or all of its oil and gas royalties “in kind” (a volume of the commodity) as opposed to “in value” (money). Under the oil RIK program, the Government sells oil at fair-market value to eligible refiners who do not have access to an adequate supply of crude oil at equitable prices. In addition, the Minerals Management Service conducted a gas RIK pilot program in 1995, entering into contracts to sell selected Gulf of Mexico natural gas by competitive bid to gas marketers. The pilot program was designed to reduce the administrative burden for both industry and the Government.
RMP	Royalty Management Program. See MMS .
Roller cone bit	A drilling bit composed of two to four cones or cutters mounted on rugged bearings. The surface of each cone employs rows of steel teeth or rows of tungsten carbide inserts.

Rotary drilling	A drilling procedure based on a rotating drill bit fastened to a drill stem, which provides a passageway through which the drilling fluid is circulated.
Rotary table	A chain-driven or gear-driven circular table that rotates the drill pipe and bit.
Royalty	Payment, in value (money) or in kind (a volume of the commodity), of a stated proportionate interest in production from mineral deposits by the lessees to the lessor. The royalty rate may be an established minimum, a step-scale, or a sliding-scale. A step-scale royalty rate increases by steps as the average production on the lease increases. A sliding-scale royalty rate is based on average production and applies to all production from the lease.
Royalty report	Report of Sales and Royalty Remittance (Form MMS-2014). A Minerals Management Service report used for reporting royalties, certain rents, and other lease-related transactions.
Royalty settlement point	A measurement point approved by the Bureau of Land Management and the Minerals Management Service to calculate royalties based on the quantity and quality of production at that measurement point.
RQS	Royalty Management Program Query System. A computer system application operated by the Minerals Management Service providing online access to historical royalty and reference data through a client/server environment. RQS provides access to standard reports, graphs, customized queries and reports designed by individual clients, and other systems applications.

S

Salable minerals	Sand, gravel, stone, soil, and other common mineral materials that are not included under the provisions of the Mining Law of 1872, as amended. Salable minerals are distributed through sales at or above an appraised price or through free-use permits. See Free-use permit .
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Sales value	The proceeds received for the sale of a mineral.
Sales volume	The volume of mineral production measured at the royalty settlement point determined by the Bureau of Land Management for onshore production and the Minerals Management Service for offshore production. See Royalty settlement point .
Seam	A vein or bed of coal or other solid mineral. A plane in a coalbed where the different layers are easily separated.
Secondary process	Mechanical and chemical processes normally performed on solid minerals at a mill, smelter, or refinery where a concentrate or salable commodity is produced. Secondary processes may include coal wash plants, sink-float processors, potash refineries, soda ash refineries, and lead-zinc-copper concentrate mills.
Secretarial Order	A document issued by the Secretary of the Interior affecting the management of public lands by Department of the Interior offices and bureaus.
Secretary	Secretary of the Interior.
Self-governance	A program for Indian Tribes administered by the Department of the Interior through which Tribes may negotiate, in a government-to-government relationship, with Department bureaus to assume programs conducted for the benefit of the Indian community. The bureaus transfer funds to Tribes to operate the programs.
Semi-submersible	A floating offshore drilling structure that has hulls submerged in the water but not resting on the sea floor.
SEMP	Safety and Environmental Management Program. A program in which offshore operators develop a plan describing the company's overall safety and pollution prevention policies and procedures. The purpose of the program is to reduce the risk and occurrence of accidents and pollution associated with offshore oil and gas drilling and production operations through active risk management.
Separator, oil and gas	Production equipment used to separate liquid components of the well stream from gaseous elements. Separators are either vertical or horizontal and either cylindrical or spherical in shape. Separation is accomplished primarily by gravity, with the heavier liquids falling to the bottom and the gas rising to the top. A float

valve or other liquid-level control regulates the level of oil or condensate in the bottom of the separator.

