Texas Oil and Gas Property Rights

This outline is provided to give clients a general understanding of the processes and issues that may be involved in the client's case. This is an outline that may not be up to date and the outline is far from comprehensive. It is not a substitute for legal advice and is not intended to assist in the prosecution of any case. It is offered solely as information to make the litigation process more decipherable to the client. It is not intended and should not be used as a substitute for legal advice.

OIL & GAS-TEXAS

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1. THE RULE OF CAPTURE AND NATURE OF OIL AND GAS OWNERSHIP
A. THE RULE OF CAPTURE
The rule of capture is a rule of nonliability for drainage of oil and gas from adjoining property. The owner of a tract of land overlying an oil and gas reservoir has the right to capture all the oil and gas he brings to the surface through wells located on his own tract, notwithstanding that much of this oil and gas may be drained from beneath the surface of an adjacent landowner's property. The adjacent landowner's only remedy at common law to protect her land from being drained is to drill her own well and attempt to drain the oil and gas back. She is not entitled to an accounting for her "fair share" of oil produced from another landowner's well or an injunction against drainage. However, she may be protected by state oil and gas conservation regulations (see VIII., infra), and she may be able to protect herself by pooling or unitization (see IX., infra).
B. REASONS FOR THE RULE
Oil and gas, unlike "hard" minerals, flow toward low pressure areas in a reservoir. A well creates such a low pressure area. Thus, oil and gas do not stay in place; they are "fugacious" and "fugitive" minerals. In the absence of more scientific knowledge than was available at the time of the development of the rule of capture (in the early 1900s), it was impossible to estimate just how much oil and gas were in place beneath any particular surface acreage, or to identify whether oil and gas recovered by a well on one tract of land had in fact been drained from beneath another tract. The law applicable to "hard" minerals, whose boundaries could be identified by a landowner, could not readily be applied to oil and gas. The rule of capture was adopted as a rule of judicial economy and convenience because of the inability to assign oil and gas ownership rights accurately to the overlying landowners.
C. CONSEQUENCES OF THE RULE
1. Encourages Prolific Drilling and Rapid Production
Because the only remedy against drainage by one's neighbors is to drill against others as they are drilling against you, the effect of the law of capture, untempered by state regulation, will always be to: (i) encourage each landowner to drill the maximum number of wells possible (as long as the wells can be operated at a profit); and (ii) encourage rapid, "wide open" production from all the wells, as each landowner seeks to outdrain the other.
2. Physical and Economic Waste
The consequences of the tendency of landowners under the rule of capture to produce as
much and as quickly as possible are twofold: (i) economic waste because the cost of developing a field is much higher than it would be under the most efficient conditions possible (because of the proliferation of wells); and (ii) physical waste because overdrilling and overproduction are likely to leave a higher percentage of oil and gas "trapped" in the formation.

3. State Regulation
Because of economically inefficient development and physical waste, the states began to regulate oil and gas production by passing conservation laws that often modify or nullify the common law rule of capture. (See discussion of Texas regulations in VIII., infra.) Briefly, under this state regulation, an agency (in Texas, the Railroad Commission) is given the statutory authority to prevent waste and to protect correlative rights (i.e., assure that each landowner receives his "fair share" of the oil and gas in a commonly owned reservoir). The most common state regulations are: (i) well-spacing rules, allowing only one oil well per 40 acres; (ii) prorationing rules that restrict the amount of oil and gas each well can produce; and (iii) compulsory pooling acts that allow a drained landowner to force neighbors to share their wells' production with him.

D. ABSOLUTE OWNERSHIP OR OWNERSHIP IN PLACE THEORY

1. Apparent Inconsistency with Rule of Capture

At the same time that the Texas courts adopted the rule of capture as the fundamental law governing the rights of owners of a common reservoir, the courts also adopted the theory that the landowner absolutely owned all of the oil and gas in place underneath his tract, even though it was not yet being produced and brought into possession at the surface. At first blush, this theory of absolute ownership is completely inconsistent with the rule of capture: How can one absolutely own the oil and gas underneath the soil and yet not have any rights against the neighbor who is taking this property away by drainage from wells on an adjacent tract? The Texas Supreme Court did not seem to mind the inconsistency, and both absolute ownership and the rule of capture exist side-by-side as fundamental property concepts in Texas.

2. Practical Consequences of Absolute Ownership Theory
As a consequence of the absolute ownership theory, mineral estates can be created, conveyed, recorded, mortgaged, and taxed just like any other estate in land.
Example: If Lilly Landowner, who owns Blackacre, desires to keep the surface of Blackacre to herself, but to sell or lease her minerals to Bill Buyer, she can sever her land into two separate estates: a surface estate and a mineral estate. Bill Buyer will now own a corporeal estate in realty, the mineral estate, and Bill is the new "absolute" owner of all the oil and gas in place beneath Blackacre. (The problem of accommodating conflicts between the severed mineral and surface estates is discussed infra in VII.)

E. COMMON LAW LIMITATIONS ON THE RULE OF CAPTURE
1. Correlative Rights of Landowners

Stated in its pure form, the rule of capture suggests that a landowner may capture oil and gas free of any duty to his neighbors to use due care to protect any rights of the neighbors. But in fact, the right to capture has been limited by the doctrine of "correlative rights." According to this doctrine, each owner of the common reservoir has a legal privilege to take oil and gas by lawful operations on his land, but each owner also has legal duties to the other owners not to exercise his privilege in a manner that injures the common source of supply. Recognition of correlative rights is consistent with a theory that recognizes the landowner's "ownership" interest in the oil and gas in place. Thus, insofar as one's own drilling may interfere with the correlative rights of one's neighbor, the injured neighbor may be entitled to some remedy. Correlative rights may be protected under the common law in the following circumstances:

a. Right to Be Protected from Negligent Operations

An owner of a mineral interest has a right to be protected from negligent drilling by other operators. [Elliff v. Texon Drilling Co., 146 Tex. 575 (1948)]

Example: In Elliff, an operator, as a result of negligence, "blew out" a well, causing oil and gas to be drained from adjacent property and wasted. The court held that the adjoining landowners could recover damages for the waste occasioned by the negligence, measured by the value of the oil and gas that had once been in place under their tracts but which was now lost. The landowners owned the oil in place under their tracts (under the absolute ownership theory). When this oil was destroyed by the defendant's negligence, the rule of capture did not insulate the defendant from liability.

b. Stored Gas

The rule of capture does not apply to oil or gas that has been brought to the surface and then reinjected into depleted reservoirs for purposes of storage. Once oil and gas are brought to the surface, they become personal property, not real property. This oil and gas remains the property of the storer even when reinjected back into the ground.

Example: X produces gas, pipes it to a distant city, and stores it underground in a depleted reservoir. Y is a landowner whose tract overlies the reservoir. Y cannot drill a well and produce the stored gas. (Note: Y may have a trespass cause of action against X if X is using Y's reservoir space without leasing it or buying it.)

c. Right to Enjoin or Seek Damages for Willful Injury to Reservoir

Owners of mineral interests in a reservoir may enjoin another owner whose willful actions threaten to damage the reservoir or, in the alternative, may seek damages for the willful injury caused by the illegal action. [See, e.g., Manufacturers' Gas & Oil Co. v. Indiana Natural Gas & Oil Co., 57 N.E. 912 (Ind. 1900)]

Example: In Manufacturers'Gas & Oil, the owners of oil and gas interests obtained an injunction against a fellow owner who, by using vacuum pumps, was lowering pressure in the field and creating a situation whereby the field could be "flooded" out. The correlative rights of the injured owners could be protected by injunction against willful injury to the reservoir's capacity to produce.
d. Duty to Refrain from Unlawful or Wasteful Production
Owners of interests in a reservoir may have a private cause of action against persons who do not obey state regulations on production, well spacing, and the like. They may enforce the regulations by injunction and by obtaining damages caused by the violation. Example: Bigg Oil illegally drills a well in violation of the Commission's well spacing rule, and produces $90,000 worth of gas before the Commission discovers the illegality and shuts the well down. This $90,000 worth of gas would have been produced by Littel Oil (the lessee of the surrounding acreage) had Bigg not drilled and produced from the illegal well. Littel Oil may sue Bigg Oil to recover the $90,000.

2. Modern Context of Correlative Rights
Most correlative rights issues today arise in the context of state regulation of oil and gas. For example, a landowner may bring suit challenging a particular order of the Railroad Commission because it allegedly fails to give him his "fair share" of the oil and gas in a reservoir; i.e., it fails to protect his correlative rights. These cases are akin to "takings" cases which arise in constitutional law and are discussed at VIII.E.2. and IX.B., infra.

11. KINDSOFINTERESTSINOILANDGAS
A. INTRODUCTION
Oil and gas interests are generally created and conveyed like interests in real estate. However, the names and characteristics of some of the commonly encountered interests are different from real estate interests generally.

B. MINERAL INTEREST
1. Definition
In Texas, the mineral interest in oil and gas consists of the fee simple ownership of the oil and gas in place under a parcel of property and the exclusive right to search for, develop, and produce oil and gas from the property. The mineral interest is a separate fee estate and is recognized as a corporeal right, i.e., a possessory estate in land. It is often severed from the rest of the property. Mineral interests in fee simple, for life, or for a term of years are conveyed by a "mineral deed."

2. Benefits of the Interest
a. Mineral Interest Leases
The mineral interest owner has the right to grant oil and gas leases. The right to lease is called the "executive tight." If the mineral interest owner grants an oil and gas lease, she will typically receive in return:
1) A 1/8 royalty, i.e., 1/8 of all the oil and gas produced cost-free;
2) A bonus, i.e., front-end money, usually based on the number of acres leased, e.g., $1 per acre for "wildcat" unproven territory; $1,000 per acre for "hot" territory; and
3) Delay rentals, also paid on an acreage basis, and paid annually (usually) to defer drilling one more year during the primary term.

b. Self-Development
The mineral estate owner also has the right to develop the oil and gas herself (i.e., to self-develop). In this case she will not lease to an oil company, but will hire a drilling contractor. She will receive all the profits (revenues minus costs) from the operation.

C. SURFACEINTEREST
The surface interest is what remains in the bundle of rights of land ownership after the
mineral interest has been severed. It is more than the right to the surface of the land: it is all rights that are not included as a part of the mineral interest. There is often litigation over whether valuable substances belong to the mineral estate or surface estate. (See VII., infra.) The surface interest is subject to an implied easement of surface use by the mineral interest owner. (See VII.C., infra.)

4. OIL & GAS-TEXAS

D. LEASEHOLD INTEREST

1. Defined
The leasehold interest is the interest granted by an oil and gas lease to the lessee. It is sometimes referred to as the "working interest" or "operating interest," because the leasehold owner is the party who "works" the mineral estate and bears all of the costs of the operations. As will be discussed in V and VI., infra, an oil and gas lease usually imposes express and implied duties on the lessee.

2. Oil and Gas Lease vs. Mineral Deed
The usual oil and gas lease conveys a fee simple determinable from the lessor (landowner) to the lessee. Contrast this with the usual mineral deed, which conveys a fee simple to the grantee. The difference between a fee simple and a fee simple determinable is that the determinable fee may last forever, but it is subject to automatic termination upon the occurrence of certain conditions imposed by the lease.
Example: M, the owner of the mineral estate on Blackacre, grants all the oil and gas under Blackacre to Bigg Oil for "10 years and as long thereafter as oil and gas is produced" in return for the usual lease benefits (royalty, bonus, delay rentals).
1) What does Bigg Oil own?
Bigg Oil now owns all the oil and gas under Blackacre, but has a contractual duty to pay M a 1/8 royalty. The 7/8 of the oil and gas remaining after the 1/8 royalty is paid is called the "working interest."

Bigg has a fee simple determinable in the oil and gas. The lease will expire if there is no production at the end of 10 years. (The typical lease will also expire if delay rentals are improperly paid, as will be seen in VC.3., infra.) This fee simple determinable is "corporeal realty."
Bigg may use the surface as is reasonably necessary to develop the oil and gas. Bigg now has the right to explore, produce, and develop the oil and gas. Bigg now has duties, both express and implied, under the lease.
2) What does M own now that M has leased Blackacre?
M owns benefits under the lease (royalty, bonus, rentals). The 1/8 royalty is "incorporeal realty." It is incorporeal because M has no right to drill and produce the oil and gas; i.e., M has no possessory right. Bigg Oil has these rights. M is not a co-tenant in the mineral estate with Bigg.
M owns a possibility of reverter in the mineral estate. If the lease terminates, the mineral estate reverts to M automatically.

E. ROYALTY INTEREST
The royalty interest is a nonpossessory, incorporeal, cost-free right to a share of the gross production or a share of the proceeds from the sale thereof. It is a right in land, and it is
real property in Texas. The royalty owner has no right to explore for, drill, or produce the n-finerals, nor to grant such right to others. In the absence of language to the contrary, the right is limited to the receipt of a stated share of the gross production; i.e., it does not include the right to participate in any other attributes of the lease, such as delay rental payments, a bonus, or the exercise of executive rights. Conversely, the royalty owner has no obligation to pay any costs of production.

There are at least three kinds of royalty interests, all of which share the characteristics described above. Any of these royalties may be for a fixed term, for a defeasible term (e.g., for 10 years and so long thereafter as there is production), or perpetual:

1. Landowner's Royalty
   A landowner's royalty is the fractional share of production payable to the lessor in the royalty clause of the oil and gas lease.

2. Overriding Royalty
   An overriding royalty is a royalty interest carved out of the lessee's interest under an oil and gas lease.
   Example: X leases Blackacre to Bigg for a 1/8 royalty. Bigg assigns its leasehold interest to Littel Oil Co. in exchange for a 1/16 overriding royalty. If Littel finds oil, X will receive a 1/8 landowner's royalty and Bigg will receive a 1/16 overriding royalty. This leaves Littel Oil with less than a 7/8 working interest to pay the costs of drilling and producing. Littel has only a 13/16 working interest (not 14/16 or 7/8). The override is "carved out" of the 7/8 working interest. It is in addition to the landowner's 1/8 royalty.

3. Nonparticipating Royalty
   A nonparticipating royalty is a royalty carved out of the mineral interest that entitles its holder to a stated share of production. "Nonparticipating" means that the holder does not have the right to lease or to participate in bonus and rentals. Nonparticipating royalty interests ("NPRIs") may be created in several ways.
   Examples: 1) Suppose Able owns 40 acres of Blackacre, a potential oil-bearing tract. Able has four daughters to put through college and needs to raise some money quickly. Able does not want to lease the land yet because he thinks he can get a much larger bonus if he waits a while longer and oil is discovered on adjoining tracts. Able sells a 1/16 nonparticipating royalty interest in the 40 acres to Baker in return for $5,000. What has Baker bought?

   Baker has bought the right to 1/16 of all the oil and gas cost-free from a well anywhere on the 40 acres. Thus, if Able's hunch proves correct and Able later leases to Exxon for a hefty bonus and a 1/8 royalty, Able will get 1/2 of the 1/8 royalty (1/16) and Baker will get the other 1/16.

   Baker, the owner of the NPRI, does not have the right to lease the land or the right to bonus or delay rentals.

2) Nonparticipating royalties may also arise after leases have been executed. Suppose Able sells the 1/16 royalty to Baker as above; then leases to Exxon and Exxon drills a producing well on the 40 acres. Able is getting a 1/16 royalty paid out of actual production. But Able needs more money right now since all four daughters have been
admitted to expensive schools. Able sells an additional 1/32 royalty to Baker in exchange for $4,100. Now Exxon owes Able a 1/32 royalty and Baker a 3/32 royalty on production from Blackacre.

F. MIXED BLENDS OF ROYALTY AND MINERAL INTERESTS
Interests that have some of the characteristics of mineral interests and some of the characteristics of royalty interests may also be sold or reserved.

Examples: 1) X deeds to Y. "an undivided 1/2 mineral interest in Blackacre, but X reserves the executive right [the right to lease] on all of Blackacre." X and Y are mineral estate co-tenants, but Y does not have one of the usual "sticks" in the bundle of rights owned by mineral owners. Y is a nonparticipating mineral interest owner ("NPMI") because he lacks the right to lease his minerals. When X leases all of Blackacre on behalf of both X and Y, 1/2 of all lease benefits (royalty, bonus, and rentals) will go to X and the other half to Y.

2) X deeds Blackacre to Y, reserving: "an undivided 1/32 royalty interest and the right to join in the execution of any future oil and gas leases." X has reserved a royalty interest with the right to lease; he is a "participating royalty interest" owner. When Blackacre is leased, X will not have the right to receive bonus and rentals (because X reserved only a royalty), whereas Y will (because Y is a mineral interest owner). Also, Y cannot unilaterally lease without joining X in the lease negotiations.

G. PRODUCTION PAYMENT

1. Definition
A production payment is defined as the right to receive a sum certain payable solely out of production, without any obligation to share in the costs of production. A production payment is sometimes called an "oil payment."

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Example: Charlie wishes to get a loan from Bank. Bank lends Charlie $1,000, taking in exchange the right to be paid "$1,500, payable solely out of the production of oil and gas from a lease on Charlie's land." Bank has a production payment.

2. Contrasted with Royalty
The difference between a production payment and a royalty is that the production payment is measured by a fixed amount and ceases once payment has been made in full. By contrast, a royalty may be (and typically is) perpetual; it is measured as a fractional share of production from the lease, and is not limited to a ceiling amount. However, both production payments and royalty interests are "nonworking," i.e., free of costs.

111. PROTECTION OF RIGHTS AND ADVERSE POSSESSION

A. IN GENERAL
Mineral interests and leasehold interests may be protected against interference under both trespass law and slander of title suits.

B. TRESPASS
One who wrongfully enters and possesses another's mineral estate will be liable to the rightful owner as a trespasser. The types of trespass that might occur are:

1. Ordinary trespass
A trespass is committed when one enters and possesses the mineral estate without the
right to do so.
Example: Farmer executes an oil and gas lease to Bigg Oil "for three years and as long thereafter as oil is produced." The lease expires because there is no production at the end of the three years. Bigg refuses to release the expired lease, and three weeks after the lease ends, Bigg enters onto the tract and drills a well. Bigg is a trespasser.

