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THE FEDERAL EXPLORATORY UNIT AGREEMENT: ITS ADVANTAGES AND DISADVANTAGES INSOFAR AS THE FEE MINERAL OWNER IS CONCERNED

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Unitization is of comparatively recent origin but the recognition of its benefits has been steadily increasing.

In the very early cases the capture of oil was compared to that of wild animals—oil was thought to be a moving, wandering substance and was sometimes compared to flowing rivers. Whenever oil was discovered, the race between the operators was on, with each bent on drilling the most wells in the least time so as to produce the most oil in the least time from his particular tract; regardless of whether there was a market for the oil after it reached the surface.

Oil and gas do not move themselves but are situated within geologic traps from which they can escape only when the trap is drilled—after discovery they move to that part of the reservoir penetrated by the well. The forces causing underground oil movement are dissolved gas drive, gas cap drive, water drive, or gravity. Petroleum Engineers agree that in most cases only 15-25% of oil in place is recovered absent secondary recovery operations but that up to 80% can be recovered by such operations consisting of pressure maintenance, gas injection, cycling or water flooding.

Reservoir energy is necessary for the production of oil. Injection or reinjection of gas or water into a reservoir should be had when needed to bring about efficient and greater recovery.

In many instances wide open production dissipated resrevoir energy and resulted in a large part of the oil in the reservoir remaining unrecoverable in the ground. Here, the operator had no choice. He had to produce or suffer drainage by production on adjoining lands. Yet when he did produce, material waste, not only of oil but also of gas, took place, because of lack of market and rapid and inefficient withdrawal from the reservoir. Oil would be wastefully stored or gas flared.

Gradually awareness of the wastefulness of these early practices became widespread. It was found that after primary recovery operations were completed, up to 85% of the oil was being left in the ground; not subject to further recovery. See: Myers, "The Law of Pooling and Unitization"; Intrestate Oil Compact Commission, "Oil and Gas Production."

In 1924, statements and discussion by Mr. Henry L. Doherty, President of H. L. Doherty and Company, were the pad from which the idea

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of unitization was launched. At that time, his ideas were strenuously opposed by most of the industry who were in favor of unrestricted competition. Numerous Oil Industry discussions and debates followed. A Presidential-appointed Federal Oil Conservation Board was created and conducted public hearings. In its fourth report in 1930 it stated:

"The unit idea in producing oil is bound to win out, because the natural unit is the oil pool. Man may draw property lines on the surface, making a checkerboard for title searchers and lease lawyers to play on, but nature has fixed a boundary line around the underground deposit for geologists to discover and engineers to use in the development of the hidden resource. The unit-operation plan is a 'back-to-nature' movement. Codes of laws and judicial decisions relating to oil deposits have accorded to the surface checkerboard a sanctity quite beyond its deserts, while the facts of nature as now known have received little attention and have commanded less respect.

"Fences, walls, and other land lines serve effectively as property boundaries when the property is fixed in character and position, whether it is valuable as tillable soil or as a structural foundation. These same lines may be extended downward as vertical planes and serve no less acceptably to define property rights in the ores we mine. The essential part of the property-line idea is our faith in the continuing relation of the line to the fixed property. It serves best of all when by triangulation we tie our private land corners to the geodetic constants; then the hand of man cannot erase beyond recovery the boundaries of our estate. Quite different, however, is the relation of any land lines to property rights in the winds that blow and the waters that flow across these man-marked boundaries. The mobile and fugitive nature of air and water make our rights to their possession and use related to the rights of our neighbors, so that some coordination is required, lest the use by one interfere with that by others.

"Self-regulation in the handling of an oil pool means both efficiency in development and operation and the determination of equities among the owners, and this can best be accomplished by unit operation. By this plan only can each and every owner secure full economic benefits. By this plan only can the public be assured of the largest possible supply of oil and gas from a particular field, won from the ground at lowest cost, and over a period measured by market demand rather than fixed by individualistic greed."