Service well	A nonproducing well used for injecting liquid or gas into the reservoir for enhanced recovery. A service well may also serve as a salt water disposal well or a water supply well.
Service zone completion	The interval in a well bore that has been mechanically prepared for service use, usually water or gas injection to stimulate production from other wells or for water or other waste disposal.
Shortwall	A method of mining in which comparatively small areas of coal seams or trona are worked separately by mobile equipment. A shortwall face may be any length between 5 and 30 yards. See Longwall .
Shut-in well	A producing well that has been closed for repairs, cleaning, or repressuring, or due to a decline in the market. The well has not been plugged with cement and abandoned.
Solicitor	Office of the Solicitor. An office within the Department of the Interior that serves as the principal legal adviser for the Secretary of the Interior. The Solicitor's Office is divided into six divisions, including the Division of Mineral Resources, which is responsible for legal matters arising in conjunction with mineral leasing and royalty management programs of the Bureau of Land Management and the Minerals Management Service.
Solid minerals	All mineral commodities except oil, gas, and geothermal resources that are produced under the terms of a Federal lease on which royalties are due.
Sour crude oil	Oil containing hydrogen sulfide or other acidic gases.
Sour gas	Gas containing an appreciable quantity of toxic compounds including hydrogen sulfide and other chemical impurities.
Spacing	The regulation, for conservation purposes, of the number and location of wells over a reservoir.
Specimen	A small mass of coal, rock, ore, or mineral that indicates the nature and quality of deposit from which it was derived. A specimen identifies the various minerals present.

Spot sales	Contracts for the purchase and sale of oil, gas, or solid minerals on a short-term basis.
SPR	Strategic Petroleum Reserve. Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.
Spud date	Date of first boring of the hole in the drilling of a well.
Spud in	The first boring of the hole in the drilling of a well.
State lands	Lands owned by a State.
STATSS	State and Tribal Support System. A computer system application operated by the Minerals Management Service that served as the forerunner of the Business Information System. The system provided States, Indian Tribes, and other Federal agencies with access to Auditing and Financial System information and selected Production Accounting and Auditing System data. See BIS .
Stipulations	Specific measures imposed upon a lessee that apply to a lease. Stipulations are attached as a provision of a lease and may apply to some or all tracts in a sale. For example, a stipulation may limit drilling or mining to a certain time period of the year.
STRAC	State and Tribal Royalty Audit Committee. An organization of State and Tribal representatives who meet to discuss royalty management and audit issues.
Strata	Distinct, usually parallel beds of rock. An individual bed is a stratum.
Strip mining	The mining of coal by surface mining methods. The waste, or overburden, is first removed; the coal is then broken and loaded. Strip mining of coal is distinguished from open-pit mining of metallic ores such as copper and iron ore and the quarrying of nonmetallic materials such as limestone. See Open-pit mining and Quarrying .
Sulfur	A nonmetallic element that occurs in association with salt diapirs throughout much of the onshore and offshore Gulf of Mexico region. All offshore sulfur is mined by the Frasch process, which uses hot brine to melt sulfur out of the enclosing rock so the molten sulfur can be recovered.

Surety	An individual or organization that is legally responsible for the debt, default, or delinquency of another. A Federal surety must hold a certificate of authority acceptable with the Department of the Treasury.
Surge bin	A temporary storage bin designed to convert a variable rate of supply at the top into a steady rate of discharge at the bottom. Surge bins are normally constructed as an inverted pyramid or cone to regulate the flow of materials during production or transportation.
Surge tank	A vessel on a flow line whose function is to receive and cushion sudden rises or surges in the stream of a liquid.
Suspended well	A well on which operations have been discontinued. The usual context is an uncompleted well in which operations ceased during drilling but which has not been plugged and abandoned permanently.
Suspension	A lease temporarily rendered inactive due to forces of nature, economic conditions, environmental impact studies, or other reasons. Wells are shut in. If both operations and production are suspended, royalty reporting and payment requirements are held in abeyance during this period, and the term of a lease is extended for the period of suspension. If either operations or production (but not both) is suspended, rent and minimum royalty obligations continue.

T

Termination	Termination of a nonproducing lease for failure to pay timely rentals.
Thermal cracking	A procedure to make oils of low boiling range (100 °F to 550 °F) to be used as motor oils and burning oils from oils of high boiling range (550 °F to 800 °F), such as gas oil and fuel oil. Modern commercial methods create this breaking-down action by subjecting the high boiling oils to high temperatures. See Catalytic cracking and Cracking .