2. Slant Well Drilling
A trespass is committed when a well is bottomed on a tract owned by another person because of slant well drilling.
Example: Bigg Oil leases Whiteacre and drills dry holes on it, despite the fact that Blackacre, next door, is producing oil. Bigg Oil starts drilling a well on the surface of Whiteacre but slants it underground and bottoms it under Blackacre. Bigg Oil is trespassing on Blackacre.
The trespass of slant well drilling may be intentional (i.e., designed to steal oil from a more productive portion of a reservoir) or unintentional (as a result of negligence). Slant well drilling is generally not evident from surface operations and can only be proven by means of a directional survey. In Texas, the courts have held that one who has probable cause to believe that her property is being invaded by a slant well driller may apply to the Railroad Commission for an order compelling a directional survey of the suspected slant well drilling to be made. The granting of such an order may be conditioned upon the posting of a bond sufficient to protect the surveyed party against any damage occasioned by the survey.

3. Geophysical Trespass
When the minerals have been severed from the surface estate, the right to conduct geophysical exploration on the surface belongs to the mineral owner rather than the surface owner. Thus, an oil company that secures the right to explore only from the surface owner is trespassing on the mineral estate. When there is an oil and gas lease on the property, the right to conduct geophysical searches from the surface belongs to the lessee if the lease grants an exclusive right to explore, as most do. In the absence of the grant of an exclusive right to explore, there is precedent in Texas that the lessor and lessee have concurrent rights to explore the land. [Shell Petroleum Corp. v. Puckett, 29 S.W.2d 809 (Tex. Civ. App. 1930)]
a. Seismic Vibrations
A possible new form of geophysical trespass has been much discussed lately. Suppose a geophysical explorer uses a highway right-of-way or leases land adjoining Blackacre to do seismic work. The seismic vibrations pass under Blackacre, whose owner has not given permission to explore. The explorer never enters onto the surface of Blackacre, but acquires good seismic information about Blackacre's mineral potential by shooting seismic vibrations on the adjoining land. A Texas case has held that mere vibrations passing through another's land do not constitute trespass, but the opinion was carefully limited to the fact situation at hand: The explorer had not gained any useful information about Blackacre's potential. It can be argued that if the explorer did gain useful data, a geophysical trespass would occur. The counterargument is that the rule of capture should apply to the acquisition of seismic data. No Texas case on point exists yet.

4. Damage to Lease Valuation Trespass
In Texas, a trespasser may be held liable for damage to the speculative value of the rightful owner's mineral interest occasioned by his trespass.

Example: In Humble Oil & Refining Co. v. Kishi, 291 S.W. 538 (Tex. Comm. App. 1927), Humble, erroneously believing it had the consent of the owner of the mineral estate to drill on property after its lease had expired, drilled a dry hole on the property. As a result, the speculative value of the mineral interest (the amount which another lessee would have paid for a new lease) declined. The court held that Humble had trespassed on the interest of the nonconsenting n-dneral estate owner. The mineral interest owner was entitled to damages equal to the decline in speculative value of his lease caused by the drilling of a dry hole. Thus, if leases in the area had been selling for bonuses of $100 per acre, and the tract was worthless after the dry hole, the rightful owner will be able to recover $100 per acre.

5. Conversion of Gas by Owners of Oil Rights
In some parts of Texas, one group of lessees owns the right to produce oil and another group owns the right to produce gas under deeds that severed the oil from the gas. It is a trespass and conversion for the oil operators to produce gas from a gas stratum. Oil operators may legally produce casinghead gas, which is gas that is indigenous to an oil stratum. (See VIII.R, infra, for more detail.) Note: This severance is very rare. The typical oil and gas lease gives one lessee the right to produce both substances.

C. REMEDIES FOR TRESPASS
1. General Rule
As a general rule, the rightful owner of a tract of land can recover damages and also enjoin the trespass.
2. Damages
   a. Good Faith/Bad Faith
   The extent of the damages owed by the trespasser to the rightful owners will depend on whether the trespasser entered on the land in good faith, having "an honest and reasonable belief" in the superiority of his title. A good faith trespasser is liable for the value of oil produced from the land, but will be credited with any costs incurred in production, provided those costs conferred a benefit on the true owner of the mineral interest. A "bad faith" trespasser will be liable for the gross value of the production from the well without any deduction for costs. A trespasser bears the burden of proving good faith. In Texas, a person who enters onto a disputed tract of land and drills during pendency of a lawsuit is in bad faith as a matter of law. Exemplary damages may also be awarded against a bad faith trespasser.
   b. Recovery of Costs
   The costs that may be recovered by the good faith trespasser will depend on a finding that: (i) a benefit was conferred on the true owner; and (ii) the costs incurred were reasonable.
   Example: A good faith trespasser drilled a well into the same reservoir as an existing well drilled by the true owner. Since the true owner could produce oil and gas from the property without using the well drilled by the trespasser, no benefit had been conferred and no recovery of drilling costs was allowed. [Carter Oil v. McCasland, 207 F.2d 728 (10th Cir. 1953)]
Note: In Texas, the good faith trespasser may not recover the costs of drilling a dry hole or conducting other unsuccessful operations that do not benefit the true owner.

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c. Where Costs Exceed Value of Production at Time of Suit
Suppose the trespasser's costs of drilling exceed the value of production from the property at the time she is evicted from the property. May she recover her costs from future production? Yes, under two theories.

1) Texas Common Law
Under Texas common law, the good faith trespasser may affirmatively seek an equitable lien on future production to the extent of her otherwise recoverable costs. [Pomeroy v. Pearce, 2 S.W.2d 431 (Tex. Comm. App. 1928)]

2) Statutory Recovery
The trespasser may also sue under the Texas Betterment Statute to obtain a personal judgment for her costs against the true owner. If she does so, however, she bears the burden of proof of showing that the well drilled actually enhanced the property's value. [Tex. Prop. Code Ann. '22.02]

d. Rights of Lessor and Lessee
When the mineral estate has been leased, both the lessor and lessee will have a right to collect against the trespasser. The lessor will be entitled to no more than the value of his royalty. The lessee will be entitled to the leasehold value, but must bear the burden of absorbing any costs awarded to the trespasser.

e. Assumpsit
One whose land is trespassed upon by another may waive the suit in trespass and sue in assumpsit for the value of the implied contract that should have been negotiated. If the trespass is in the course of geophysical operations, a suit in assumpsit will claim the value of the geophysical permit that should have been obtained. [Phillips Petroleum Co. v. Cowden, 241 F.2d 586 (5th Cir. 1957)] If the trespass is by actual drilling, a suit in assumpsit will claim the lease bonus that should have been paid.

D. SLANDER OF TITLE

1. General Rule
An owner may recover against a third party who maliciously and knowingly asserts a false claim to the land in question if the slander of title results in the loss of a specific sale to the real owner. This is called an action for slander of title. [Kidd v. Hoggett, 331 S.W.2d 515 (Tex. Civ. App. 1959)]

Example: Bigg Oil, knowing that its lease on Lilly's land has expired, refuses to give up the lease. As a result, Lilly loses the sale of a new lease on her tract to Littel Oil, who had offered $50 per acre in bonus. If Lilly can prove (i) publication of a false claim, (ii) with malice, and (iii) loss of a specific sale, Lilly will win a slander of title suit against Bigg. Note that Lilly may be able to recover even though Bigg is not physically trespassing on her land by drilling or producing operations.

2. Malice
Malice is found to exist when the slanderer lacks a bona fide belief in the validity of his claim.
3. Damages
Damages are measured by the difference between the market value of the lease at the
time of the slander and its value at trial with the cloud on the title removed.
Example: If Lilly's tract of land (above) is worth only $10 per acre in bonus after she
wins the lawsuit, her damages will be $40 per acre. If Lilly's land is worth $100 per
acre after she wins the suit, she will not receive any damages, except perhaps the lost
interest on the earlier lost sale
E. ADVERSE POSSESSION
The key to understanding adverse possession of minerals is to remember that (i) the
adverse possessor takes only what the original owner actually possessed; (ii) title
acquired by adverse possession relates back in time to when the adverse possession
began; and (iii) to adversely possess severed minerals, one must continuously operate
upon the land for drilling and producing purposes for the statutory period.
1. Unsevered Mineral Interest
By adversely possessing the surface where the mineral interest has not been severed by
the true owner, the adverse possessor can acquire both the surface interest and the
mineral

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interest. Thus, if A, an adverse possessor, farms the surface of the land owned in fee
simple
by B for the statutory period, A acquires both the surface rights and the mineral rights
owned by B.
2. Severed Mineral Interest
Where the mineral interest has been severed by the record owner, adverse possession of
the surface will not amount to adverse possession of the mineral interest. Rather, there
must be drilling and production for the statutory period of limitations. Thus, if A, an
adverse possessor, enters upon and farms land from which mineral rights have been
severed, he obtains only the surface right when the statutory period has run.
3. Severance After Adverse Possession Begins
If a mineral interest is severed after adverse possession has begun, the severance will not
interrupt the adverse possessor's right to acquire the mineral interest by possession of the
surface. Title by adverse possession relates back to the beginning of possession. [Rio
Bravo Oil Co. v. Staley Oil Co., 158 S.W.2d 293 (Tex. Comm. App. 1942)]

IV. EFFECT OF DIVIDED OWNERSHIP
A. CO-TENANCY
Although interests as joint tenants with right of survivorship may exist in Texas by
express agreement, the usual form of concurrent rights is the tenancy in common.
1. General Rule
Any co-tenant is entitled to lease or produce without the consent of the others. However,
the producing co-tenant must account to her nonconsenting co-tenants for their share of
profits from the oil and gas.
Example: Able and Baker own 1/2 undivided interests in Blackacre. Able leases his half
interest to Zeon, retaining a 1/8 royalty limited to the extent of his legal interest in the
property, i.e., the lease has a proportionate reduction clause (see V.E.2., infra). When a
producing well is drilled, Able will receive a costfree royalty of 1/16 of production (1/8
of 1/2). Baker is entitled to the profits on 1/2 of production. Zeon is entitled to the
remainder. Baker cannot enjoin Able from leasing or enjoin Zeon from drilling under
Able's lease.

2. Measuring Profits
Profits are revenues (the value of the oil and gas sold) minus costs. In determining
Baker's profits in the above example, his interest may be charged with his share of all
reasonably necessary costs of production, including lifting, drilling, and development
costs. However, insofar as the driller (Zeon) incurred carrying charges (interest) as part
of these development costs, such carrying charges are not deductible. [Cox v. Davison,
397 S.W.2d 200 (Tex. 1965)] In Texas, a nonconsenting co-tenant cannot be charged
with any of the costs of drilling a dry hole or conducting other operations which prove
unsuccessful in producing oil or gas.

Note: This measure of profits used in accounting between co-tenants is the same measure
used to assess damages owed by the good faith trespasser.

Example: Able owned an undivided 1/2 of Blackacre. Able and Baker were in a trespass
to try title ("TTT") suit over the ownership of the other half. While the suit was pending,
Able drilled an oil well. Baker won the TTT suit and argued that Able was a bad faith
trespasser as a matter of law (because he drilled during a lawsuit), and therefore had to
account for Baker's half of all revenues without deduction for costs. Held: Able was not
a trespasser because he was an undisputed co-tenant in half of the minerals. A co-tenant
has the right to develop without the consent of fellow co-tenants as long as he accounts to
them for their profits share (revenues minus costs). (Byrom v. Pendley, 717 S.W.2d 602
(Tex. 1986)]

3. Recovery of Costs
A nonconsenting co-tenant cannot receive any profit from the well until the costs
chargeable to her interest have been recovered from production. This may delay for a
long time the nonconsenting co-tenant's right to recover. Conversely, the operating co-
tenant cannot get a personal judgment for the costs of production against the
nonconsenting co-tenant. His remedy is limited to recovery of costs from production.

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4. Ratification
Because of the delay in receiving a profit share, a nonconsenting (unleased) co-tenant
may desire, if possible, to ratify the lease and receive a royalty share from the date of
ratification. Acceptance of benefits under the lease, such as acceptance of a tender of
royalties, will operate to ratify a lease if the acceptance is made with full knowledge and
is evidenced by a written instrument (such as a division order (see V.F.5., infra))
sufficient to meet the Statute of Frauds. However, if the lease does not purport to cover
the nonconsenting tenant's interest, the nonconsenting tenant is powerless to ratify. The
nonconsenting co-tenant who ratifies a lease (and thereby secures a royalty share) cannot
thereafter change his mind and seek to "unratify" and obtain a profits share.

5. Co-tenants May Lease Separately
The co-tenancy relationship is not a fiduciary one. Each co-tenant has a right to separately lease his undivided interest. That is, if A, B, C, and D each own a 1/4 interest, all may execute separate leases as to their undivided interests to separate lessees. Each of these lessees must account to all the co-tenants for the proceeds of its drilling. The accounting gets quite complex. The practical result is that in most instances the separate lessees will enter into a joint operating agreement, with one lessee acting as operator for the benefit of all interest holders. Because of the economics of drilling on land burdened by a nonconsenting co-tenant, it will rarely make economic sense for one lessee to drill without substantially all of the mineral interest subject to his control. As stated above, the unleased co-tenant cannot be charged with dry hole costs, but must be given his share of the profits from a good well. Thus, the economic risk of drilling is skewed against the developing co-tenant. The developing co-tenant will often want to seek partition of the mineral estate before drilling.

6. Partition Partition is the court-ordered division of jointly owned land into separately owned tracts.

a. Absolute Right
The right of mineral interest owners or landowners to partition is absolute. [Tex. Prop. Code Ann. '23.001] This includes the right to demand a partition of the mineral fee apart from the surface. Equitable considerations are not relevant to whether partition will be granted, but may be weighed in determining the manner of partition (whether by sale or in kind).

Note: Royalty interest owners cannot seek partition, since they own only incorporeal interests. Only the owners of corporeal interests may seek partition.

b. Express and Implied Contracts Not to Partition
The parties to a co-tenancy agreement may expressly contract not to partition or to partition only by a chosen method (e.g., only in kind). The Texas courts have sometimes found that the parties to a contract have impliedly agreed not to partition.

Examples: 1) X and Y are co-tenants in Blackacre. X leases to Bigg Oil and Y leases to Littel Oil. Bigg and Littel enter into a joint operating agreement ("JOA") to develop Blackacre. Bigg has a falling out with Littel over the proper depth of wells in the drilling program. Can Bigg get a partition? No. While the general rule is that co-tenants (Bigg and Littel are now the co-tenants in the minerals) have an absolute right to partition, the Texas courts have held that a JOA impliedly contracts against partition when drilling is being performed and partition would effectively destroy the contract to share drilling expenses.

2) X owns Blackacre. X sells an undivided 1/4 mineral interest to Y, but X retains the executive right on all of Blackacre. X leases all of Blackacre, but for less than Y believes is appropriate. Can Y partition and free his 1/4 interest and then lease it himself? No. Again, the Texas courts have found an implied agreement not to partition from the reservation of the executive right to X. [See Odstrcil v. McGlaun, 230 S.W.2d 353 (Tex. Civ. App. 1950)]

c. Partition in Kind Favored
The law favors a partition in kind rather than by sale. Therefore, if an equitable partition in kind can be effected, it will be decreed. Whether the mineral estate can be equitably
partitioned in kind is a question of fact. The party seeking sale of the property and division of the monetary proceeds has the burden of proving that the property
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cannot be fairly partitioned in kind because, for example, reserves are distributed unevenly beneath the land.
d. Undeveloped Land
When there is no development and none planned, the court assumes for the purpose of partition that each acre of land contains an equal amount of minerals, and orders partition in kind.
e. Producing Land
While partition in kind is favored, developed land is often partitioned by sale because reserves are unequally distributed beneath the land or because uncertainty exists as to the value of reserves under various parts of the land.
f. Potentially Productive Land
1) Partition in Kind Favored
Generally, even on potentially productive land, the Texas courts favor partition in kind because it does not force mineral owners to exchange their real property for mere personal property (money).
2) Checkerboard Partition as Solution to Inequitable Division
When oil and gas development is nearby but not on the tract to be partitioned, partition in kind may result in an inequitable division of the mineral estate. In this case, the Texas Supreme Court has suggested a "checkerboard" partition in kind, whereby each co-tenant receives several separate tracts distributed throughout the partitioned land. This technique spreads the potentially oil-rich and oil-poor areas among all the former co-tenants. It makes the land more difficult to lease, however, as a prospective lessee must now seek leases from several owners in order to secure a large block of land.
g. Receivership for Undivided Mineral Interests

Rather than seeking partition, a co-tenant or lessee of a fractional mineral interest may seek a court-appointed receiver to lease the outstanding undivided mineral interest of a person who is a nonresident, or whose residence or identity is unknown, when such person has not paid taxes on the interest in the preceding five years. The co-tenant or lessee seeking partition must prove that he has made a diligent but unsuccessful search for the person and will suffer injury (e.g., drainage of the land) unless a receiver is appointed. Proceeds from the receiver's lease (e.g., bonus, rentals, and royalties) are paid into the court registry for the benefit of the unknown, fractional interest owner. In this manner, a co-tenant may avoid having to escrow a share of the profits to an unknown, fractional owner.

B. SUCCESSIVE OWNERSHIP
1. Life Tenant and Remainderman
When land is divided between a life tenant and a remainderman, problems arise as to (i) who may lease and (ii) how the proceeds of the lease will be divided.
a. Where Both Hold Legal Interests
If the life tenancy and remainder are legal interests, then the consent of both the life
tenant and remainderman is necessary to the lease, because the lease grants present rights (which the remainderman cannot grant) that may extend beyond the end of the life estate (which the life tenant cannot grant). The life tenant may have the power to act alone to prevent imminent drainage (waste), but that power is very limited under the common law. Note: A Texas statute authorizes a life tenant to seek a court-appointed receiver to execute an oil and gas lease binding outstanding future interests, such as that of a remainderman. The court may appoint the receiver if (i) the land is susceptible to drainage, (ii) leasing and the proper investment of the lease proceeds will benefit the persons entitled to the proceeds (including the future interest owners), or (iii) a lease is necessary to protect the land or to protect a present, contingent, or future interest in the land. [Tex. Civ. Prac. & Rem. Code Ann. '64.092]
b. Apportionment of Lease Benefits
If a lease is executed by both the life tenant and the remainderman owning legal interests, the life tenant generally receives the delay rentals. Bonus and royalty are invested as corpus, with interest from the investment paid to the life tenant, and the corpus distributed to the remainderman upon the life tenant's death. [Davis v. Bond, 158 S.W.2d 297 (Tex. 1942)]
1) May Be Varied by Terms of Grant
The general rule may be varied by the terms of the grant creating the interest or by agreement of the life tenant and remainderman. For instance, G may grant "to A for life, remainder to B, except that all mineral royalties shall be paid outright to A during A's life." This intent will be given effect.
2) "Open Mine" Doctrine
At common law, a life tenant had special rights when a mine had been "opened" on land prior to creation of the life estate. This "open mine" doctrine remains in force today as follows: When a lease has been executed prior to creation of a life estate (whether that life estate is created by grant or operation of law), the life tenant is entitled to all bonus payments, delay rentals, and royalties paid under any lease in effect prior to creation of the life interest. Thus, a widow who acquires her life estate by operation of the Homestead Law will be able to take advantage of the open mine doctrine to claim all lease payments from a lease executed before she acquired her life estate. [Youngman v. Shuler, 288 S.W.2d 495 (Tex. 1950)] For the open mine doctrine to apply, the lease need not have a producing well on it at the time the life estate is created. Note: If an oil and gas lease in force at the time of creation of the life estate expires and a new lease is executed after creation of the life estate, the open mine doctrine is inapplicable. [Moore v. Vines, 474 S.W.2d 437 (Tex. 1971)] In other words, the open mine doctrine applies only to the lease in effect at the time the life tenancy was created.
c. Equitable Interests
If the life tenancy and remainder are created by trust, the trust instrument will control the power to execute leases and the division of the proceeds.