"Justice to all owners and benefit to the public can both result from this observance of natural and economic law in recognizing the oil pool as the natural unit." Report IV of the Federal Oil Conservation Board (May, 1930) Anti-trust Laws, et al v. Unit Operation of Oil or Gas Pools; Robert E. Hardwicke. See same reference for history re unit operations.

In 1931 Congress enacted the first permanent unitization statute, to-wit:

"For the purpose of more properly conserving the natural resources of any oil or gas pool, field, or like area, any part thereof (whether or not any part of said oil or gas pool, field, or like area, is then subject to any cooperative or unit plan of development or operation), lessees thereof and their representatives may unite with each other, or jointly or separately with others, in collectively adopting or operating under a cooperative or unit plan of development or operation of such pool, field, or like area, or any part thereof, whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest. The Secretary is thereunto authorized, in his discretion, with the consent of the holders of leases involved, to establish, alter, change, or revoke drilling, producing, rental, minimum royalty, and royalty requirements of such leases and to make such regulations with reference to such leases, with like consent on the part of the lessees, in connection with the institution and operation of any such cooperative or unit plan as he may deem necessary or proper to secure the proper protection of the public interest." 30 U.S.C.A. Sec. 226e.

30 C.F.R. 226 governs procedures relative to Unit Agreements. All parties in the area must be invited to join—geologic and other pertinent information may be furnished to obtain preliminary approval. "A unit or cooperative agreement will be approved by the Secretary, or his duly authorized representative, upon a determination that such agreement is necessary or advisable in the public interest and is for the purpose of more properly conserving natural resources."

At the last Rocky Mountain Mineral Law Institute, Elmer F. Bennett, Under Secretary of the Interior, said: "Since the first of the Federal Unitization Acts in 1930 and 1931, the Federal Government has pioneered and fostered untization of oil and gas fields in the Public Land States. During that period through June 30, 1959, 977 unit or cooperative plans, embracing approximately 17 million acres (Federal, privately owned, and State land), have been approved by the Department of the Interior, of which 540 have been terminated for non-productivity or other reasons, leaving 437 in effect, embracing over 7 million acres. As of January 1, 1958, the Federal acreage to which oil production is allocated under such plans accounts for some 73 million barrels a year, or approximately 54 per cent of all production from public domain and acquired lands of the United States."

Unitization may be defined as "the practice of unifying or 'pooling' of minerals in a particular oil or gas pool or field upon an agreed basis, including both working interests and royalty interests, for the purpose of developing and operating such lands as a single unit without regard to divided ownership in particular tracts or parcels of land." Hines, "Unitization of Federal Lands," pp. 11 and 12.

Unitization is important in conducting both Primary and Secondary Operations.

"An oil and gas reservoir is a natural unit in which the common supply of oil and gas accumulated during geologic periods without respect to surface property lines and fences. The reservoir is like an open range, but, unlike cattle, the oil and gas can be neither branded nor confined to their original boundaries by means of fences.

"In the early days of the petroleum industry owners knew only what could be observed on the surface of the earth. They could only speculate on conditions in the subsurface reservoir as oil and gas were withdrawn. The realization that offset wells drained oil from adjacent properties stimulated the drilling of additional wells. They established a drilling pattern whereby each operator was forced to match the conduct of the offset operator in order to protect his own rights. The pattern required that wells be offset directly and that leases be drilled with approximately equal well densities. The apparent protection against drainage actually resulted in waste of gas, of reservoir energy, and of materials, as well as a reduction in total recoverable oil.

"Expulsive forces, whether primary or secondary, recognize no property lines—no divided ownership. They must be controlled throughout the entire reservoir for the greatest recovery. To secure the most oil for each individual, operating practices such as proper producing rates, curtailed gas production, and advantageous location of producing and injection wells must be employed. Such practices can best be achieved through a plan of unitization that gives consideration to both operating and royalty interests in the necessary readjustment of production between individual leases.