TIMS	Technical Information Management System. An integrated computer system application operated by the Minerals Management Service that serves as the information management system for the Offshore Minerals Management Program. TIMS provides the means to collect and analyze offshore lease information, provide data for environmental studies, and collect and analyze information produced through inspections of offshore platforms and drilling rigs.
Trans-Alaska Pipeline	A 48-inch-diameter, 800-mile-long pipeline, completed in 1977, that transports crude oil from the Alaska North Slope to the ice-free port of Valdez.
Transportation allowance	An allowable deduction from royalty value that includes reasonable, actual costs incurred by the payor for moving a mineral commodity to a point of sale remote from the lease, unit area, or communitized area, or away from a processing plant. The allowance excludes costs to gather the commodity. See Processing allowance .
Treasury	Department of the Treasury. A Cabinet-level department in the Executive Branch of the Federal Government responsible for the financial resources of the United States. The Treasury is responsible for regulating national banks, determining international economic policy, collecting income taxes and customs duties, reporting Government daily financial transactions, and manufacturing coins and bills for circulation.
Trespass	Any use or occupancy of the lands or resources of the United States without authority.
Tribal lands	Lands owned by the United States in trust for a group or Tribe of Indians. The Tribe holds equitable title to the lands.

U

Unitization agreement	An agreement among owners and leaseholders of separate oil or gas interests to operate as a unit in developing a potentially productive area with optimum efficiency. Leasehold interests may be separate. Costs and benefits are allocated as defined in
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the agreement, usually among all participating productive leases on the basis of surface acreage ownership.

- U.S.C.** United States Code. The U.S.C. contains all laws of a general and permanent nature arranged into an official code of the laws of the United States.
- USDA** U.S. Department of Agriculture. A Cabinet-level department in the Executive Branch of the Federal Government responsible for improving agricultural production capacity and income through rural development, credit, conservation, and environmental protection programs. The National Forest and National Grassland systems are part of the Department of Agriculture.
- USGS** U.S. Geological Survey. A Federal agency within the Department of the Interior that provides geologic, topographic, and hydrologic information that contributes to the effective management of the Nation's natural resources and promotes the health, safety, and welfare of its citizens. USGS provides maps, databases, and descriptions and analyses of the water, energy and minerals, land surface, underlying geologic structure, and dynamic processes of the Earth.

V

- Valve** A device used to control the rate of flow in a line, to open or shut a line, or to serve as an automatic or semiautomatic safety device.
- Vapor** A substance in the gaseous state, capable of being liquefied by compression or cooling.
- Vein** A zone or belt of mineralized rock clearly separated from surrounding rock. A vein is typically long and relatively narrow.
- Viscosity** A measure of the resistance of a liquid to flow. Resistance is brought about by the internal friction resulting from the combined effects of cohesion and adhesion. The viscosity of petroleum products is commonly expressed in terms of the time

required for a specific volume of the liquid to flow through an orifice of a specific size.

- Vug** A small cavity in a rock, often lined with a crystalline mineral of different composition from the surrounding rock.
- Vugular formation** A rock formation that contains vugs; a cavernous formation. See **Vug**.

W

- WAN** Wide area network. A telecommunications network linking remote sites to enable individuals to communicate and share information more efficiently. The Minerals Management Service WAN links program offices with personnel in the Department of the Interior and Minerals Management Service Headquarters.
- Well** A hole drilled or bored into the earth, usually cased with metal pipe, for the production of gas or oil. A hole for the injection, under pressure, of water or gas into a subsurface rock formation.
- Well bore** The borehole or hole made by drilling or boring. A well bore may contain casing, it may be open, or it may have portions that are cased and portions that are open.
- Wellhead** The equipment installed at the surface of the well bore. A wellhead includes the casinghead and tubing head.
- Well permit** Authorization, usually by a Government land management agency, to drill a well. A permit may also be required for deepening or remedial work.
- Wet gas** Natural gas containing significant amounts of liquid hydrocarbons.
- Wet oil** Oil that contains water, either as an emulsion or as free water.
- Wildcat well** A well drilled in an area where no oil and gas production exists.

Withdrawal Lands removed by the Executive Branch or Congress from settlement, location, sale, or entry under the public land laws and the mineral leasing laws.

Workover Operations on a shut-in or producing well to restore or increase its production.

X, Y, Z

Yaw On a offshore drilling rig or ship, the angular motion as the bow or stern moves from side to side.

Yd Yard.

Zone A rock stratum that is different from or distinguished from another stratum (e.g., a pay zone). See **Strata**.



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Royalty Management Program** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.