In the case of a silent instrument, the Texas Property Code empowers the trustee to execute leases. However, the lease proceeds are distributed differently from legal interests. Proceeds from the lease are divided as follows:
1) Delay rentals are income to the life tenant.
2) 271/2% of all bonus, royalty, and production payments, but not to exceed 50% of the net, after deducting the expenses and carrying charges on the property, is treated as corpus and held for the remainderman. 721/2% of such payments is usually treated as income for the benefit of the life tenant. Moreover, the income from interest payments on the 271/2% treated as corpus is payable to the life tenant. [Tex. Prop. Code Ann. ' 13.1071

2. Mortgagor/Mortgagee
   a. Standard Mortgage Clauses
      Often, mortgages will specifically provide for the effect of an oil and gas lease executed subsequent to the mortgage. Some provide that in the event of a lease, the mortgagee (the bank) is entitled to all payments of whatever sort made to the mortgagor (the landowner) under the lease. In the absence of a mortgage provision governing the effect of a lease, Texas courts hold that a mortgagor or his lessee may produce oil and gas free from a mortgagee's interference as long as the value of the security does not fall near or below the amount of the outstanding debt.
   b. Foreclosure of Lessee's Interest
      If a mortgage is executed after a recorded lease, the lessee's rights will be superior to those of the mortgagee because the mortgagee lent money with the knowledge of the existing lease. Conversely, if the mortgage is executed before the lease, the lessee's interest will be subject to the mortgage lien. However, a foreclosing prior mortgagee must attempt first to satisfy the mortgage out of proceeds of a sale of the surface rights. If the sale of these rights is insufficient, the lessee's interest may then be sold to satisfy OIL & GAS-TEXAS 13.
   c. Order of Sale of Mineral Rights
      Where the proceeds from the sale of the surface and any retained fractional mineral rights are insufficient to satisfy the mortgage, and several mineral interests have been conveyed, the mineral interests conveyed will be sold to satisfy the debt in inverse order of alienation; i.e., the most recently conveyed mineral interest will be sold first to satisfy the debt. A mortgagee who can show great inconvenience and inequity from such a piecemeal sale may be able to get the whole tract sold at once. [Continental Oil Co. v. Graham, supral
   d. Redemption
      A lessee may redeem to prevent foreclosure by tendering the amount of the outstanding
V. THE OIL AND GAS LEASE
A. NATURE OF THE INTEREST CREATED
The typical oil and gas lease grants to the lessee a possessory estate in the mineral fee for a fixed term of years "and so long thereafter as oil, gas, and other minerals are produced." The lease creates a fee simple determinable estate in the minerals.

B. PURPOSES OF THE LEASE
Oil and gas leases work differently from other leases of real estate. The key to understanding them is to identify their fundamental purposes.

1. From Lessee's Point of View
   a. The lessee seeks the right to develop the leased land for an agreed term without any obligation to drill.
   b. If production is obtained, the lessee wants the right to maintain the lease for as long as it is profitable to do so.

2. From Lessor's Point of View
   a. The lessor wants the lessee to drill on the property because royalties are paid only if producing wells are drilled. While the lessor receives some "upfront" money (the bonus) which does not depend on discovering oil and gas, the lessor's hope for riches is in the royalty clause. The lessor does receive annual delay rentals during the fixed term of the lease if the lessee decides not to drill, but delay rentals are not the road to riches either.

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b. Because the lessor's interest is cost-free and the lessee's interest is cost-bearing, conflicts between lessor and lessee will arise which will be resolved either by reference to the express terms of the lease or by implied covenant law.

C. ESSENTIAL CLAUSES
The bare bones essentials of any oil and gas lease are contained in just three clauses: the granting clause, the habendum clause, and the delay rental clause.

1. The Granting Clause
   a. Specifies Rights Granted
   The granting clause of an oil and gas lease defines what rights are given by the lessor to the lessee. Typically, it will specify a number of the uses that the lessee is likely to make of the property—e.g., conduct geophysical searches, locate wells, and build pipelines @ ven though such uses would be within the implied right of surface use of the lessee.
   Note: The issue of whether the granting clause of a mineral lease or deed conveys all minerals, including those that are strip-mined, is discussed at VII.D., infra.
b. Description of Property
The granting clause also describes the property. Sometimes the description will be followed by a "Mother Hubbard" clause, providing that the grant will cover other lands owned or claimed by the lessor in the area, even if they are not specifically described. Disputes may arise as to the breadth of the application of a "Mother Hubbard" clause. In Texas, the clause protects the lessee against inaccuracies in a legal description caused by incorrect surveys, careless location of fences, or other such mistakes, but the clause does not operate to convey large tracts that the parties have chosen not to grant in the lease.

2. The Habendum Clause
A typical oil and gas lease habendum clause states:
The lease shall be for years from this date (called the "primary term") and as long thereafter as oil, gas, or other minerals are produced. This provision creates the primary term and the secondary term.

a. The Primary Term
The primary term sets a fixed time period during which the lessee will have no obligation to conduct drilling operations and secure production on the property (unless the property is being drained, in which case implied covenant law (see VI.D., infra) may require the lessee to drill).
Note: If the lessee chooses not to drill during the primary term, he will still have to pay delay rentals to keep the lease in effect. (See 3., infra.)

b. The Secondary Term
The secondary term of the oil and gas lease is created by the language "as long thereafter as oil, gas, or other minerals are produced." It is stated as an indefinite period of time because it is impossible to know for how long the lease will remain profitable.

c. Meaning of "Produced"
1) Actual Production in Paying Quantities
In Texas, the production necessary to extend the lease from the primary term to the secondary term and to maintain it thereafter must be actual production that is marketed in paying quantities. [Garcia v. King, 164 S.W.2d 509 (Tex. 1942)] A well produces in paying quantities if revenues to the lessee on her working interest (after paying the landowner's royalty) exceed operating costs. Failure to have actual production in paying quantities at the end of the primary term is a special limitation that terminates the fee simple determinable in the minerals held by the lessee in the absence of an express provision to the contrary. The possibility of reverter in the oil and gas owned by the lessor reverts back to the lessor, and the lease ends.

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a) Drilling Costs Not Included
To produce in paying quantities, revenues do not need to exceed operating and drilling costs. The drilling costs are considered "sunk costs" and are not included in the calculation. Thus, as long as revenues to the lessee's working interest exceed operating costs, the well is producing in paying quantities. Operating costs include: pumping costs to lift the oil, labor, repairs, depreciation on salvageable producing equipment, etc. The lessee need not subtract overriding royalties-only the landowner's royalty is subtracted.
Note.—Reworking expenses are considered capital expenditures (like drilling and completion costs) and so are not operating costs. "Reworking" means physical acts done to restore or improve production from an existing well.

2) Clause Construed Strictly Against Lessee

In general, the Texas courts construe the habendum clause strictly against the lessee and, even though the lessee may have done everything a reasonably prudent operator could do to secure production by the end of the primary term, the lease will expire if there is no production in paying quantities (unless the exceptions discussed below in d. and e. apply).

Thus, the lease will expire at the end of the primary term (absent a saving clause) if.

a) Oil is discovered, but not actually produced and marketed in paying quantities;
b) A gas well is completed and is capable of profitable production, but lacks a pipeline connection;
c) The lessee is engaged in drilling a well, but it is not yet completed or producing;
d) A gas well is flaring gas (rather than the gas being marketed or sold);
e) Oil is not being produced because of a Railroad Commission order that prohibits the flaring of casinghead gas (which always accompanies the production of oil); or
f) Oil or gas is being produced and sold, but not in paying quantities.

d. The "Temporary Cessation" Doctrine

The temporary cessation doctrine was created to help the lessee avoid the harsh effects that would result from the court's usually strict construction of the habendum clause against the lessee. Once actual production and marketing in paying quantities have been established, a temporary cessation of production, due to a "sudden stoppage of the well or some mechanical breakdown of the equipment, or the like," will not terminate the lease if the lessee exercises diligent efforts to restore production and there is a reasonable expectation of success within a reasonable period of time.

e. The Marginal Well Exception

1) Special Nature of Marginal Wells

The Texas Supreme Court has also developed an equitable doctrine for marginal wells. Marginal wells (or stripper wells) are wells that produce only a few barrels of oil a day. Usually, the wells are on pumps because there is not enough natural pressure left in the reservoir to push the oil toward the wellbore. Marginal wells may produce a small profit in some months and then lose money for a month or two. If leases held by production from marginal wells were to expire the minute that the well experienced a loss, thousands of marginal wells in Texas would be abandoned at an early date rather than reworked and nurtured for their small (but significant) output.

2) Modified Standard—Reasonably Prudent Profit-Seeking Operator

Therefore, in Clifton v. Koontz, 325 S.W.2d 684 (Tex. 1959), the court held that the test for production in paying quantities for marginal wells is "whether or not, under all the relevant circumstances, a reasonably prudent operator would, for the purpose of making a profit and not merely speculation, continue to operate a well in the manner in which the well in question was operated." Generally, the Texas courts have found production in paying quantities as long as the lessee's receipts exceed operating
costs (lifting costs plus severance taxes) over an economically significant period of time. The theory is that as long as operating costs are recovered, a prudent operator would continue to operate the well in hopes of eventually recovering drilling and development costs or minimizing losses. Again, no account is taken of the initial expenses of drilling and completing the well. These capital expenditures are water under the bridge.

L Doctrine of Repudiation
The doctrine of repudiation tolls the time period provided under the habendum clause for the fulfillment of the lessee's duties for as long as the lessor contests the validity of the lease. Thus, if the lessor repudiates or obstructs the lease (e.g., by refusing to let the lessee onto the tract), the courts will add the period of delay to the lessee's lease.

g. Leases Compared to Term Royalty Deeds

Often, the owner of a nonparticipating royalty interest possesses only a term royalty, e.g., the right to "1/2 of all royalties for 10 years and as long thereafter as oil and gas is produced." If no oil and gas is produced at the end of the term, the term royalty expires and reverts to the grantor just as oil and gas leases expire under the habendum clauses for lack of production). Typically, term royalty deeds lack the many savings clauses that oil and gas leases contain. Therefore, a term royalty may expire even though the lease underlying it does not.

Example: In Archer Co. v. Webb, 338 S.W.2d 435 (Tex. 1960), an oil and gas lease was held to be in effect past the primary term by operation of a shut-in gas clause (see D.4., infra), but the term royalty deed, which did not have a shut-in clause, was held to have expired.

Note: The temporary cessation doctrine applies to term royalty deeds as well as to leases. Thus, if oil is not produced for two months because of a mechanical breakdown (and both the lease and the term royalty are past their primary term), the lease will not terminate under the habendum clause and the term royalty will not expire, as long as the lessee diligently restores production.

3. Delay Rental Clauses
The delay rental clause is included in the lease to negate any implied duty or implied covenant to drill an exploratory test well during the primary term. The clause authorizes the lessee to delay the drilling of an initial well by periodically paying a stipulated sum of money to the lessor during the primary term of the lease. Payment of delay rentals cannot be made after the primary term expires. Only production in paying quantities will hold a lease after the primary term ends.

a. "Unless" vs. "Or" Leases

There are two polar types of delay rental clauses:

1) "Unless" Clause

The "unless" oil and gas lease is the form usually seen in Texas. The "unless" form provides that "if operations for drilling are not commenced within one year from the date of this lease, the lease shall terminate unless lessee pays delay rentals of ___ dollars to the lessor." This delay rental clause is the second special limitation to the fee simple determinable, and a failure to pay (i) on or before the due date; (ii) in at least the proper amount; (iii) to the proper parties; and (iv) in the manner provided, will cause automatic termination of the lease.
2) "Or" Clause
Under an "or" clause, the payment of delay rental is structured as a contractual obligations covenant. The lessee agrees either to drill or pay delay rentals periodically. A lease with this kind of clause will not terminate automatically if the lessee fails to commence drilling operations or pay rentals properly. Instead, the lessor may sue for breach of the covenant (and obtain the past due rentals), or, if the lease contains a forfeiture clause, begin the forfeiture procedures.

b. Acceptance of Late Rentals
In Texas, if the lessee makes a late rental payment and the lessor accepts it, the lessor is held to have revived the lease under some sort of loose theory of estoppel or ratification. This is true whether the late payment is due to a good faith mistake of the lessee or due to his negligence.
Note: Depository banks named in the lease have no power to bind the lessor by accepting late or incorrect statements.

c. Ratification May Revive Leases
Some Texas cases hold that a landowner has ratified a prior expired lease, thus reviving it, by granting a subsequent deed to the land that refers to the prior lease as if it were still in effect.
Example: Lilly Landowner leases to Bigg Oil. The lease expires (for whatever reason). Then Lilly sells the land to Max. The deed to Max recites that the land is subject to Bigg's lease and that the deed covers all the land now covered by this lease. Lilly will be held to have ratified and revived the expired lease.

d. Express Clause Negating Termination for Improper Rentals
In one case, the lessee, acting in good faith, improperly paid a delay rental. The court held that the lease did not terminate, because it contained a clause stating: "If Lessee shall, on or before the due date, make a bona fide effort to pay rentals, and such payment is ineffective or erroneous, Lessee shall be obligated to pay the proper rental but the lease shall not terminate." [Kincaid v. Gulf Oil Corp., 675 S.W.2d 250 (Tex. App. 1984)]

e. "Commencement" of Drilling
The other choice given to the lessee who wants to maintain his oil and gas lease during the primary term is to drill. Most leases provide that the lease will be maintained if the lessee "commences" drilling operations. Actual drilling is not required. It is sufficient if there are some physical operations on the surface of the land, directly related to drilling, which are conducted in good faith, provided those operations are diligently pursued until a well is completed.

D. DEFENSIVE CLAUSES
Several important clauses have been added to oil and gas leases to modify the general rule that the lease terminates at the end of the primary term unless there is actual production in paying quantities. In Texas, as in most states, these clauses are generally interpreted strictly against the lessee if there is any ambiguity. However, properly drafted defensive clauses will maintain the lease, and they may be "tacked" together, one after another; e.g., a lease may be extended first by the operations clause and then maintained by the shut-in royalty clause.
1. Dry Hole Clause
The dry hole clause clarifies what the lessee must do to maintain the lease for the rest of the primary term after drilling a dry hole. Though dry hole clauses vary widely, all are alike in that they specifically permit the lessee to maintain the lease for the remainder of the primary term by resuming the payment of rentals.

2. Operations Clause
An operations clause, sometimes called a drilling operations clause, or a continuous drilling clause, or a continuous operations clause, is included in oil and gas leases to prevent the lease from expiring at the end of the primary term while drilling operations are in progress. In effect, the operations clause makes drilling operations the equivalent of production for purposes of the habendum clause. Generally, operations that would be sufficient to "commence" drilling for purposes of the delay rental clause will be sufficient under the operations clause.

3. Force Majeure Clause
A force majeure clause lists acts of God and other catastrophes beyond the reasonable control of the lessee that will excuse the lessee from performing acts, the failure of which might otherwise constitute a breach of the lease or a special limitation to its term. The Texas courts have held that oil and gas lease terms will be strictly enforced, and nonperformance will not be excused without a force majeure provision.

a. Application-Appointment of Receiver
A bankruptcy court's appointment of a receiver to take charge of a lessee's operations was held to be the sort of action that could trigger the operation of a force majeure clause where the involuntary appointment, over the lessee's protest, caused a delay in drilling.

4. Shut-In Royalty Clause
Shut-in royalty clauses address the problem of a well capable of production in paying quantities which is shut in (not producing), usually because there is no market. Because such a well has no actual production, it will not maintain an oil and gas lease in Texas. The shut-in royalty clause permits the lessee to maintain a lease upon which wells are shut in by payment of a shut-in royalty. Shut-in royalty clauses pose the same kinds of interpretive and administrative problems presented by delay rental provisions. Because the shut-in royalty payment is normally structured as a substitute for actual production, failure to make the shut-in payment properly will cause the lease to terminate under the habendum clause.

Note: Shut-in royalties can be paid only on wells that are capable of producing in paying quantities. A lessee cannot drill a junked well or dry hole and then attempt to hold the lease in effect by paying shut-in royalties.

5. Cessation of Production Clause
In Texas, though it is clear that a temporary cessation will not cause the lease to terminate, it is unclear how long a cessation may be termed "temporary." To avoid haggling over "temporary," many leases contain temporary cessation of production clauses that specifically provide that a cessation of production will not cause the lease to terminate as long as the lessee commences corrective work within a stated period of
Such a clause modifies the temporary cessation of production doctrine by its express terms. If the cessation of production clause in the lease specifies 60 days within which to resume production, the lessee may not take 62 days; if she does, the lease will expire.

6. Pooling Clause

a. General Effect

Most oil and gas leases give the lessee the authority to pool the lessor's interest. Without such approval, either in the lease or in a separate agreement, the lessee cannot pool the lessor's rights. A pooling clause is a powerful defensive clause. It allows the lessee to place the leased tract into a larger unit created by combining acreage from adjacent tracts. Production from any well on the pooled unit will operate as production from the leased tract, even though the well is not on the leased tract itself. Royalties will usually be apportioned to the different landowners whose land was combined into the pooled unit on the basis of surface acreage.