"Unit operations, therefore, are designed for the further development and operation of the properties overlying a common source of oil or gas supply as if they were one property under a single lease. Under this plan, provision is made for an equitable distribution of the production to each owner." Oil and Gas Production, Interstate Oil Compact Commission, pp. 65 and 66.

Unitization makes possible maximum ultimate recovery of oil and gas and affords protection from drainage from one tract to another. Its fundamental purpose is to increase ultimate recovery from the entire reservoir. It enables the owners to carry on artificial pressure maintenance in the reservoir during both primary and secondary recovery through injection of gas or water, or cycling for condensate recovery, or control of a gas cap to maintain pressure; each aimed at increasing ultimate recovery. The incentive of unitization is to obtain a greater return in which the landowner directly and proportionately shares. Oil and gas are natural resources which cannot be replaced. It is important they be recovered to the greatest possible extent.

Unitization should be entered into prior to discovery. At that time an equitable basis for participation may be agreed upon; parties are agreeable to a unit which gives equal treatment to all in an unknown and allocation of unit production is simple. It comes too late for maximum recovery when a field is fully developed—wells cannot be undrilled. It is the fairest and most equitable way of sharing the oil in a common reservoir; each fee owner is entitled only to his ratable share therein. Wasteful and inefficient wells may be promptly shut-in and the unit production obtained from the efficient wells. Frequently gas in a non-unitized field will be flared even though such gas may be needed to produce the oil or may be needed later for secondary recovery operations. Unitization materially limits such a practice. Wells will be drilled at locations where they will do the most good.

It took more than 10 years, a lawsuit ending in the Colorado Supreme Court and countless conferences and conservation committee hearings before the Rangely Field could be unitized, even though the need for unitization was at all times recognized by all interested parties.

Obviously the royalty owner benefits in direct proportion to the amount of oil and gas produced.

In a cycling operation the wet gas is produced, its condensate removed and the resulting dry gas compressed and returned to the producing formation in order to maintain reservoir pressure and to prevent condensation. The wet gas in the formation is moved toward the producing wells by the injected dry gas. The most successful cycling requires that production and injection wells be located in the most advantageous positions in regard to the reservoir; an efficient cycling operation requires that the entire reservoir be operated as a unit. Cycling cannot be carried on efficiently in part of a reservoir if gas is being competitively withdrawn in another part without cycling. See "Petroleum Conservation" published by American Institute of Mining and Metallurgical Engineers.

ADVANTAGES ACCRUING TO A FEE MINERAL OWNER FROM COMMITMENT OF HIS INTEREST TO A FEDERAL EXPLORATORY UNIT AGREEMENT

1. A Federal Unit Agreement is designed to promote drilling and development in an area of geologic interest. The Unit is based upon preliminary geological or geophysical work—there must be a reasonable possibility of production. The United States Geological Survey must be convinced that a bona fide test will be made in the unit area. By committing his mineral interest to such a program the lessor is apt to receive income from his lands at a much earlier time than would occur otherwise in a wildcat area. A unit test is required to be commenced within 6 months from the effective date of the unit plus continuous drilling at 6-month intervals until discovery in paying quantities or it is proved that the land is incapable of production. Failure to comply will mean termination of the unit.

2. Within 6 months after completion of a commercial well, Unit Operator shall submit for approval of the Director an acceptable plan of development and operation which on approval constitutes the further drilling and operating obligations. From time to time additional plans must be submitted. Rentals on fee leases continue to be payable until drilling is commenced on land covered by the fee lease or some part of the land covered thereby is placed in a participating area. The non-unitized portion of a lease is segregated so that the lease terms are not affected as to such portion by unitization.

3. The fee owner will know that a test well will soon be drilled to the depth specified in the unit. His chances of sharing in royalties within a participating area established under the unit agreement will be very much greater than in the case of an individual lease operation.