Example: if Bigg Oil has leased 30 acres from X and 10 adjacent acres from Y and both leases contain pooling clauses and 1/8 royalty clauses, Bigg Oil can pool the separate tracts into a 40-acre unit. A well drilled anywhere on the 40 acres will hold both leases (as long as the well produces in paying quantities). X will receive a royalty of 30/40 times 1/8 and Y will receive a royalty of 10/40 times 1/8. If Bigg's leases did not have pooling clauses, Bigg would have to drill wells on both X's and Y's tract to keep both leases in effect.

b. Liability of Lessee Absent Pooling Clause

If the lessee pools his own working interest under a lease that does not contain a pooling clause with leases of other owners in the area, and drills a well on the leased premises, he will be liable to his lessor for the full lease royalty (usually 1/8) on production from the well, though the pooling agreement allocates to him only a portion of production from the well.

Example: Bigg Oil Company leases a 10-acre tract from Lilly Landowner for a 1/8 royalty. Landowner has struck the pooling clause from the lease, and Bigg reluctantly accepts it. Bigg then pools Lilly's lease with a lease covering 30 adjacent acres held by Exxon, to form a 40-acre drilling unit. A prolific gas well is drilled on the 10-acre tract. Though Bigg's agreement with Exxon probably will allocate only 1/4 (10/40) of the total production to Bigg, Bigg will be required to account to Lilly Landowner for the full 1/8 lease royalty. Pooling does not affect Lilly's rights under the lease because the lease contains no pooling clause. Of course, had the gas well been drilled on Exxon's lease, Lilly Landowner would not be entitled to share in its production (unless she ratifies the pooling agreement). The gas well on Exxon's tract will not extend Lilly's lease past the primary term because she has not agreed to the pooling.

c. Pugh Clause or Freestone Rider Clause

Because lessors do not want to give lessees the power to tie up all of the land covered by the lease by pooling a small portion of the leased property with other properties, many
leases now contain a "Pugh" or "Freestone Rider" clause, inserted by the lessor. A Pugh or Freestone Rider clause provides that if only part of the acreage under the lease is pooled, that part that is not pooled will not be maintained by unit production; the pooled and unpoled portions are severed.

Example: Bigg Oil leases 40 acres from Lilly. The lease has a pooling clause and a Pugh clause. Bigg takes 15 of the 40 acres and pools it into a larger unit of 160 acres. Lilly will receive 15/160 times 1/8 royalty from any well on the 160 acres. However, under the Pugh clause, the lease on the 25 acres of Lilly's land that was not included in the pool is not maintained by production from the pooled unit. The Pugh clause severs this 25 acres from the pooled 15 acres. Bigg must either pay delay rentals on the 25 acres, or drill a well on it, or pool this 25 acres into another unit if Bigg wants to keep the lease alive on the 25 acres.

Note: It has been held that the typical Pugh clause does not sever a leased tract by depth horizons.

Example: First Lessee assigned leasehold rights to Second Lessee to drill at depths from the surface to 2,000 feet down. First Lessee kept the leasehold rights to drill below 2,000 feet. Second Lessee pooled the shallow acreage into an adjacent tract that had a producing well. First Lessee did not pool or produce from the deeper horizons and did not pay delay rentals. Lessor argued that the Pugh clause in the lease severed the deeper horizon from the shallow horizon and that the lease on the deep horizon had expired. The court did not accept Lessor's argument. A typical Pugh clause severs only by surface acreage, not by depth horizons. [Friedrich v. Amoco Production Co., 698 S.W.2d 748 (Tex. App. 1985)]

d. Pooling in Good Faith

Texas courts have recognized that the purpose of the pooling clause is to give the lessee flexibility to comply with well-spacing requirements and geological realities, and allow her to operate efficiently. However, when a lessee, acting in bad faith, pools a lessor's interest, the pooling may be set aside.

Example: In Amoco Production Co. v. Underwood, 558 S.W.2d 509 (Tex. Civ. App. 1977), the lessors contended that the lessee had gerrymandered a drilling unit of 688 acres in order to extend eight different leases covering approximately 2,250 acres. The unit was established two days before the end of the primary terms of several of the leases and included clearly unproductive property. The jury found the pooling was done in bad faith and nullified it.

Note: One should not assume that any multilease pooling close to the end of the primary term is in bad faith. Bad faith is a fact question to be decided by the jury, and the burden of proof is on the lessor.

e. Strict Construction

The lease pooling clause is generally strictly interpreted against the lessee. Thus, if the lease pooling clause permits the establishment of prorationing units of the size "prescribed" by the Railroad Commission, the language of the clause will not permit establishment of larger units, even where that is permitted (but not "prescribed") by the Commission. When the lease pooling clause requires that the pooled agreement be recorded before pooling becomes effective, and the recording is not done until after the end of the primary term, the lessee will lose his lease if he does not have production in paying quantities on the tract.
L Cross-Conveyancing
In Texas, an agreement to pool or unitize is treated as a cross-conveyance of interests by the pooled parties. Thus, all parties to the pooling or unitization agreement are indispensable parties in a suit to try title to land subject to a lease that has been incorporated in the agreement because each owner of an interest will be affected by any judgment rendered.

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g. Authority of Lessor to Pool Prior Nonparticipating Royalty Interests

In the absence of an agreement otherwise, the holder of the executive right (the exclusive right to lease the minerals) cannot bind the owner of a prior outstanding nonparticipating royalty interest by the execution of a lease containing a pooling provision. [Brown v. Smith, 174 S.W.2d 43 (Tex. 1943)] However, such a nonparticipating royalty owner, at his option, may ratify such a lease by joining in the execution of the agreement or by accepting royalties for production from the pooled acreage. [Montgomery v. Rittersbacher, 424 S.W.2d 210 (Tex. 1968)] Stated another way, the right to lease another's interest does not include the right to pool this interest. However, the owner who has been unlawfully pooled may ratify the pooling agreement and receive a share of production from a well located off of her tract. In general, the ratifying owner will receive her share of pooled royalties only from the date of ratification. However, a Texas court has held that the owners of an NPRI could receive retroactive royalty payments from a well in a pooled unit which had produced from 1966 to 1972, even though the NPRI owners did not ratify the pooling until 1979. The NPRI owners did not learn that their land had been pooled until 1979, at which point they promptly sought to ratify. [Benavides v. Warren, 674 S.W.2d 353 (Tex. App. 1984)]

h. Co-tenants and Pooling
If one co-tenant signs a lease that covers the entire tract and contains a pooling clause, the other co-tenant can ratify the lease and receive a royalty share of any pooled production from a well located off the tract.

E. ADMINISTRATIVE CLAUSES Another group of lease clauses is intended to ease the administration of the oil and gas lease.

1. Warranty Clause
The lease warranty clause permits the lessee to recover damages from the lessor if there is a failure of title. In addition, it may give the lessee the benefit of the doctrine of after-acquired title if the lessor does not own the full interest in the property but later acquires it.

2. The Proportionate Reduction Clause
The proportionate reduction clause (also called the lesser interest clause) is included in the lease to protect the lessee against paying more in royalties, rentals, or other lease benefits than he bargained for. It generally provides that if the lessor owns an interest in the oil and gas less than the entire fee simple, then royalties and rentals to be paid may be reduced proportionately. Note, however, that the clause presumes that the granting clause is not limited to the fractional interest owned by the lessor. If it is so limited, then
the proportionate reduction clause cannot be used to reduce delay rentals because the lessor owns the entire fractional interest described. [Texas Co. v. Parks, 247 S.W.2d 179 (Tex. Civ. App. 1952)] It is unclear whether the proportionate reduction clause can be used to reduce royalties under these circumstances.

3. Subrogation Clause
A subrogation clause empowers the lessee to protect his interest against liens by paying taxes or mortgages encumbering the property and then stepping into the shoes of the former creditors.

4. Equipment Removal Clause
Equipment removal clauses give the lessee the specific right to remove equipment from the well site after the termination of the lease. Whether or not the lease has such a clause, the lessee must act within a reasonable time, and will not be permitted to remove casing (production pipe) if this would destroy the ability of the well to produce in paying quantities. [Patton v. Rogers, 417 S.W.2d 470 (Tex. Civ. App. 1967)]

5. Assignment and Change of Ownership Clause
These provisions are found in leases to protect the lessee against the possibility that she will be held to have had constructive notice of an assignment by the lessor and thus be required to check the public records before making delay rentals or other payments. The effect of such a clause is to permit the lessee to rely upon the information designated in the lease until she is provided with proof that ownership rights have changed. Generally, such clauses provide that the lessee may rely upon her records unless she receives proper notice of a change of ownership within a specified period of time before a payment is due.

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6. Separate Ownership Clause
The separate ownership clause is the counterpart of the assignment and change of ownership clause. It deals with problems that may arise when it is the lessee who makes an assignment. Since the lease is a whole, in the absence of a specific provision, the failure of the assignee to pay delay rentals on the portion of the lease assigned will cause the termination of the entire lease. A typical separate ownership clause will sever the assigned and retained portions of the lease, so that liability for loss or breach will rest upon the owner who commits the breach.

7. Surrender Clause
The surrender clause gives the lessee the right to terminate the lease at any time as to all or part of the leased premises. This means, for instance, that if surveys determine that only a portion of a large tract is likely to be productive, the lessee may surrender the lease as to the portion that he does not wish to keep and avoid paying delay rentals on that acreage. However, the lessee cannot use the surrender clause to avoid liability for breaches of contract or breaches of implied covenants incurred before the surrender.

8. Notice-Before-Forfeiture and Judicial Ascertainment Clauses
Notice-before-forfeiture clauses are designed to protect the lessee against lease forfeiture and termination by requiring the lessor to give the lessee notice of alleged breaches and an opportunity to correct them before she institutes suit. Judicial ascertainment clauses
go even further. Typically, they provide that the lease may not be forfeited or declared
terminated until the lessor has proved the breach complained of and then the lessee is
given a specified time to correct the default.
F. THE LEASE ROYALTY CLAUSE The royalty clause is the main provision of the oil
and gas lease for compensation of the lessor. The "normal" royalty is 1/8. However,
royalty fractions are negotiated and may be higher.
1. Classification as Real or Personal Property
Generally, a royalty that has been accrued or paid will be treated as personal property.
Unaccrued royalty, however, is treated as real property whether or not the royalty owner's
interest is payable in kind or, as in the case of many gas royalties, in cash. The royalty is
an incorporeal interest in land, which is created at the time of its grant, notwithstanding
that production from the royalty may not occur until the future.
2. Cost-Free Nature
The royalty interest is free of the costs of development, exploration, and production. For
instance, assume Bigg Oil produces 64 barrels of oil a month from Able's land. Oil sells
at $10 a barrel in the field. Bigg expends $50 in lifting costs (the costs of bringing the
oil and gas to the surface), and charges $100 of development and exploration costs to
that month's production on his books. Able has a 1/8 royalty. Under the royalty, Able
will receive eight barrels of oil at no cost, which he can sell for $80. Royalties are also
free of compression costs necessary for production.
3. Deductions from Royalty
Though a royalty is free of costs of production, it may be subject to other costs. Most
royalty clauses state that royalties are to be valued at the "market value" or the "proceeds"
of the oil and gas "at the well." Thus, costs subsequent to production at the wellhead,
such as costs of cleaning, dehydration, transportation, pipeline compression costs, and
severance taxes, are proportionately shared between lessor and lessee. [McBride v.
Hutson, 306 S.W.2d 888 (Tex. 1957)] These deductions are particularly important to
lessees where the sale of gas takes place off the leased premises. By deducting such
costs, the lessee is able to "work back" from the price at which the gas is sold to its value
at the wellhead to calculate royalty.
Example: A lessee sells gas to a pipeline 35 miles from the wellhead and receives
$2/MCF (thousand cubic feet) for this gas at the pipeline delivery point. Assume the cost
of transporting this gas from the wellhead to the pipeline is 400/MCF. The lease requires
the lessee to pay the lessor's royalty based on the "market value at the well." The lessee
may subtract the 400 in transportation costs from the $2 to get the market value at the
well of $1.60. The lessor is due 1/8 of this $1.60 (or 200); the lessor will not receive 1/8
of the $2 (or 250). Thus, the lessor is bearing 1/8 of the 400 postproduction transportation
cost (which totals 50, the difference between 250 and 200).
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Note: Texas law requires that payments to royalty interest owners be accompanied by
information on the time period for which sales payments are being made, the volumes of
oil or gas, the price per barrel or MCF sold, the amount of severance and other production
taxes paid, and any other deductions from the owner's share, in addition to specifying the
decimal interest representing the owner's share.
4. Failure to Pay Royalty
The lease will not terminate automatically for failure to pay royalty. In Texas, the
lessee's obligation to pay royalty is a covenant, and liability for its breach will be
restricted to damages. Note, however, that failure to pay shut-in royalties may terminate
the lease under the habendum clause.
5. Division Orders
A division order ("D/O") is a document usually prepared by the lessee or purchaser of oil
or gas. The lessee/purchaser makes a title examination and then prepares division orders
that specify how the payments for the oil or gas are to be divided among all the royalty
and mineral interest owners who are due a share of production from the particular well or
tract of land involved. The owners are then asked to sign the division orders warranting
that they are the lawful owners of the fractional interests specified in the document. If an
owner subsequently sells or otherwise disposes of all or part of his interest, a transfer
order directs the lessee/purchaser to change the division order and pay the new owners
the interest transferred to them.
a. Common Law Purpose and Effect
The general common law rule governing the effect of signed division orders is that
division orders are binding until revoked. Thus, a lessee or purchaser who pays
according to the amounts warranted by the owners in the division orders is protected even
though one owner is later found to have been overpaid and another owner underpaid.
The underpaid owner may revoke the division order, correct the error, and receive the
proper amount in the future, but she may not recover past underpayments from the lessee
(although she may proceed against the overpaid owners).
1) Unfair or Unusual Provisions Are Unenforceable
While affirming this general rule, the Texas Supreme Court has warned lessees that they
cannot put unfair or unusual provisions in division orders that may contradict the lease
and expect to bind the lessors to these provisions until such time that the lessors revoke
the division orders. After all, the basic contract between a lessee and lessor is the oil and
gas lease, not the division order. The division order is primarily intended to settle the
mathematical division of ownership interests in the lease proceeds.
2) Common Law Exception for Unjust Enrichment
The Texas Supreme Court has held a lessee liable for past deficiencies in royalty
payments where: (i) the lessee prepared the erroneous division orders, and (ii) the lessee
was unjustly enriched by his own error.
Example: Lilly Landowner owns Blackacre. X is an NPRI owning a "1/2 royalty on
Blackacre." Bigg Oil wants to lease Blackacre. Bigg's title examiner checks the title and
tells Bigg that X owns a "1/2 of royalty." Lilly leases for a 1/8 royalty, Bigg drills a good
well, and for many years Bigg pays Lilly 1/2 of the 1/8 royalty and pays X the other 1/2
of 1/8. Both Lilly and X signed division orders and accepted royalties based on these
amounts. Then X learns that his royalty deed entitles him to a 1/2 royalty, not a 1/16.
The court allowed X to recover the past underpayments. [Gavenda v. Strata Energy, Inc.,
705 S.W.2d 690 (Tex. 1986)] Note: The Division Order Statute (below) probably
changes this common law result.
Also, a lessee is liable for complete nonpayment of the lessor’s royalties (versus underpayments), even though the lessor has signed division orders stating that another operator (to whom the lease was assigned) was to make the royalty payments to lessor. [Williams v. Baker Exploration Co., 767 S.W.2d 193 (Tex. App. 1989)]

b. Division Order Statute

The Texas legislature enacted a statute which both clarifies and, unfortunately, sometimes confuses the effect of a signed division order between a lessee and lessor, [Tex. OIL & GAS-TEXAS 23.

Nat. Res. Code Ann. "91.401-.406] The statute uses the term "payee" to mean anyone entitled to payment from the sales proceeds from oil and gas wells in Texas. The term I.payor" can mean the purchaser of the oil or gas production, the lessee, or the well operator, whichever party undertakes to distribute the proceeds to the payees. Note: The D/O statute applies to division orders executed after August 26, 1991.

1) Division Order Information Standardized

The new law limits the abusive use of division orders by lessees who formerly placed provisions in division orders changing the terms of the lease and who then refused to pay lessors any proceeds from the sale of oil or gas until the lessors had signed the division orders with these added terms. The act clearly states that a payor (lessee) is entitled to receive a signed division order from payees containing only the following standard information:

a) The effective date of the D/O;
b) The fractional interest in production claimed by the payee;
c) The type of interest claimed (e.g., mineral or royalty);
d) A certificate of title to the share of production claimed;
e) An indemnity agreement to reimburse the payor for payments made if the payee does not have merchantable title;
f) An authorization to suspend payment to the payee pending a title dispute regarding the interest claimed by the payee; and
g) "Provisions for the valuation and timing of settlements of oil and gas production to the payee." This last item is the only one on the list that may cause interpretative problems.

2) Time Limits for Payment

The act sets time limits (varying from 60 to 120 days, unless otherwise specified in the lease) for the payor to pay the payees their shares. Payments may be withheld without interest only if there is a title dispute over the payee's claimed interest or a reasonable doubt that the payee has clear title. Otherwise, the payor must distribute the proceeds to the payee within the required time limits. If the payor does not do so, the payor must pay interest on the withheld amounts to the payee. In other words, if a payee refuses to sign a D/O containing only the prescribed standard information, the payor may withhold payments without interest. If the payee refuses to sign a D/O containing additional, nonstandard conditions, the payor cannot withhold payment and will be liable for interest on any withheld payments (and will have to pay the attorneys' fees for a payee who successfully sues for the payments and interest due her).
3) Comparison to Common Law Rules
The D/O statute expressly restates and codifies the common law rule that division orders are binding until revoked. (Under the statute, either party may unilaterally revoke a D/O with 30 days' notice to the other.) Note, however, that the statute makes no exception to this binding effect where the lessee is unjustly enriched as in Gavenda v. Strata Energy, Inc., a.2), supra. Thus, it appears that the plaintiff NPRIs in Gavenda would not be able to win past underpayments in a lawsuit involving a D/O executed after August 26, 1991.

6. The Market Value Problem

Many leases currently in use in Texas provide that the lessor's royalty on gas is to be paid on the basis of the "market price at the well" or the "market value at the well" where the gas is sold or used off the premises. The purpose of that language was to make it clear that the lessee had the right to deduct costs subsequent to production in calculating gas royalties.

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The expectation was that the "market value at the well" would be the same as the "amount realized for the sale of the gas" (after deducting the lessor's share of postproduction costs). However, the Texas courts have held that market value differs significantly from the amount realized under a gas sales contract. [Texas Oil & Gas Corp. v. Vela, 429 S.W.2d 866 (Tex. 1968)] Market value is not determined by the sales contract price, but is determined by the current price of similar gas sold in the area. Example: Lessee enters into a long-term gas sales contract with Pipeline at $1.20 per MCF, the prevailing market price of gas at the time the lease is executed. Over the next few years, the price of similar gas produced in the same market area rises to $2.40 per MCF. If the lease contains a market value royalty clause, the lessor's 1/8 royalty will be measured by the higher price. The market value of this gas is $2.40, even though it is being sold for only $1.20 under the long-term contract. The lessee must pay the lessor 1/8 of $2.40, or 300 per MCF, even though the lessee is receiving only $1.20 per MCF in revenues. If the royalty clause stated that the lessor was to be paid 1/8 of the "amount realized," the lessee would need to pay only 1/8 of $1.20.

7. Division Orders and the Market Value Problem
a. The Common Law
Suppose in the example above, that the lessor had signed division orders and accepted royalties based on the net proceeds or the amount realized from the sale of gas at $1.20 per MCF, even though the lease required payment based on "market value," which has risen to $2.40 per MCF. The Texas Supreme Court has held that by signing such division orders, the lessor has ratified payment based on the lower proceeds price. However, the lessor may revoke the division orders and demand payment under the terms of the lease; i.e., based on the market value price of $2.40 per MCF. The lessee must then pay on the basis of market value from the date of the lessor's revocation. The lessor may revoke the division order even if it states that it is irrevocable. [Exxon Corp. v. Middleton, 613 S.W.2d 240 (Tex. 1981)] Thus, the general common law rule is that division orders are binding until revoked.

b. The Division Order Statute
The division order statute codifies the general rule that D/Os are binding until revoked.
However, the statute also provides that D/Os cannot change or contradict an underlying lease. Despite this provision against changing or contradicting a lease, the statute expressly seems to allow lessees to use D/Os to convert market value leases into "proceeds" leases to clarify valuation of royalty payments. The legislative history of the statute suggests that the lawmakers intended to codify the common law result in Exxon Corp. v. Middleton (see infra, supra) that D/Os based on "proceeds" are binding until revoked, even though such a D/O amends and contradicts a lease requiring payment based on market value.

Examples: 1) A lease on 75 acres authorizes the lessee to pool into units of no more than 160 acres. The lessee pools into a 320-acre unit, drills a well on the 75 acres, and presents the lessor with a division order that apportions 75/320 of the royalty from the unit well to the leased tract. The lessor refuses to sign this division order because it conflicts with the lease. The lessee may not withhold payment from the lessor. The pooling is invalid and the lessee owes the lessor a full 1/8 royalty from the well. If the lessee withholds payment, the lessor is entitled to interest on the proper payments due.

2) Suppose in the example above that the lessor signs the division order and accepts the pooled share, not realizing that the share is wrong. Clearly, the lessor can revoke the division order and receive the right amount in the future. Can the lessor recover past underpayments as well? The statute states that any D/O that contradicts a lease is invalid to the extent of the contradiction. While the statute also states that D/Os are binding until revoked, this binding effect is arguably limited to erroneous payments that do not contradict a lease, such as mathematical errors in calculating the underlying mineral or royalty deed ownership. Thus, the lessor should be able to receive past underpayments. The lessee cannot argue that this D/O merely "clarifies" the royalty valuation under the lease. The lease is unambiguously clear.

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3) Lessee violates its duty to market natural gas at the highest possible price under the implied covenant to market. However, lessor has signed D/Os and accepted royalties based on gas sales at lower prices. Do these D/Os shield the lessee from damages for breach of the implied covenant to market? The answer is no. D/Os cannot relieve a lessee from its express or implied duties under the lease.

8. Determination of the Market Value
In determining what the "market value" of gas is, the court will look at a geographic area in which similar gas is sold and marketed. Within this area, the court will look at the price of gas similar to the gas sold by the lessee. Comparable sales must be of the same quality gas (i.e., the same sulfur and BTU content, same pressure, etc., or the comparable sales price must be adjusted to reflect these differences), the same end use of gas, and the same legal characteristics. Thus, gas sold in the federally regulated interstate market is not comparable to gas sold in the unregulated intrastate market. Gas sold in one price category of the federal Natural Gas Policy Act is not legally comparable to gas sold in another price category. (Federal price controls on gas were repealed in 1993.)

Note: The lessor bears the burden of establishing the market value of comparable sales.

9. Oil vs. Gas Royalties
In some older leases, the lessee agrees to pay a 1/8 royalty on oil and only a flat royalty
(e.g., $200 per year per well) on gas. It matters then whether the substance coming from a well is classified as oil or gas. Texas courts have held:

(i) Casinghead gas is included in the oil royalty clause. Casinghead gas is gas that inevitably accompanies the production of oil. Oil wells produce casinghead gas.

(ii) Condensate is included in the gas royalty clause. Condensate is liquid produced from gas wells. As the gas is produced, it is passed through a compressor on the surface, and some gas condenses into liquid condensate (also called distillate or natural gasoline). In sum, casinghead gas from oil wells is treated like oil, and condensate liquid from gas wells is treated like gas. (See VIII.F., infra, on classification of oil and gas wells.)

10. No Royalty Due on Take-or-Pay Payments

The typical lease states that the lessor's royalty is to be paid on oil and gas 'produced from said land' or "produced and sold or used off the premises." Because of the word "produced," lessors cannot secure any share of take-or-pay payments made to their lessees by pipeline purchasers. Many pipeline contracts to purchase gas from producers contain a provision obligating the pipeline-purchaser to take a specified quantity of gas annually or to pay the producer-lessee for the gas not taken. For example, "Pipeline X agrees to take 15 million cubic feet of gas a year at $3.00 per MCF or pay for the gas not taken." In the 1980s, a surplus "bubble" of natural gas caused many pipelines to take less than the quantities specified in their contracts. Producers received millions of dollars in payments under the take-or-pay clause. Not surprisingly, lessors attempted to secure a share of these payments, claiming they were part of the royalty obligation under the lease. The Texas courts held that take-or-pay payments are based on gas notproduced; royalties are due only on gas that is produced (i.e., physically extracted). Therefore, lessors do not share in take-or-pay payments.

VI. IMPLIED COVENANTS
A. INTRODUCTION

In the absence of express covenants regarding the matter, certain implied covenants owed by the lessee are recognized in oil and gas leases. In Texas, the view is that these covenants are implied "in fact" (rather than "in law") as a part of the contractual provisions of the lease, as necessary in order to effectuate the intentions of the parties. [Petroleum Producers Co. v. Steffans, 162 S.W.2d 698 (Tex. Comm. App. 1942)]

B. CONSEQUENCES OF "IN FACT" RECOGNITION

Three consequences flow from recognition of implied covenants as implied in fact.

1. Statute of Limitations The statute of limitations applicable to breach of a written contract applies.

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2. Continuing Liability of the Lessee The lessee remains liable, even after assignment of the lease, because of privity of contract.

3. Venue of Action for Breach of Covenants

Venue lies in the county where the written contract is agreed to be performed (i.e., where the leasehold is situated).
C. THE STANDARD OF PERFORMANCE
The standard of performance for the implied covenants is the objective standard of "the reasonably prudent operator" rather than the subjective standard of "the good faith operator." The lessor has the burden of proving that the lessee has failed to do what a reasonably prudent lessee would and should have done under similar circumstances. Thus, the reasonably prudent operator standard usually requires that the lessor prove that the desired action by the lessee would be profitable to the lessee. After all, reasonably prudent operators do not seek to operate at a loss. The lessee has no implied duty to drill wells unless the wells are expected to be profitable. To impose a drilling obligation on the lessee, the lessor must prove that the lessee can recover oil or gas having a value in excess of all reasonable costs of drilling, producing, and marketing the oil or gas. Note: Drilling expenses are included in measuring profitability under implied covenant cases.

The well is not yet drilled and so is not a sunk cost.

D. COMMON IMPLIED COVENANTS
The implied covenants commonly recognized are (i) the covenant to protect against drainage; (ii) the covenant to market; and (iii) the covenant to reasonably develop. Early in the history of the oil and gas industry the courts recognized an implied obligation of the lessee to drill an initial test well on the leased premises within a reasonable period of time after the lease was granted. However, the implied covenant to drill an initial test well does not exist under the modern oil and gas lease. There can be no implied promise to drill such a well when the lessee has the express right to hold the lease during the primary term by payment of delay rentals.

1. The Covenant to Protect Against Drainage
The covenant to protect against drainage requires that the lessee act as a reasonably prudent operator to protect the leased premises against drainage. This is an exception to the general rule that the lessee has no obligation to drill during the primary term of the lease. The courts hold that the parties to the lease do not intend that the lessee should have the right to permit the property to be depleted by drainage. The lessee must protect the leased tract against drainage even if the lessee has paid delay rentals.

a. Elements of Proof

Generally, in order to recover, a lessor must show: (i) substantial drainage; (ii) that a reasonably prudent operator would drill a well to protect the premises against drainage; and (iii) damages. The second element is the one most likely to cause difficulty. It requires that the lessor show that the offset well will produce in quantities sufficient to pay the lessee's cost of drilling, completing, and equipping the well, plus a reasonable profit. Damages are measured by the royalty the lessor would have obtained had the offset well been drilled (not by the amount of royalty oil drained away).

b. The Common Lessee Situation
Often a lessee will hold separate leases from several different landowners who are said to have a "common lessee." For example, A and B are neighbors and both lease separately to Exxon, who is then their common lessee. If Exxon drills a well on Ns tract, B may allege that it is draining B's tract. Some courts have increased the lessee's liability in the common lessee situation by relieving the lessor (B, in the example) of the obligation of
proving that an offset well would be profitable. In Texas, however, the lessor still must prove that the offset well would be profitable to drill in a common lessee situation.

1) Local Drainage
Most implied covenants involve local drainage between neighboring tracts. If a common lessee exists on both tracts, implied covenant law might require that the lessee pool the two tracts so that, in the example above, Exxon could be held liable to B for failing to pool B's tract with Ns tract, B would have to prove that a reasonably prudent operator would pool. If both leases contain pooling- clauses, it would be fairly easy to prove that pooling would be profitable. The lessor's OIL & GAS-TEXAS 27.

damages would be the amount of royalty the lessor would have received from the pooled unit.

2) Fieldwide Drainage
Amoco v. Alexander, 622 S.W.2d 563 (Tex. 1981), involved the issue of fieldwide drainage. Amoco owned the leases in 80% of the field. Oil was being pushed from the lower part of the reservoir onto tracts overlying the higher parts of the structure. The Alexanders owned land in the lower part of the reservoir and alleged that Amoco had an implied covenant to protect them against fieldwide drainage. The court agreed and stated that Amoco's duty could be met in several ways: by drilling offset wells, by drilling replacement wells to replace watered-out wells on the Alexander tract, or by seeking administrative relief from the Railroad Commission such as a change in the prorationing order or Rule 37 exception wells. (See VIII., infra.)

Note: The Alexanders won the lawsuit by proving that a reasonably prudent operator would have secured Rule 37 exception wells to replace the watered-out wells on their tract.

2. The Covenant to Market
The implied covenant to market requires the lessee to market production from the leased premises (i) within a reasonable period of time, and (ii) at the best available price. How long is reasonable is a question of fact. A reasonable delay will generally be longer for gas than for oil, because gas is more difficult to transport. Payment of shut-in royalties does not negate the implied covenant to market as a reasonably prudent operator. Neither does the lessor's signing of division orders relieve the lessee of the implied duty to market. Under the 1991 D/O statute, the execution of a division order is not to change or relieve the lessee's express or implied obligations in the lease. (See V.F.5.-7., supra.)

Cases finding a breach of the obligation to market at the best available price often involve self-dealing between the lessee and related entities. Thus, in Amoco Production Co. v. First Baptist Church of Pyote, 579 S.W.2d 280 (Tex’ Civ. App. 1979), liability was found where the lessee, Amoco, sold the lessor's gas at a price less than the best price readily available in order to achieve modifications of an existing gas contract with Amoco’s gas purchaser.

3. The Covenant for Reasonable Development

Though the lessee under a modern oil and gas lease has no obligation to drill an initial well on the leased premises, once oil or gas is found on the premises, the courts recognize
an obligation to continue to develop the premises reasonably. [Clifton v. Koontz, 325 S.W.2d 684 (Tex. 1959)] The essential concept of this implied covenant is that the economically motivated prudent operator will fully develop resources under his control within a reasonable period of time. What is reasonable development is a question of fact that depends on the particular circumstances presented. In order to enforce the implied covenant, the lessor must prove that: (i) there is a probability that additional wells drilled would return the costs of drilling, completing, and operating, plus a reasonable profit; and (ii) the lessee has acted imprudently in failing to drill such wells.

a. Best Technology
The covenant to reasonably develop includes a duty to use the best technology that a reasonably prudent operator would use to maximize oil and gas recovery.

b. Conditional Cancellation
Damages equal to the amount of royalty lost because of the lessee's failure to drill development wells are often difficult to prove. When the remedy at law (damages) is inadequate, the courts will often order equitable relief. The court may order a conditional cancellation of the lease if a breach is found. The lessee is then given a certain period of time within which to perform the covenant or the lease will be canceled (except as to the acreage immediately surrounding any existing wells which have been drilled by the lessee).

4. The Covenant to Further Explore
a. Generally
Some courts in other states seem to recognize an implied covenant to explore. Lessors can show breach of this covenant without having to prove the profitability of drilling exploratory wells. Exploratory wells are drilled into new strata to discover new fields. They are high-risk and are often, by nature, dry holes or unprofitable.

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b. Texas View
In Clifton v. Koontz, supra, the court held that there was no implied covenant to explore in Texas separate from the implied covenant to reasonably develop. The development covenant covers all additional drilling duties once production is obtained on the lease, whether the drilling is into an already producing stratum or into new strata. In either case, the burden rests on the lessor to prove that drilling additional wells would bring a "reasonable expectation of profit to the lessee."

Examples: 1) Clifton involved a small, 320-acre tract that already had one gas well on it capable of draining the entire acreage. The court held that the lessor did not meet the burden of proving that a second well into a different, deeper stratum would be profitable to drill. However, the court expressly stated that it was not passing on a situation where a lessee was attempting to hold a large lease covering several thousand acres by production from a comparatively small area or where an unreasonably long period of time had elapsed since the last development of the lease. This is called the "Clifton exception language." The language suggests that the lessor of a large, relatively undeveloped tract may not have to prove the expected profitability of drilling additional wells in the undeveloped areas.

2) In Sun Exploration and Production Co. v. Jackson, 783 S.W.2d 202 (Tex. 1989), the supreme court reaffirmed its holding in Clifton that there is no implied covenant to
explore in Texas independent of the implied covenant to reasonably develop. This case involved a 10,000-acre lease. The lessee had developed only 1,800 acres of the lease and the lessors sued for breach of the implied covenants to develop and to explore. The jury found that the lessee had not breached its implied duty to develop, but had breached its implied duty to explore the lease outside of the 1,800 acres. The supreme court reversed the lower courts' rulings in favor of the lessor, and held that the jury's first finding of no breach of the development covenant disposed of all issues under Texas law. The court stressed that the critical question in implied covenant cases is whether the lessor can prove a reasonable expectation of profit from additional drilling, regardless of whether the proposed well is to penetrate currently producing strata or new strata. The court did not clarify the meaning of the "Clifton exception language."

E. REMEDIES IN GENERAL
The lessor's remedy may be twofold: (i) recovery of damages; and (ii) cancellation of the lease in whole or in part.
1. Actual Damages
The measure of actual damages is the value of the royalty that the lessor would have received had no breach occurred.
2. Exemplary Damages
Because implied covenants are contractual in nature, exemplary or punitive damages may not be recovered (unless the lessee's breach amounts to an independent tort, such as fraud).
3. Equitable Relief
Unconditional cancellation of the lease is usually not an appropriate remedy for breach of an implied covenant. Conditional cancellation is often used, giving the lessee a second chance to retain his lease by correcting his breach. (See VI.D.3.b., supra.)
4. Liquidated Damages
An oil and gas lease may provide that if the lessee does not drill a certain number of wells, or breaches an implied covenant to drill, the lessee must pay liquidated damages (e.g., $75,000 for each well not drilled). The courts will uphold this liquidated damages provision as long as the amount is reasonable.
5. Notice Required
Where the only remedy sought is damages, no notice is required prior to institution of the suit. Where equitable relief is sought, either alone or in conjunction with legal relief, notice should be given and demand made prior to filing the action.

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It the lessee and lessor specifically agree on a development or exploration plan, the court will not apply implied covenant law.
Example: Lilly leases to Exxon and both parties agree that Exxon will drill four wells to develop Lilly's 200-acre tract. Lilly cannot win a suit for breach of the implied covenant to develop even if Lilly can prove a fifth well would be profitable. However, Lilly might be able to force Exxon to drill a fifth well if the tract is being drained, because an express development clause does not negate the separate covenant to protect against drainage.
VII. SPECIAL CONVEYANCING PROBLEMS
A. INTRODUCTION
The focus of this section is upon a variety of unrelated special problems associated with the conveyancing of oil and gas interests.

B. THE EXECUTIVE RIGHT
1. Generally
The executive right is the right to lease and manage the mineral estate. One way of avoiding the problems created by the multiplicity of small fractional interests in oil and gas rights owned by co-tenants is for grantors of such interests to reserve, as an incident to the grant, the exclusive power to lease the interest granted.

Example: Able grants to each of his three daughters an undivided 1/3 of the mineral fee in his land, reserving to himself the sole power to lease the property. The reserved power to lease is referred to as the "executive right." The interest of the daughters is commonly called a "nonexecutive mineral right" or a "nonparticipating mineral interest." The daughters own mineral estates, but they cannot lease their estates. If Exxon wants to lease the land, Exxon needs to negotiate only with Able, not with the three daughters (who are co-tenants).

2. Executive Right Is Interest in Land
The Texas Supreme Court held that the executive right is an interest in land and therefore conveyances of the executive right follow the general rules applicable to conveying real property. In so holding, the court overruled earlier cases which had held that the executive right was a power of appointment based in contract and agency principles rather than an interest in land. [Day & Co. v. Texland Petroleum, Inc., 786 S.W.2d 667 (Tex. 1990)]

3. "Greatest Possible Estate Rule" Applies to Executive Right
Because the executive right is now characterized as an interest in land, the "greatest possible estate rule" applies to it as to any conveyance of real property. Under this rule, a warranty deed passes all of the estate owned by the grantor at the time of the conveyance unless there are exceptions in the deed that reduce the estate conveyed. This rule has a significant effect on the ownership of the executive right when fractional mineral interests are conveyed and severed from the executive right.