4. The United States is directly concerned in and supervises the operation of the Unit. A large proportion of every Federal Unit is composed of Federal acreage with unitized production allocated thereto being paid to Federal Government Agencies. The fee owner obtains protection of his interests and assurance that the unit area will be reasonably explored and developed within a reasonable time.

5. The fee owner will benefit from the greater recovery of oil and gas due to efficient engineering and the benefits of early conservation practices resulting from unitization. His interest will be more valuable, either for purposes of sale or income to be derived, under unitization than under conventional or competitive operations which will not assure maximum economic recovery.

6. Upon initiation of secondary recovery operations involving injection of fluids after development there are no disturbances in current income. No negotiations are necessary to establish an allocation formula inasmuch as all production is allocated on the same basis from the time of discovery and, except for participation area changes, remains unchanged throughout the life of the unit regardless of the type of operations employed. In competitive operations the formation of a unit for secondary recovery requires changing from an actual production basis to an allocated one which usually results in a change of the relative current incomes among the respective tracts.

7. The lessor is protected from having his lands indefinitely committed to a Federal Unit without allocation of production to such lands or drilling thereon. This is because of the automatic contraction provisions of the Federal form of unit. Lands not included in a participating area within 5 years after the effective date of the first initial participating area are automatically eliminated from the unit unless at the end of said 5-year period diligent drilling operations are in progress on lands not entitled to participation, in which event said lands remain unitized so

long as drilling continues with not more than 90 days between wells. All 40-acre legal subdivisions not included in a participating area within 10 years from the effective date of the first such area are, in any event, automatically eliminated from the unit.

8. Savings to an operator enable him to keep his operations profitable so as to keep operating the numerous wells of very small productive capacity—such savings also enable the operator to institute repressuring, cycling, and secondary recovery operations.

The income of the fee owner is directly dependent on the amount of oil and gas produced and such income is prolonged by operations which increase recovery. Unit operations usually maintain the income of the royalty owner at a higher level for a longer time and protect him from risks associated with individual operation. New secondary units will usually increase his income. Generally, what is good for the lessee is good for the lessor or royalty owner. An operator cannot afford to continue producing when he cannot make a reasonable profit and any operations which is more profitable than another permits depletion to be carried to a more advanced stage.

DISADVANTAGES ACCRUING TO A FEE MINERAL OWNER FROM COMMITMENT OF HIS INTERESTS TO A FEDERAL EXPLORATORY UNIT AGREEMENT

1. Lease terms are made to conform to unit provisions as to expiration, exploration, drilling, development and operation.

2. The right to operate a tract independently is surrendered. However, the owner of a tract, thought it is unitized, may drill on his tract if it is not in a participating area.

3. Sale or conveyance of the fee interest is subject to the Unit.

4. Acreage sharing of production may be a detriment to a tract. A tract may be situated in the best possible location in regard to the reservoir. Allocation of unit production is on an acreage basis but a lessor cannot refuse to enter into a unit and expect to benefit therefrom. (Dobson v. Arkansas Oil & Gas Comm., 235 S.W. 2d 33).

Apparently there has been no litigation directly affecting operations under the present type of Federal Unit Agreement. This, I think, is due to the fact that the Department of the Interior directed the terms of the unit agreement and closely supervises unit operaions through the Bureau of Land Management and the United States Geological Survey.

The following cases are included because of the interesting pertinent comment by the courts.