Example: Able grants a general warranty deed on Blackacre to Baker, reserving a 1/2 mineral interest but expressly granting Baker the executive right on all of Blackacre. Later, Baker conveys a warranty deed on Blackacre to Charlie, reserving a 1/4 mineral interest to Baker in addition to Able's prior reservation of a 1/2 mineral interest. Thus, the mineral ownership of Blackacre is as follows: Able-1/2; Baker-1/4; and Charlie-1/4.

The question is: Does Baker or Charlie own the executive right on Able's 1/2 mineral interest? Able had severed this executive right and conveyed it to Baker. Does this severed executive right pass to Charlie when the deed from Baker to Charlie is completely silent on the issue?

Applying the greatest possible estate rule to the conveyancing of severed executive rights results in the following ownership of the executive right: Able-0; Baker-1/4; and Charlie-1/4 plus 1/2. Charlie owns the executive right on Able's 1/2 mineral interest because the deed from Baker to Charlie is held to pass everything that Baker owned that was not
expressly reserved or excepted by Baker. Baker has reserved the executive right on the 1/4 mineral.

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estate Baker kept. By definition, the grant or reservation of a mineral interest includes the executive right attached to that interest, unless a grantor (like Able) expressly severs the executive right from a particular mineral fraction. The greatest possible estate rule will convey this severed executive right to subsequent grantees, unless intermediate grantees expressly reserve the right to themselves. Thus, if Baker wants to keep the right to lease Able's 1/2 mineral interest, Baker must specifically except this right from the conveyance to Charlie.

4. Rule Against Perpetuities and Restraints on Alienation
Ownership by one person of the perpetual executive right over another person's mineral interest probably does not violate the Rule Against Perpetuities. Presently vested property rights do not violate the Rule Against Perpetuities, and the executive right is an interest in real property.

The Texas courts have held that a nonmineral interest owner can exercise the executive right expressly reserved to him. The reservation does not unlawfully restrain the alienation of property. In Elick v. Champlin, 697 S.W.2d I (Tex. App. 1985), a grantor conveyed all the minerals under his land while reserving a 1/32 royalty and the express right to join in the execution of leases. The mineral interest owner argued that the reservation of the executive right in a mere royalty interest owner unduly restrained the mineral interest owner's ability to lease and develop the land. However, the court held that executive rights are freely severable from the mineral estate and can be exercised by a royalty interest owner if the parties have expressly contracted for this result.

5. No Partition
The grant of the executive right constitutes a waiver of the right to partition. (See IV.A.6.b., supra.)

6. Lease in Violation of Executive Right Owner's Power
A lease made in violation of the terms of the power is voidable by the grantor of the power.

Example: Able grants a 1/4 undivided mineral interest to Baker, retaining the power to lease, "provided a royalty of at least 1/6 of production is obtained." Able leases the land to Exxon, for a 1/8 royalty. Baker may void the lease as to her portion of the leased land.

7. Duty of Executive Right Owner
Owners of nonexecutive interests depend on the acts of the executive (namely, signing an oil and gas lease) to realize income from their interests. The standard of care an executive must use is unclear.

a. "Utmost Good Faith and Fair Dealing" Standard
Until 1984, the commonly accepted standard of duty owed to the nonexecutive interests was "utmost good faith and fair dealing." This standard requires the executive right owner to execute an oil and gas lease on the same terms that he would contract for if there were no nonexecutive interests on the land. The executive must use the diligence of an ordinary, prudent landowner to obtain all reasonable benefits from developing the land. This standard requires more than good faith, but it does not require the executive right owner to act as a fiduciary and subordinate his own interests to that of the nonexecutive owners.
b. Fiduciary Duty
In 1984, for the first time, the executive duty was characterized as fiduciary, thus allowing the nonexecutive-owner plaintiffs to recover exemplary damages against the executive right owner. In this case, the executive leased to himself and engaged in other acts of self-dealing designed to deprive the nonexecutive owners of benefits that they would normally expect to receive and to grant special benefits only to the executive. The remedy for breach of this duty may include cancellation of the executive right, cancellation of any leases or other contracts that violate the duty, actual damages, and exemplary damages. [Manges v. Guerra, 673 S.W.2d 801 (Tex. 1984)]

c. "Utmost Good Faith and Fair Dealing" Standard Usually Applies
In cases after Manges v. Guerra that did not involve egregious acts of self-dealing, the courts have reverted to the "utmost good faith and fair dealing" standard. For example, in a case where the nonexecutive interest was an NPRI with the right to a fixed fraction equal to "a 1/16 royalty," the executive could not readily manipulate lease benefits in any self-dealing manner, and no breach of duty was found. The court found that the executive had diligently attempted to lease the land for both oil and gas and tar sands. (Pickens v. Hope, 764 S.W.2d 256 (Tex. App. 1988)) Still, it is not clear when the courts will apply a fiduciary duty instead of the lesser duty of utmost good faith.

8. Executive Right Owner's Duty and Pooling
The owner of the executive right does not have the right to pool nonexecutive owners, such as owners of NPRIS. (See V.D.6.g., supra.) If the executive does, nevertheless, pool the land subject to the nonexecutives' interest, the nonexecutives may elect to ratify the pooling instead of declaring it void as to them. In one case, the court held that the duty of utmost good faith mandated that the executive owners notify the NPRI owners of the execution of a pooled lease so that the NPRI owners could elect to ratify or not. [Benavides v. Warren, 674 S.W.2d 353 (Tex. App. 1984)]

Note: A lessee cannot require an NPRI to sign a division order that has the effect of ratifying a pooled unit as a condition of receiving royalty payments. (See V.R5., supra.)

C. THE RIGHT TO USE THE SURFACE

1. Dominant Mineral Estate
The mineral estate in Texas is dominant. This means that, unless limited in some way by the lease, the mineral interest owner or lessee has an implied easement to use the servient (i.e., surface) estate as is reasonably necessary to carry out the purpose of the lease (i.e., to search for, develop, and produce oil and gas). Consequently, the right of a lessor or surface owner to sue for damage to the servient estate will accrue only if-. (i) use of the servient estate by the lessee is excessive or not reasonably necessary to conduct oil and gas operations; (ii) the use is not for the benefit solely of the minerals under the tract leased; or (iii) the use is contrary to the provisions of the lease, or statutes, ordinances, governmental rules, or regulations. Thus, if a lease does not authorize pooling, the lessee may not use the surface of that lease to conduct operations on other tracts.

a. Limited Exception Possible in Certain Populated Counties
The dominance of the mineral estate can make real estate development on a severed
surface estate difficult and risky. Unless a reasonable alternative exists on the leased tract, the lessee of a severed mineral estate can place wells and other required facilities on the surface estate of housing developments, golf courses, and shopping centers (absent zoning prohibitions). In response, the Texas legislature has given the Railroad Commission the authority, in certain populated suburban Texas counties, to impose restrictions on the mineral estate owner's use of the surface. The surface owners of a qualified subdivision of not more than 160 acres can apply for approval of a plat of the subdivision's surface, showing the proposed location of well sites, roads, and pipeline easements for oil and gas development. The Commission can approve the plat application if it finds that the mineral resources under the subdivision can be fully and effectively exploited. The mineral estate owners are then limited to the designated operations sites on the plat. [Tex. Nat. Res. Code Ann. "92.001-.007"

2. The Accommodation Doctrine

There is a further implied limitation on the mineral estate owner's right to use the servient estate if the use (i) substantially interferes; (ii) with a preexisting surface use of the lessor; and (iii) alternative methods are practicable on the leased premises for the lessee to satisfy his needs. If all three tests are met, the severed mineral interest or lessee must accommodate the existing uses of the surface.

Examples: 1) In Getty Oil v. Jones, 470 S.W.2d 618 (Tex. 1971), Getty Oil was required to expend several thousand dollars to move its pumps into underground cellars so that farmer Jones's rotating irrigation system could continue to roll across the surface of the land. Note that the alternative methods available to the lessee must be available on the leased premises. The lessee cannot be forced to buy acreage next door to conduct slant well drilling in order to leave the surface of the leased tract undisturbed. Nor can a lessee be forced to purchase water off the leased premises in order to preserve a farmer's scarce fresh water for irrigation.

2) In Sun Oil v. Whitaker, 483 S.W.2d 808 (Tex. 1972), a lessee, Sun Oil, was allowed to use huge amounts of fresh water belonging to the surface owner (farmer Whitaker) for a water injection program (called a waterflood) which would sweep additional oil out of the reservoir. No alternative source of repressuring injectant was available on the leased premises. Because the mineral estate is dominant, the use of this fresh water was allowed even though it would significantly decrease the life expectancy of the farming operation.

Note: In response to Sun Oil, the legislature enacted a statute that somewhat reduces the dominance of the mineral estate over the use of fresh water. The statute requires an operator intending to use fresh water for injection purposes to provide information about other alternative injectants. If the Commission finds that another substance (other than fresh water) is economically and technically feasible for the operator to use (whether or not it is available on the leased tract), the operator will be prohibited from using the fresh water. Thus, an operator might be required to use salt water or carbon dioxide produced from wells on adjacent tracts as the injectant.

D. INTERPRETATION OF THE WORD "MINERALS"

Some deeds and leases reserve or convey the "oil, gas, and other minerals" or "the
minerals" under Blackacre. This raises the issue of what substances are included in the term "minerals." In Texas, oil and gas are minerals as a matter of law. But the courts have had a much harder time deciding whether strip-mined substances such as lignite (a low-grade form of coal), uranium, and iron ore are included in "minerals." (Of course, if these strip-minable substances are expressly conveyed or reserved in the deed or lease, there is no problem.) If X conveys "the minerals" on Blackacre to Y, reserving the surface, can Y destroy Blackacre's surface by strip-mining coal? The courts have accepted and rejected several tests including:

1. Ejusdem Generis Rule Rejected
The rule of ejusdem generis limits general words (such as "minerals") to substances of the same class as that of a preceding, specifically designated substance. This rule has been rejected in Texas as a rule of construction in conveyances of minerals. Thus, in a conveyance of "oil, gas, and other minerals," the term "minerals" may be construed to include nonhydrocarbon, solid minerals, such as sulfur. [Southland Royalty Co. v. Pan American Petroleum Corp., 378 S.W.2d 50 (Tex. 1964)]

2. Pre-1983-Surface Destruction Test Used
In 1971, the Texas Supreme Court decided that iron ore belonged to the surface owner, not the mineral estate owner, even though iron ore is generally considered to be a mineral. [See Acker v. Guinn, 464 S.W.2d 348 (Tex. 1971)] The court's rationale was that mining the iron ore would completely destroy the surface (unlike production of oil and gas). The 1971 rationale was followed in 1977 and 1980 in the case of strip-mined lignite. [See Reed v. Wylie, 554 S.W.2d 169 (Tex. 1977); Reed v. Wylie, 597 S.W.2d 793 (Tex. 1980)] The "surface destruction test" was set out as follows:

a. If a substance is at or near the surface so that any reasonable method of extraction would, as of the time of removal, consume, destroy, or deplete the surface, the substance is a part of the surface estate as a matter of law.
b. Deposits of lignite within 200 feet of the surface are "near-surface" as a matter of law. (Note: In the Moser case, infra, the court interpreted this to mean that near-surface lignite belongs to the surface estate owner as a matter of law.)
c. If a particular substance is deemed a part of the surface estate under the above rules, additional deposits of the same substance found at other depths are also a part of the surface estate. (Thus, if deep coal is found underlying surface deposits of lignite, the deep coal also belongs to the surface owner.)
d. In determining whether the method of mining would necessarily deplete or consume the surface estate, the availability of restoration or reclamation devices is immaterial.

3. 1983-The "Ordinary and Natural Meaning" Test
a. The Moser Case
In Moser v. United States Steel Corp., 676 S.W.2d 99 (Tex. 1984), the court announced its intention to abandon the surface destruction test because it was unworkable. Title exiii-pinars could not determine the ownership of minerals from the lanRuag(-, i-ri ther the term P- oil & GAS-TEXAS 33. natural MSHning" of the words, , that the UilthiUM In this ease Belongs #Wttorat owner, not the surface owner. d to this The court also hold that a mineral owner has the rijht to
make such use of the surface as is reasonably necessary for the removal of minerals, even if the use destroys the surface. However, the court imposed on the mineral owner the obligation to compensate the surface owner for surface-destructive removal, unless the substance removed is specifically granted or reserved (in which case it is assumed the parties intended no compensation).

b. Test Prospective Only
The "ordinary and natural meaning" test will be applied only to conveyances of "other minerals" executed after June 8, 1983 (the date of the court's first decision in the Moser case).

c. Exceptions to Moser Rule
The court specifically excepted from its new rule all of those substances that had previously been held to belong to the surface estate. These nine substances, which belong to the surface estate as a matter of law, are:
1) Building stone;
2) Limestone;
3) Caliche (a type of clay);
4) Surface shale;
5) Water (salt water has been held to belong to the surface estate as well as fresh water);
6) Sand;
7) Gravel;
8) Near-surface lignite or coal; and
9) Iron ore (probably only near-surface iron ore).

d. Test in Nonparticipating Royalty Conveyance
The owners of NPRI interests are not entitled to any royalties on substances that belong to the surface estate owner. An NPRI interest is an interest in property carved only from the mineral estate, and therefore the NPRI does not share royalties on these substances. Example: In conveyances occurring before June 8, 1983, Sam acquired the surface, Minnie retained the minerals, and Roy bought an NPRI deed from Minnie to "1/2 of all royalties on oil, gas, and other minerals produced" from Blackacre. In 1987, Sam executed a mineral lease to Uranium Co. to strip-mine uranium (under the Moser test, Sam as the surface owner owns this uranium). Roy wants half of the royalties on this uranium; however, he is entitled to nothing.

e. Test Does Not Apply to State Reserved Minerals
None of the above-described tests for ownership of minerals in private conveyances applies to minerals reserved by the state of Texas. Thus, a landowner holding a patent (a deed) from the state, wherein the state reserved the minerals, does not own the near-surface lignite—it belongs to the state. Cases involving state ownership of minerals are decided using the legislative history and judicial interpretations of various land sales acts.

E. TRANSFERS BY LESSOR OR LESSEE
In the absence of a lease provision restricting alienability (which might be unenforceable as a restraint against alienation), a lessee may assign all or any part of her leasehold interest at any time.

1. Indivisibility of Leases as to Express Covenants
Ordinarily, oil and gas leases are indivisible as to the express covenants that fix the vesting of the determinable fee, such as the express covenant to drill a certain number of wells.

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Therefore, an assignee of a segregated portion of the original leasehold holds his interest subject to the performance or nonperformance of such express covenants. Performance of the covenant by any of such assignees mutes to the benefit of all such assignees, and nonperformance works to the detriment of all of them.

2. Divisibility of Leases as to Implied Covenants

Oil and gas leases may be divisible as to the implied covenants, and each assignee of a segregated portion of the lease would then have the obligation to perform the implied covenants with respect to his particular tract without reference to other portions of the original leasehold. [Felmont Oil Corp. v. Pan American Petroleum Corp., 334 S.W.2d 449 (Tex. Civ. App. 1960)]

F. NONAPPORTIONMENT RULE

Where property subject to an oil and gas lease is subdivided into separately owned tracts by the lessor or her successors, the issue arises as to how subsequent payments under the lease are to be shared by the separate owners. Payments of delay rentals will be apportioned among the owners of the subdivided property according to the acreage owned by each. However, a different rule is applied to royalties. Lease royalties are not apportioned among the owners of the subdivided property. Instead, the owner of the tract with the producing well is entitled to all royalties due under the lease. This is the nonapportionment rule. It is an application of the rule of capture.

The nonapportionment rule may be changed by an entirety clause in the lease, which provides that if the leased premises are ever owned severally or in separate tracts, all royalties accruing under the lease shall be treated as an entirety and shall be divided among and paid to the separate owners in the proportion that the acreage owned by each bears to the entire leased acreage.

Note: The nonapportionment rule arises in the context of a post-lease conveyance. Blackacre is first leased, then the lessor subdivides Blackacre by selling smaller tracts to others. Compare this context with the community lease context discussed infra.

G. THE COMMUNITY LEASE

A "community lease" occurs when several landowners of adjacent tracts sign a single lease granting mineral rights in the combined acreage owned by all the lessors to a single lessee. The execution of the lease will be treated as an agreement to pool, and each lessor will be entitled to share in production from the combined acreage. If the lease does not specify how the royalty on oil and gas produced by the lease is to be allocated among the lessors, allocation will be made on the basis of surface acreage contributed to the unit. Parol evidence is inadmissible to show that no pooling was intended when the community lease was executed. Technically, when a community lease is executed, there is a cross-conveyance whereby each landowner signing the leases conveys a fraction of his royalty interest to his co-lesseors, receiving in return a conveyance of a partial interest in the co-lesseors' royalty rights. The community lease is the only example in Texas jurisprudence of the court's creating an implied agreement to pool.
H. FRACTIONAL INTEREST PROBLEMS

Fractions confuse people. Mineral and royalty interests are often conveyed or reserved as fractions of fractions. The resulting confusion has spawned case law in the following areas:

1. "Out Of" vs. "Of"

When the owner of a fraction of a mineral interest conveys or reserves a fraction, an ambiguity may arise as to whether the fractions are to be multiplied by each other or subtracted from each other.

Example: Grantors own an undivided 1/2 mineral interest. They convey "an undivided 1/2 interest out of the interest owned by grantors." In Texas, the grantors will be held to have conveyed all that they owned. Thus, "out of" means "subtracted from."

If the grantors had conveyed "an undivided 1/2 of the interest owned by grantors," the grantors will be held to have conveyed 1/2 of 1/2 or a 1/4 undivided mineral interest. The grantors will still own the other 1/2 of their original 1/2.

2. "Described" vs. "Conveyed"

In interpreting the words of ambiguous conveyances, the Texas courts take a very literal approach to the meaning of the words. Thus, it makes a difference whether the fractional interest conveyed (or reserved) is based on the land "conveyed" or the land "described."

Example: X owns an undivided 1/2 mineral interest in 240 acres of Blackacre. X conveys to Y the following general warranty deed:

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X grants to Y an undivided 1/2 interest in the following described land: 240 acres of Blackacre (described by metes and bounds). X reserves an undivided 1/8 of the usual 1/8 royalty interest in oil and gas that may be produced from the above-described land.