Tidewater Associated Oil Co. et al v. Stott et al
Circuit Court of Appeals, Fifth Circuit
December 30, 1946
159 F.2d 174
67 S. Ct. 1306 (Cert. Denied)

Suit by oil and gas lessors for damages alleged to have resulted from lessees recycling operations on neighboring lands. Tidewater held leases, including 88 acres of Plaintiffs' land, on 2215 acres underlaid with wet gas in a common reservoir of about 7355 acres. Two other operators in the field commenced recycling operations and several months later Tidewater also commenced such operations. In order to recycle it is necessary to unitize large tracts—Plaintiffs refused to unitize. Tidewater conducted recycling operations on adjoining leases held by it—it extracted condensate and sold the residue gas so that the production of condensate was limited to the market for residue gas. Wet gas was withdrawn and processed and the dry gas reinjected in the reservoir—gradually the dry gas spread as the wet gas was withdrawn. Plaintiffs' suit was based on the fact that wet gas under their lands has been to some extent replaced by dry gas.

The court said: "It is conceded that a reasonable and prudent operator would not have drilled an additional well upon Plaintiffs' lands; that the lessees were producing all products which could be produced absent recycling and that recycling was not practicable in the absence of unitization, which the lessors refused." The court found that unitization was offered Plaintiffs in good faith "in the same manner and on the same basis as other landowners and royalty owners in the field."

"As the plan offered by the appellants to the appellees, for unitization of their tracts and participation in the recycling operations, was reasonable and fair in all respects, the appellants amply fulfilled any duty of fair dealing which may have been imposed upon them by the lessor-lessee relationship. The lease did not authorize unitization, and appellees were entitled to refuse, as they did, to unitize and to participate in the recycling, but the appellants were not thereby precluded from operating, and were well within their rights in proceeding to operate their other leases to the best interest of the lessees and such lessors.

"That appellants by their recycling operations acted for the mutual protection of themselves and of their lessors, including the appellees, is clearly shown by the record. Prior to the commencement of the recycling operations by appellants, two companies, one owning acreage within the producing area, were operating recycling plants. The evidence is uncontradicted that in about six or seven years, or about 1946, the withdrawal of wet gas and the injection of residue dry gas by the two companies would result in the replacement of wet gas with dry gas under a portion

of appellants' acreage, including a portion of appellees' tracts of land, and that in about ten years, or about 1949, the recycling operations of the two companies would withdraw all of the wet gas from the entire reservoir and replace it with injected residue dry gas. Appellants and appellees, therefore, were alike threatened with loss of a common property right with respect to which no recovery in damages could be had. In such circumstances mutual co-operation to protect mutual interests was necessary and as binding upon the appellees as upon the appellants.

"In short, the appellees may not refuse to co-operate with their lessees for their mutual protection in the adoption of the practicable customary method or plan universal in the Long Lake Field offered them by appellants and, at the same time assert and demand damages. The contention of the appellees in such situation is both untenable and unique. Any damage which they suffer is damnum absque injuria and in nowise are such damages charegable to appellants."

Phillips Petroleum Company v. Peterson
United States Court of Appeals, Tenth Circuit
December 21, 1954
218 F.2d 926
Cert. Denied 75 S. Ct. 871

This case involved the construction of a lease clause authorizing fieldwide unitization.

"Provisions in oil and gas leases for unitization have become a practical necessity in the oil and gas industry, because of governmental rules and regulations imposing strict requirements for the proper spacing of wells and the granting of production allowables on the basis of formulae predicted in whole or in part on the quantity of acreage from which the oil and gas can be efficiently recovered by one well completed in the reservoir involved. Permeability, porosity, and other information relating to the producing zone can be scientifically analyzed and a reasonably accurate determination of the area from which the oil can be efficiently recovered by a well in that zone for the purpose of fixing the appropriate size of the pooled units for developing such zone. See Hoffman, 'Voluntary Pooling and Unitization,' pp. 87, 88. Moreover, limiting the number of wells to be drilled to those that will efficiently recover the oil and the elimination of the drilling of unnecessary wells will prevent underground waste and the loss of the oil which would result if unnecessary wells were drilled."

The court traces the authority for Federal Units. "A prerequisite to determination that a particular area is suitable for unitization is the submission of acceptable geological data, including a structure, and only lands reasonably believed to be located on the structure will be included in the unit area. Inclusion of more than one structure in a single unit is not permitted.