If Y leases for a 1/8 royalty and a producing well is drilled on Blackacre, what amount of royalty has been reserved to X?

In King v. First National Bank of Wichita Falls, 192 S.W.2d 260 (Tex. 1946), X was held to be entitled to 1/8 of the 1/8 royalty, or a 1/64 royalty. Y argued that X should receive only 1/2 of 1/8 because X conveyed only 1/2 of the minerals. The supreme court read the royalty reservation literally. The 1/8 of 1/8 was keyed to the described land (the entire 240 acres), not to the conveyed land (1/2 of the 240 acres). Note: If the reservation had read that X reserved "an undivided 1/8 of the usual 1/8 royalty in oil and gas produced from the above conveyed land," X would have reserved a 1/2 of 1/8 of 1/8 royalty. [See also Averyt v. Grande, Inc., 717 S.W.2d 891 (Tex. 1986)]

3. The "Subject To" Clause and the "Two-Grant Theory"

In post-lease conveyances of mineral interests (wherein the land is leased as a whole first, and then subdivided), the conveyance is often made "subject to" the prior lease. This can create confusion in the fractional shares of lease benefits owed to the grantor and grantee.

Example: 0 owns 320 acres of Blackacre. 0 conveys an oil and gas lease on the 320 acres to Bigg Oil. The lease does not have an entirety clause. 0 conveys to X a "1/2 mineral interest in 90 acres of Blackacre subject to an oil and gas lease to Bigg Oil, and including 1/2 of all the royalties and rentals to be paid under the terms of said lease." Bigg drills a well on the 320 acres, but not on the 90 acres conveyed to X.

How are royalties to be distributed?
In Hoffinan v. Magnolia, 273 S.W. 828 (Tex. Comm. App. 1925), the court used the two-grant theory. The first grant conveyed to X a 1/2 mineral interest in the 90 acres. The second grant conveyed to X half of all the royalties under the lease on the entire 320 acres. Therefore, X would receive 1/8 of all the royalties from the well that Bigg drilled. Again, the Texas court interpreted the language of the instrument very literally and refused to allow parol evidence to ascertain the intent of the parties. To avoid the result in the above example, 0 should have added to the language in the granting clause above "insofar as the lease covers and includes the above-described 90 acres."

4. Clauses in Deeds Are to Be Harmonized Under the "Four Corners" Rule Very often, mineral and royalty deeds are conveyed on land that is already subject to an oil and gas lease (a post-lease conveyance). The parties often use printed "fill-in-the-blank" mineral deed forms and then fill in the blanks with fractions that may seem inconsistent. Example: Able conveyed a deed to Baker at a time that Blackacre is under lease. The printed form had three clauses as follows:

(i) Able grants to Baker "1/2 of the 1/8 interest in and to all of the oil and gas in and under and that may be produced from Blackacre." (The granting clause.)
(ii) Said land is now under an oil and gas lease and this deed is subject to said lease, but covers and includes 1/16 of all the royalties due under the lease. (The "subject to" clause.)
(iii) In the event the lease terminates, Able and Baker will each own a 1/2 interest in the oil and gas together with a 1/2 interest in all future lease benefits. (The future interest clause.)

The first clause unambiguously grants Baker a 1/16 mineral interest (see VII.I.2.c., infra). The second clause states that Baker owns 1/16 of the 1/8 royalty due under the current lease. This is exactly what the owner of a 1/16 mineral interest should receive and there is no inconsistency here. However, the third clause states that Baker will own a 1/2 mineral interest (and 1/2 of all benefits) when the first lease expires. This fractional mineral interest obviously differs from that granted in the first clause. The question arises whether the deed has inconsistent clauses in it (in which event the court would have to pick which clause prevails) or whether the clauses can be harmonized under the "four corners" rule and all be given effect.

The Texas Supreme Court has held that deed clauses are not necessarily inconsistent just because the fractional interest conveyed in the granting clause differs from the fractional interest conveyed in the future interest clause. Using the four corners rule, the court found that the parties above clearly intended in unambiguous language to convey a 1/16 mineral interest under the current lease and a 1/2 mineral interest in future leases. [See Luckel v. White, 819 S.W.2d 459 (Tex. 1991); Jupiter Oil Co. v. Snow, 819 S.W.2d 466 (Tex. 1991)]

5. The Duhig Doctrine
   a. General Application
   The Duhig doctrine applies when a three-party chain of conveyances seemingly results in the conveyance of more than 100% of the mineral interest. In this event, the court must
determine whose title will fail. The Duhig doctrine states that the grantor, and not the
grantee, will bear the loss.
Example: Able, owner of the fee simple in all of Blackacre, conveyed to Baker, by
general warranty deed, "all of Blackacre except an undivided 1/2 of the minerals which is
excepted and reserved to the grantor." Subsequently, Baker, intending to convey all of the
surface and keep 1/4 of the mineral estate, conveyed to Charlie, by general warranty
deed, "all of Blackacre except an undivided 1/4 of the minerals which is excepted and
reserved to the grantor." Who owns what fractions of the minerals? Able claims a 1/2
interest, Baker claims a 1/4 interest, and Charlie claims a 3/4 interest. There is a
conveyance of more than 100% of minerals. The root of the problem is the ambiguous
conveyance between Baker (the grantor) and Charlie (the grantee). Applying the Duhig
doctrine, the courts will establish title as follows: Able owns a 1/2 interest (there is no
ambiguity here). Baker's grant warranted that Charlie would receive a 3/4 interest (all of
Blackacre except 1/4). Therefore Charlie can take title to the 1/4 fractional mineral
interest claimed by Baker, and Charlie will then own this 1/4 plus an undisputed 1/4. So
Charlie owns 1/2, Able owns 1/2, and Baker owns zero. Charlie will also have a cause of
action in damages for breach of warranty for 1/4 of the minerals because Baker warranted
the grant of a 3/4 interest and Charlie obtained title to only a 1/2 interest.
Even if Charlie knew that Able owned a prior outstanding 1/2 interest, Charlie, as the
grantee under a general warranty deed, will win against Baker.
b. Scope of the Doctrine

In a more recent case, the court applied the Duhig doctrine to a deed that did not contain
a general warranty, basing its decision on the principles of estoppel and afteracquired
title, rather than on the existence of a warranty clause. [Blanton v. Bruce, 688 S.W.2d
908 (Tex. App. 1985)] The deed at issue was not a quitclaim deed, but simply a deed
conveying a fractional mineral interest (such as "one-half of the minerals") without an
express warranty.
The Duhig doctrine does not apply to oil and gas leases because these leases are usually
prepared by the lessee (grantee) who often intentionally asks the lessor (grantor) to
convey and warrant more than the fractional interest owned by the grantor. Mineral
deeds are usually prepared by the grantor and so are construed against the grantor.
C. Lease Payments May Differ from Duhig Distribution

While the Duhig rule establishes title to the mineral estates in the three-party chain, the
parties may have contracted to divide the royalties and rentals from their respective
fractional interest in a proportion different from their ownership title to the minerals.
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Example: Assume the same conveyances from Able to Baker to Charlie as in the example
above, but Baker and Charlie have contractually agreed that "Charlie shall have the right
to lease both Baker's and Charlie's interests; however, the leases must provide for the
payment of 1/4 of all bonus and royalties to Baker." Under Duhig, Baker has title to zero
mineral interest (see above), but he has the contractual right to receive 1/4 of the lease
benefits.
Note: Where lease benefits are distributed so differently from mineral titles, the parties
will probably seek reformation of the deeds.
THE MINERAL/ROYALTY DISTINCTION
Sometimes deeds are poorly worded and fail to disclose clearly whether the grant or reservation is of a mineral interest or a royalty interest. The Texas courts have established blackletter rules to use in interpreting these ambiguous instruments.
1. Royalty
A grant of an interest is likely to be construed as a royalty if:
a. The deed says it is a royalty.
b. The grant is a fraction of the oil and gas "produced and saved and marketed."
c. The grant is described as cost-free.
d. The grantee does not receive any incidents of the mineral estate such as the right to lease, the possessory right to enter upon the property, the right to receive bonus and rentals, etc.
2. Mineral Interest The grant is likely to be construed as a mineral interest if:
a. The deed says it conveys a mineral interest.
b. The grant is a fraction of the oil and gas "in and under the land."
c. The grant is a fraction of the oil and gas "in, under, and that may be produced from the land."
d. The grantee's interest is cost-bearing (i.e., profit-sharing) and includes the right to lease and receive bonus and rentals in addition to receiving royalty.

TOP LEASES
A top lease is an oil and gas lease on property already subject to a lease. A top lease is a partial alienation of the possibility of reverter retained by the mineral interest owner under the original or "bottom" lease.
1. The Doctrine of Obstruction
A pitfall in preparing top leases is the equitable doctrine of obstruction. Where a top lease is effective at the same time as a bottom lease, the title of the bottom lessee is clouded unless the top lease is specifically made subject to the bottom lease. The doctrine of obstruction will suspend the running of time under the bottom lease for the duration of the obstruction or for a reasonable time after its removal.
2. Rule Against Perpetuities A top lease may also be voided by the Rule Against Perpetuities.
Example: John Landowner gave a top lease to Bigg Oil, which provided that, "This lease shall be effective from and after the termination of [description of the bottom lease]." The top lease is void under the Rule Against Perpetuities because it is possible that the bottom lease will be extended by operations and/or production for a period of time greater than allowed by the Rule Against Perpetuities. [Peveto v. Starkey, 645 S.W.2d 770 (Tex. 1982)]

VIII. STATE REGULATION
A. ORIGINS OF REGULATION
Because the unfettered common law rule of capture caused economically inefficient drilling and the physical waste of oil and gas, states passed acts to regulate (i) well spacing; (ii) well production rates (prorationing); and (iii) compulsory pooling.
B. TEXAS RAILROAD COMMISSION
In Texas, the Railroad Commission is responsible for state regulation of oil and gas production. The Commission issues statewide and fieldwide rules regulating the spacing and density of wells. The Commission also fixes production quotas for the state, for each oil and gas field within the state, and for each well in each oil and gas field within the state. Orders involving spacing and production regulation are appealable solely to the district court in Travis County.

C. SPACING REGULATIONS-RULE 37
1. General Rule
Under the statewide spacing rule, called "Rule 37," no well can be drilled closer than 467 feet to the boundary of a tract or closer than 1,200 feet to another well. [Tex. Admin. Code tit. 16, '3.37 (1982)] Moreover, only one well can be drilled every 40 acres. This general statewide rule may be varied on a field-by-field basis, or by the grants of individual exceptions to the rule. These individual exceptions may be granted only if necessary to prevent confiscation (drainage) or waste. [Exxon Corp. v. Railroad Commission, 571 S.W.2d 497 (Tex. 1978)]

2. Prevention of Confiscation
a. Right to Drill One Well
The Railroad Commission has long held that each landowner, no matter how small or irregular her tract, has a vested right to drill at least one well on her property, regardless of the spacing regulation, provided that the tract was not created in violation of the so-called voluntary subdivision rule. [See Railroad Commission v. Shell Oil Co., 390 S.W.2d 556 (Tex. 1964)]

b. The Voluntary Subdivision Rule
1) The Problem
Able owns a 40-acre tract which, under the general spacing rule, would be entitled to but one well. If Able were allowed to divide his tract into 10 four-acre tracts (by for instance, granting mineral rights to his children), under the "one well per tract" rule Able could create a right to drill 10 wells, absent some rule preventing the subdivision. Nine of these 10 wells would be unnecessary to recover the oil under the 40 acres.

2) The Rule
The rule that prevents certain small tract subdivisions from receiving a well permit is known as the "voluntary subdivision rule." A small tract is a "voluntary subdivision" and will not receive a Rule 37 exception for confiscation if:
(i) The small tract was subdivided after oil or gas was discovered in the near vicinity.
(ii) The small tract was subdivided by an oil and gas lease (which necessarily contemplates oil and gas development).
(iii) The small tract was subdivided with the intent of circumventing Rule 37.
Example:. Oil is discovered in the Puritan Pride oil field. Able owns a 20-acre tract in the field. After oil is discovered, Able divorces his wife, and pursuant to community property statutes, Able and his ex-wife each receive a 10-acre tract. Because this subdivision took place after the discovery of oil and gas in the field, the two 10-acre tracts are "voluntary subdivisions" and will be treated as if they were a single 20-acre tract for the purposes of applying the "one well per tract" rule. Thus, only one well permit will be granted on the 20-acre tract.
If both Able and his ex-wife apply for this one well, the Commission has the authority to order that the well be located wherever the physical recovery of oil or gas is maximized. When there is no good engineering reason to place the well on one tract versus another, the Commission will grant the Rule 37 exception permit to the tract owner who first leased. Thus, if ex-wife leases her 10-acre tract before Able leases his, ex-wife's lessee will be the "first preference lessee" under the Commission's rules. If his ex-wife's lessee drills and produces, Able and Able's lessee have no right, under the common law, to secure an accounting for their fair share of oil or gas coming from ex-wife's well. The rule of capture applies. Able and his lessee will be drained and they cannot secure a well permit to drill and drain back, nor can Able sue for "equitable pooling" or an accounting. The rank injustice of the above result has been somewhat ameliorated by passage of the Mineral Interest Pooling Act, discussed at IX.B., infra. As will be seen, in fields discovered after March 8, 1961, Able may be able to force his ex-wife to share the well's production through use of the compulsory pooling act.

c. Proof of Confiscation
The applicant for a Rule 37 exception based on confiscation must prove that the exception is necessary in order to allow the applicant to recover his or her fair share of the oil and gas, i.e., that the exception is necessary to protect his or her correlative rights.

d. Waste Exceptions
Rule 37 exceptions can also be granted to prevent waste. Voluntary subdivisions can receive waste exceptions, but not exceptions based on confiscation. To obtain a waste exception, it is generally necessary to show that unusual geological conditions exist such that drilling the exception well will allow recovery of oil or gas that would not be recovered under the usual spacing pattern. In one case, a waste exception was granted to allow the lessee to use an existing (but abandoned) well bore, which saved the lessee almost $1 million in drilling costs, thus preventing the economic waste of those dollars.

e. No Guarantee of Profit
The permit to drill a well does not guarantee the right to drill a profitable well. The "production allowable" that the Commission may assign to the well under the prorationing formulas discussed at E., infra, do not guarantee the ability to drill at a profit.

D. RULE 37 EXCEPTIONS AND SECONDARY RECOVERY OPERATIONS
1. Secondary Recovery Defined
As a field is produced, the natural pressure which pushes oil and gas to the surface declines, and oil and gas production likewise declines. At this point, producers often initiate secondary recovery to increase output. One common secondary recovery technique is to inject water or gas back into the reservoir to raise the reservoir pressure. To be effective, waterflooding and repressuring of a field often require the cooperation of all lessees in the field. The injection of water and gas often significantly affects the movement of oil and gas across lease lines.

2. Lack of a Compulsory Unitization Statute
Texas lacks a compulsory unitization statute which can be used to force all owners in a field to unitize and increase output by cooperative repressuring. (Texas has compulsory
pooling only.) Therefore, secondary recovery is sometimes done without the joinder of all operators or royalty interest owners.

3. Rule 37 Exceptions to Protect Correlative Rights Under Secondary Recovery

The Commission will grant Rule 37 exceptions to protect the correlative rights of operators who are conducting secondary recovery operations.

Example: A and B are adjoining landowners. A is conducting waterflooding operations in secondary recovery. B refuses to join in the waterflooding. Because B's tract has low pressure and A's tract has high pressure, oil is migrating to B's tract. Under the rule of capture, B gains title to this oil which originated on hardworking Ns tract. A requests a Rule 37 spacing exception to place a salt water injection well very close to B's lease line. A requests the exception

well in order to minimize the amount of oil and gas which is pushed from under A's land onto B's land by the injected salt water, and assure A his "fair share" of the oil.

In this case, the Commission will grant the exception well to A upon finding that A's correlative rights need to be protected. [Railroad Commission v. Manziel, 361 S.W. 2d 560 (Tex. 1962)]

The court will not enjoin A's secondary recovery operations on the basis that the salt water pushed from A's tract to B's tract is a trespass, as long as the Commission has authorized the secondary recovery. The court left open the possibility that damages could be recovered by the landowner who is injured by the waterflooding of an adjacent operator and the possibility that nuisance law might apply (in which event the injured landowner would have to show that the waterflooding was unreasonable).

E. PRODUCTION CONTROLS-PRORATIONING


1. Economic Effect

Until the 1970s, statewide production quotas were used primarily to stabilize prices. However, prorationing may also serve the public interest by preventing the physical waste of oil and gas. Fieldwide allowables have been set with an eye to making sure that each field produces its proportionate share of the statewide allowable production.

2. "Fair Share" Requirement

In assigning production allowables, the Commission must set a formula that will allow each landowner to produce her "fair share" of oil and gas in a reservoir. [Texaco, Inc. v. Railroad Commission, 583 S.W.2d 307 (Tex. 1979)] In setting allowables, the Railroad Commission must give each landowner a reasonable opportunity to produce her share of the minerals in place under her land. The right to produce a "fair share" includes the right to produce from each separate reservoir under a tract of land where there are multiple reservoirs. [BenzStoddard v. Aluminum Co. of America, 368 S.W.2d 94 (Tex. 1963)]

3. Pre-1961 Prorating Orders-Bias in Favor of Small Landowners

a. Prorating Based on Surface Acreage Unfavorable to Small Landowners

If production quotas were assigned according to how much surface acreage or acre-feet of productive sand a landowner owned, then the owner of a small tract of land (e.g., a one-acre town lot) might not find it profitable to drill. If drilling a well cost $50,000, but
the well's production quota under the field prorationing formula allowed the well to produce only $8,000 worth of oil over its lifetime, the owner would not find it profitable to drill. In this event, larger landowners next door would be able to drain the small landowner under the rule of capture.

b. To Protect Small Landowners-Prorationing Based on Number of Wells

The Commission desired, in its earlier days, to protect small landowners and thus the Commission did not promulgate prorationing orders based solely on surface acreage or amount of reserves in place (both of which are in short supply on a small tract). Instead, the Commission promulgated prorationing orders based partly on the number of wells drilled on a tract. If the owner of a one-acre tract could get a Rule 37 exception permit and drill one well, he could produce as much as the owner of a 40-acre tract who could secure only one well under the 40-acre spacing rule, whenever the Commission's prorationing formula was based on the number of wells. Of course, much of the oil and gas coming from the well on the one-acre tract would be drained from the 40-acre tract. The large landowner would suffer uncompensated drainage under this regulatory scheme. To soften the harm to large landowners, the Commission usually adopted prorationing formulas that allocated half of the oil production allowable in a field on the basis of the number of wells and half on the basis of surface acreage. (For gas fields, the proportion was 1/3 per well, 2/3 surface acreage.) Still, large landowners suffered substantial drainage to the small tract owners under these prorationing formulas.