"It should be remembered that the Act of August 21, 1935, expressly provides that the plan shall adequately protect the rights of all parties in interest. That standard has been adhered to.

"Thus, it will be seen that unitization is a conservation measure which benefits both lessor and lessee and tends to prevent waste of a natural resource."

* * *

"A lessee is bound by implied covenants in the lease to diligently explore and develop the lease, and to do so under a fair unitization plan, if unitization is effected; to market the production if the oil and gas is found in paying quantities; to do that which an operator of ordinary prudence, having due regard for the interests of both the lessor and lessee, would do; and, in the case of unitization, to act fairly and in good faith, having due regard for the lessors' interests, and to provide for a fair apportionment of the oil produced. The lessee clearly may not act arbitrarily or capriciously.

"Largely, if not altogether, the interests of Phillips and its lessors in entering into the plan of unitization and a contract to effectuate such a plan were mutual. What would serve the best interests of Phillips would likewise serve the best interests of its lessors. Both were interested in a plan of development and operation that would recover the most oil from the lands covered by their leases and in obtaining an allocation to such lands of a fair and just proportion of the oil produced from the reservoir. It is true that limiting the wells to be drilled to a number that would secure the most recoverable oil from the reservoir and prevent the loss of recoverable oil through underground waste could reduce Phillips' development and operational costs. But so to do would be beneficial, not deterimental, to the interests of Phillips' lessors. They, too, are equally interested with Phillips in preventing underground waste and securing the production of all the recoverable oil from the reservoir. It may, therefore, be doubted that in reality Phillips' interests were anywise adverse to those of its lessors."

Beck v. Norbeck Co. et al
Supreme Court of Montana
October 3, 1944
151 P.2d 1014

This case simply held that execution of a Federal Unit Agreement by a landowner amounted to a waiver by the Plaintiff of all defaults then existing and known under a prior oil and gas lease made subject thereto and a recognition that the lease which she sought to cancel was valid; that the unit agreement served to modify the gas lease by eliminating lessee's obligation to drill wells on that particular lease, wells on the unit being substituted therefor; and that though the lease would have terminated under its own terms, it remained in effect by virute of unit production.

Western Gulf Oil Co. v. Superior Oil Co.
District Court of Appeal, Fourth District, California
June 8, 1949; Hearing Denied August 4, 1949
206 P.2d 944

The Paloma Oil Field was discovered about 6 years before the action was filed—it was a condensate field covering approximately 20 miles. Plaintiffs were unit operators and Defendants non-unit operators; both owning interests overlying a common reservoir.

The complaint alleged: that the reservoir contained large quantities of free gas under original reservoir pressures which, at lower pressures, would condense into liquids, only a very small portion of which could be recovered, thus making it necessary to maintain reservoir pessure; that production by the non-unitized defendants would cause condensation; that a part of the reservoir contained black oil which holds gas in solution which gas serves to propel the oil to the well bore; that if pressure be not maintained the gas comes out of solution and a large quantity of the oil becomes unrecoverable; that Plaintiffs have put in costly cycling plants to maintain pressures but Defendants have not and are producing unrestricted amounts and selling off the gas produced to the detriment of the reservoir resulting in waste to a very great degree; that Plaintiffs' cycling operations are forcing oil from their lands to that of Defendants; that if the reservoir were properly operated as a unit 61 million more barrels would be produced for 166 more million dollars. Plaintiffs asked for an injunction and, in effect, for a decree of compulsory unitization for the court.

Demurrers of the Defendants sustained by the trial court were affirmed. The court said "It may be that plaintiffs have presented a persuasive argument in favor of legislation looking toward some form of compulsory unit operation of a field such as the complaint describes, but no matter how good the argument for legislation may be, a court is not the body to whom such an argument should be addressed."