4. Normanna Field Case

In 1961, the Texas Supreme Court issued its landmark opinion in the "Nonnanna Field" case. [Atlantic Refining Co. v. Railroad Commission, 346 S.W.2d 801 (Tex. 1961)] This decision was reinforced the next year in the "Port Acre Field" case. [Halbouty v. Railroad Commission, 357 S.W.2d 364 (Tex. 1962)] Together, Nonnanna and Port Acre held that:

a. Small landowners have no right to drill a profitable well; they only have the right to drill (if they secure a Rule 37 exception permit).

b. An allocation formula that caused uncompensated drainage was invalid.

c. The Commission must set well allowables to ensure that each landowner can produce his fair share of total field production-and no more than his fair share.

d. The 1/3, 2/3 gas formula and the 50-50 oil formula demonstrably caused uncompensated drainage and gave small landowners the right to produce more than their fair share, and hence were invalid.

e. These holdings would not be applied retroactively, given the reliance of banks, landowners, and others on existing allocation formulas.

5. Effect of Normanna

In applying the Nonnanna and Port Acre rules, the Commission is not rigidly bound to allocate production solely on the basis of the estimated acre-feet of reserves under a particular property. Rather, the Commission's order must take into account the peculiarities of each field. As long as there is substantial evidence to support the Commission's order in a particular field, the order will be upheld. The burden is on the party challenging the Commission's setting of an allowable to show that the Commission's order will result in uncompensated drainage in violation of the "fair share
only" rationale of Norinanna. [See Pickens v. Railroad Commission, 387 S.W.2d 35 (Tex. 1965)]

F. CLASSIFICATION OF WELLS
By statute, a well that produces less than one barrel of oil per 100,000 cubic feet of gas is classified as a gas well. A well that produces more than one barrel of oil per 100,000 cubic feet of gas is an oil well.

1. What Counts as "Oil"
In litigation over what substances can be counted as oil in measuring the gas-oil ratio, the Texas courts have held that a substance is oil only if it exists in the ground in its natural and unrefined state as a liquid. [Hufo Oils v. Railroad Commission, 717 S.W.2d 405 (Tex. App. 1986)]

Example: In the Panhandle Field, oil and gas rights were severed and leased separately. The major oil companies own the gas rights and independent producers own most of the oil. Over many years, the gas-oil ratio of the Panhandle wells increased and oil wells produced more and more gas. As a result, wells once classified as oil wells began to produce less than one barrel of oil per 100,000 cubic feet of gas and thus were subject to being reclassified as gas wells. To prevent reclassification, the oil producers attached cooling units (called LTX units) to their wells to convert some of the gas into a liquid called natural gasoline or "white oil," which the oil producers counted as oil. The court held that because the "white oil" was manufactured into a liquid above ground but existed as a gas in the reservoir, it could not be counted as oil for well classification purposes.

2. What Constitutes Casinghead Gas
Casinghead gas is gas produced from an oil well. This gas was dissolved in the oil when the oil was under pressure in the reservoir. When oil is produced at the casinghead (i.e., the top of the well), this gas comes out of solution and is called casinghead gas. It is either sold or flared. (This casinghead gas belongs to the oil operator and is included in the oil royalty clause; see V.F.9., supra.) In the Panhandle, deeds sever the oil rights from the gas rights and provide that the oil producer has the right to casinghead gas. Casinghead gas is defined by statute to be "gas indigenous to an oil stratum and produced from that stratum with oil." Thus, where an oil well producer perforates its well casing above the oil stratum in order to collect gas from a higher gas stratum, the producer is converting the gas producers' gas. Such gas is not casinghead gas. [Amarillo Oil Co. v. Energy-Agri Products, Inc., 794 S.W.2d 20 (Tex. 1990)]

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Example:                Well A       Well B       well c       Surface

                        gas stratum   oil stratum
Well A produces oil from the oil stratum and Well C produces gas from the gas stratum. Gas from Well A is casinghead gas because it is indigenous to and produced from the oil stratum. Well B originally produced oil (with some casinghead gas) and was then perforated higher up to produce gas from the gas stratum also. This type of gas does not belong to the oil rights owner, even if Well B's gas-oil ratio is low enough to classify the well as an oil well.
3. Railroad Commission's Jurisdiction

In Amarillo Oil Co. v. Energy-Agri Products, Inc., supra, the gas operator's claim that the oil producer was converting the gas operator's gas was held not to be a collateral attack on the Railroad Commission's classification of the defendant's well as an oil well. The Commission has no jurisdiction to determine private title, contract, or tort issues; only courts can do this. A statutory well classification system (the 100,000:1 ratio) does not necessarily determine ownership of the substances flowing from the well under private contracts. Thus, a statutory "oil well" may be illegally producing gas if it is producing noncasinghead gas, i.e., gas from a gas stratum (sometimes called "dry gas") rather than from an oil stratum.

IX. POOLING AND UNITIZATION
A. OVERVIEW
1. Definitions
"Pooling" is the combination of small tracts into a single unit large enough to qualify for a drilling per well under applicable spacing rules, e.g., the combination of four separately owned 10-acre tracts into a 40-acre drilling unit. "Unitization" is the combination of many separate tracts and many drilling units into a large, fieldwide unit for the purpose of joint development and production, usually for secondary recovery operations. In practice, the words are sometimes used interchangeably.

2. Allocation of Production and Costs
Once tracts are pooled or unitized, production and costs are allocated among the owners of the pooled or unitized unit. Thus, a participant in a pool or unit receives a share of production from tracts other than his own and, in turn, shares production from his tract with others. Lessees who have pooled will share the cost of drilling and producing within the pooled area.

3. Texas Favors Voluntary Pooling and Unitization
Pooling and unitization may be either voluntary (as discussed in V.D.6., supra) or compelled by state order. Many states have strong statutes permitting compulsory pooling or unitization whenever such an order would prevent waste. In Texas, the authority of the Railroad Commission to order pooling is quite limited as discussed below. Texas does not have a compulsory unitization statute.

B. THE MINERAL INTEREST POOLING ACT ("MIPA")
1. Background
MIPA was passed in 1965, and applies to any oil or gas field discovered after March 8, 1961, the date of the Not7nanna case. The Nonnanna case stripped small tract owners of their favorable "per well" prorationing formulas. Therefore, it was often not profitable to drill on small tracts. Without a compulsory pooling act, small tract owners would be drained by larger landowners. Hence the Normanna decision propelled passage of MIPA.

2. Limited Commission Powers
a. Requirements for Compulsory Pooling
The Act authorizes the Commission to establish a unit and pool all interests when the following requirements are satisfied:
1) Separately owned tracts are embraced in a common reservoir for which the Commission has established field rules defining the size and shape of proration units therein. The requirement of a common reservoir prevents the Commission from issuing a compulsory pooling order that pools two or more separate producing horizons underlying the surface;
2) There are two or more separately owned interests within the existing or proposed proration unit;
3) The owners have not agreed to pool their interests;
4) One or more of the owners have drilled or propose to drill a well on the proration unit;
5) Such action by the Commission will avoid the drilling of unnecessary wells, or protect correlative rights, or prevent waste;
6) "Any such owner" has made application to the Commission therefor. "Any such owner" means the owner of any interest in oil and gas in an existing proration unit or the owner of any working interest or unleased mineral interest in a proposed proration unit;
7) The reservoir was discovered subsequent to March 8, 1961 (date of Normanna decision);
8) The acreage sought to be "forced pooled" reasonably appears to lie within the productive limits of the reservoir;
9) The lands sought to be "forced pooled" by a private citizen are those with respect to which the state either has no interest or has consented; and
10) The applicant shows that he has made a fair and reasonable offer to pool voluntarily.

b. Requirement of a Fair and Reasonable Voluntary Offer
The Commission has no jurisdiction to issue a compulsory pooling order unless the applicant has first made a "fair and reasonable" offer to pool voluntarily.

Example: Carson leased 10 acres to Bigg Oil and Bigg drills a producing well on Carson's land. Carson's lease did not authorize pooling. Bigg made an offer to pool Carson's 10 acres into a 160-acre unit based on surface acreage, thus reducing Carson's royalty from a full 1/8 to only 1/8 x 10/160. The other owners in the 160-acre unit all agreed to pooling, on the basis of acreage. The voluntary offer to Carson was held not fair because (i) the offer was made only after the well was drilled, (ii) the other owners in the unit had the prevailing royalty rate of 1/6 and had leases authorizing pooling, and (iii) Bigg misrepresented to Carson that he was required to accept the offer. If Bigg had proposed to make the pooling retroactive to the date that the well was drilled, this would probably also be found to be unfair to Carson. [See Carson v. Railroad Commission, 669 S.W.2d 315 (Tex. 1984)]

Note.- The statute provides that an offer to an owner to share on the same basis as the other owners in an existing prorationing unit is to be considered as fair and reasonable. However, this provision has been limited to situations where a small tract owner wishes to "muscle in" to an existing unit, and does not apply where an attempt is being made to force a small owner into an existing unit. [Carson v. Railroad Commission, supra]
c. Size of Units
The Act limits the maximum size of any unit pooled to 160 acres for an oil well and 640 acres for a gas well, plus 10% tolerance.

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d. Effect of Pooling
Under the Act, production from the unit well acts as production from each separate tract included in the unit.
e. Allocation of Production

The Commission is authorized by the Act to allocate production from the well on the pooled unit on a pro rata surface acreage basis or any other basis that will assure that each tract will receive its fair share; provided, however, a nonconsenting owner shall not receive less than he would receive on a surface-acre allocation.

C Election to Be "Carried"
The compulsory pooling order issued by the Commission cannot require the forcibly pooled mineral interest owner to bear any costs of a dry hole. (This is like co-tenancy law.) If this mineral interest owner refuses to contribute his fair share of "front end" money to the well drilling and the well turns out to be productive, the compulsory pooling act allows the Commission to assess a 100% risk factor against the nondrilling party. The drilling parties who took all the risk must account to the nondrilling party for his fractional share of profits, but they may double the costs owed by the nondrilling party by assessing this risk factor. In other words, a mineral interest owner who is force-pooled may either elect to pay his fair share of costs up front or elect to be "carried" by the drilling parties and pay nothing if the well is dry, and pay up to double his fair share of costs if the well produces. The risk factor will vary with the Commission's assessment of the riskiness of drilling in that particular field, but it cannot be more than 100%. (Note: While the Commission cannot grant more than a 100% risk factor, the "fair and reasonable" voluntary pooling offer that is a necessary condition for Railroad Commission jurisdiction may have to be at a higher level to be fair. If an offer with a 200% risk factor is accepted as fair, voluntary pooling will occur with this 200% factor, No compulsory order will issue.)

3. Appeals from Orders of the Railroad Commission
Appeals from orders of the Railroad Commission are tried in the district court under the substantial evidence rule rather than by a trial de novo.
a. The Commission's Order
The final decision of the Commission must include findings of fact and conclusions of law, separately stated. The order is deemed prima facie valid, and the burden of proof is on the party complaining of the order.
b. Retroactivity
The Commission's pooling orders cannot have a retroactive effect on the allocation of production. Thus, pooling becomes effective only on the date of the Commission's compulsory order. The Commission often enters an interim pooling order that escrows
the applicant's share from the proposed unit, and then (after the lengthy hearing process) issues a final pooling order effective as of the date of the interim order.

c. Venue
Venue of suits to test the validity of all orders of the Commission is vested in the district court of Travis County, except for pooling orders, which are appealable only to the district court of the county in which any part of the property is located. [Tex. Nat. Res. Code Ann. '102.112]

X. ENVIRONMENTAL REGULATION
A. OVERVIEW
The Railroad Commission's regulatory agenda now includes substantial authority over oil and gas pollution and oilfield wastes. For oil and gas operators, pollution control is serious business. Since 1983, the penalty for violating a law or Commission rule pertaining to safety or pollution is $1,000 per day per violation rather than the $1,000 penalty generally applicable to violations of Commission rules. The Commission is particularly active in regulating water pollution from surface discharges and pits, and in enforcing the laws on plugging and abandoning wells to prevent groundwater pollution. Note that the Commission does not have to wait until pollution actually occurs before ordering corrective action. Thus, if the Commission finds that a well was cased with poor quality cement, indicating a potential pollution problem, the Commission may order the well to be plugged.

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B. THE 1991 CLEANUP FUND

1. Purposes and Source of Funding
In 1991, the Texas legislature passed an act designed to prevent pollution from oil and gas production; to create an oilfield cleanup fund; and to impose new fees, bond requirements, and other financial security mechanisms to fund cleanups. The cleanup fund receives its monies from 18 listed sources, such as drilling permit fees, civil penalties, bond proceeds, and two new fees imposed on each barrel of crude petroleum and each MCF of natural gas produced in Texas.

2. Use of Funds
The Railroad Commission can use the fund to control or clean up oil and gas wastes, to plug abandoned wells, and to administer and enforce other pollution prevention measures. To strengthen the Commission's enforcement powers, the Commission cannot accept an application for a permit to drill, deepen, or reenter a well from any applicant who, within the preceding five years, has an outstanding violation of any provision relating to safety or pollution control.

C. PLUGGING WELLS Texas has thousands of abandoned and improperly plugged wells that create pollution hazards.

1. Operator Has Primary Duty to Plug
By statute, the operator of a well has the primary responsibility to plug the well, usually within a year from the time drilling or production operations cease. The "operator" is defined as the person "responsible for the physical operation and control of a well at the time the well is about to be abandoned or ceases operation."
2. Nonoperator Has Duty to Plug If Operator Cannot Be Found
If the operator fails to plug or cannot be found, nonoperators are required to plug. A "nonoperator" is a person who "owns a working interest in a well at the time the well is about to be abandoned or ceases operation and is not the operator." Thus, a nondeveloping co-tenant owning a fractional mineral interest in a tract or a passive investor owning a working interest in a well may potentially be liable for plugging.

3. Right to Reimbursement
If an operator or nonoperator owns only a fractional interest in a well yet pays a larger share of the cost of plugging than this fraction, the operator or nonoperator has a cause of action against the others for their proportionate shares of the cost.

4. Royalty Interest Owners Not Liable Royalty interest owners (of either nonparticipating royalty interests or overriding royalties) and landowners (lessors) are not liable for well plugging.

5. Commission Plugs Wells Where Neither Operator Nor Nonoperator Can Be Found
Many wells were abandoned without proper plugging many years ago and it is impossible to find either the operators or nonoperators who existed at the time the well was "about to be abandoned or ceases operation." In this event, the Railroad Commission can use the cleanup fund described in B., supra, to plug the wells. The Commission has no authority to impose plugging liability on a subsequent operator who takes a new lease on the tract.

D. SURFACE WASTE DISCHARGES AND DISPOSAL
The Railroad Commission regulates surface pits, discharges of oil and gas field wastes into water, and underground injection wells used to dispose of wastes.

1. Regulation of Salt Water Injection
Many wells produce large amounts of salt water in addition to oil, and this brine is usually reinjected into the subsurface strata. All injection wells must be permitted by the Commission. The Commission requires that producing and injection wells be properly cased to protect usable-quality groundwater from pollution.

2. Regulation of Storage and Discharge of Salt Water
With certain exceptions, no operator can store salt water or other fluids in surface pits except when authorized by the Commission. Authority is not granted unless it is conclusively shown that no pollution of ground or surface water or of agricultural land will occur. A permit to discharge wastes will be granted only if the Commission finds that the discharge or disposal will not cause pollution.

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XI. RELINQUISHMENT ACT LAND
A. CIVIL LAW BACKGROUND
Under Mexican and Spanish civil law, a grant of public lands by the sovereign did not transfer mineral rights in the land, which were retained by the state. Texas ranchers who had received state land deeply resented having their surface lands used by the state's mineral lessees. Therefore, the Texas legislature tried to relinquish state ownership of minerals and grant the minerals to the overlying landowners.

B. RELINQUISHMENT ACT
In Cox v. Robison, 150 S.W. 1149 (Tex. 1912), the Texas Supreme Court held that language in the Texas Constitution that purported to release whatever mineral rights the
state might have retained in public lands granted under patent did not operate to release mineral rights on public lands granted after 1876. In 1919, the state passed the Relinquishment Act, which purported to relinquish 15/16 of all mineral rights in former public lands to the surface owner, with the state retaining a 1/16 interest. [See Tex. Nat. Res. Code Ann. '52.171] However, the Texas Supreme Court held that the Act only granted the landowner the right to lease the minerals as agent of the state.

1. Effect
a. Landowner Cannot Convey a Mineral Fee
An "owner" of Relinquishment Act land cannot convey a mineral fee since she owns no such fee, but has only the power to lease and to share equally with the state in the benefits of the lease. Thus, any transfer by the surface owner of a mineral fee or deed is void unless the conveyance can be construed as a lease. An owner of such land can, however, assign any benefits under the lease. [Tex. Nat. Res. Code Ann. '52.172]

b. Duty to Drill Offset Wells
The owner of Relinquishment Act land is under a duty to drill offset wells if oil or gas is being produced within 1,000 feet of the land. [Tex. Nat. Res. Code Ann. '52.173] Failure to do so will cause the owner to forfeit benefits under any existing lease and under any future lease. No lease on Relinquishment Act land is valid until filed with the General Land Office, which will not accept a lease that does not protect the state's interest.

Note: The landowner's duty to lease Relinquishment Act land as the state's agent is a fiduciary duty.

2. Summary of Act's Application
a. The Relinquishment Act applies to any public land sold between 1895 and 1931, most of which is in West Texas. Hypothetically, 42 million acres or so of land are subject to the Act. The private owners of this land do not own the minerals under their land.

b. It applies to oil and gas only.

c. Under the supreme court's interpretation of the Act, a surface owner: (i) has the right only to lease the land as agent for the state and therefore has no power to alienate the mineral interest except by lease, and (ii) may share equally with the state in all benefits of the lease (royalty, rentals, bonus, etc.) provided that the state receives at least a 1/16 royalty and not less than 100 per acre as delay rental. The surface owner's right to receive half of the lease benefits on Relinquishment Act minerals that belong to the state is justified as (i) compensation to the surface owner for acting as the state's agent, and (ii) compensation for any damages to the surface arising from the leasing operation.