Mineral Rights for Michigan Landowners
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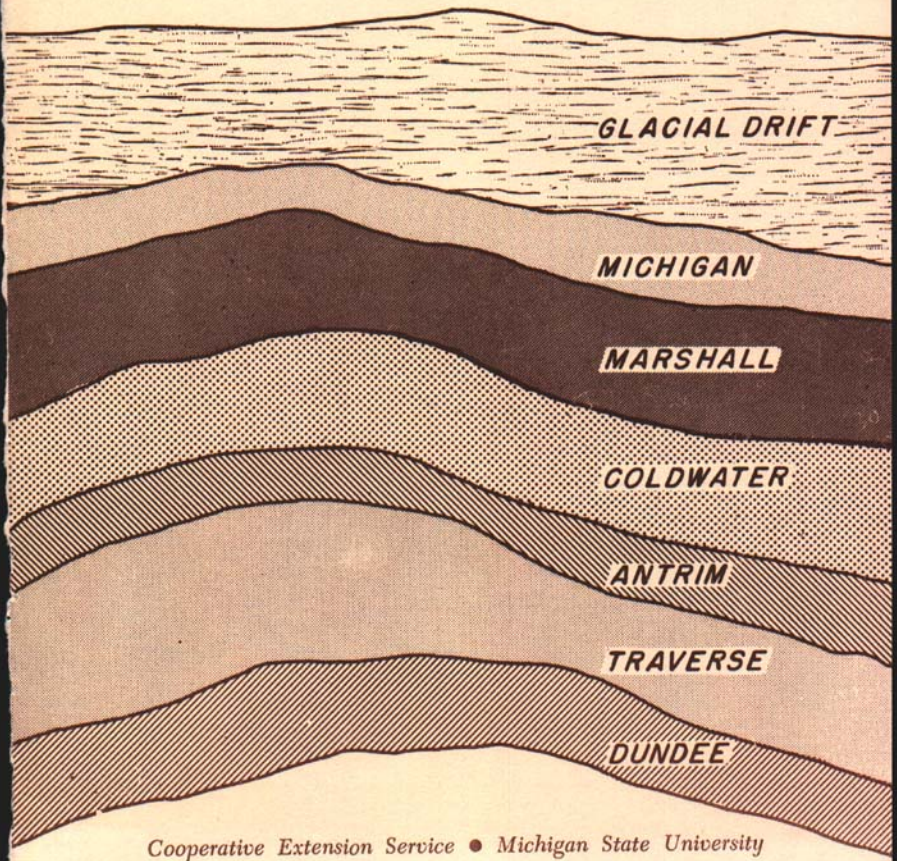
MINERAL RIGHTS
For Michigan Landowners

oil and gas, sand and gravel, peat and muck, other deposits



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Mineral Rights for Michigan Landowners

by C. R. Humphrys[1]

MORE EXPLORATION for oil and gas is now centered in Michigan than in any other state. Several good strikes have attracted the larger companies. Numerous independent operators are also active to rank Michigan as first in new oil and gas explorations at the present time.

Over 200 proven well sites in Calhoun, Hillsdale and Jackson counties can be drilled as quickly as drilling operators can act. These new fields will double the state's oil production.

The entire southern part of the state is believed to be one of the largest potential oil areas in the United States. It has not yet been sufficiently explored to determine the presence of oil and gas. Other metallic and non-metallic minerals also contribute much to Michigan's basic economy.

Unless a valuable mineral is discovered near their land, most people have little occasion to investigate mineral rights. However, the exploratory activity has caused Michigan landowners to become interested in questions of mineral rights and leasing.

Potential income from minerals varies with the status of exploratory work and final evaluation of the extent and quality of the mineral. A good strike will increase competition for leasing and a dry hole may kill all leasing interest.

The landowner is usually contacted by an operator, or a lease man acting as the latter's representative. Sometimes the owner himself takes the initiative in studying the potential value of his mineral rights.

This publication presents a brief view of mineral rights as they may affect a landowner. For a more detailed treatment, including a glossary of production and legal terms, the interested reader should refer to Michigan Resource Bulletin No. 1, Department of Resource Development, Michigan State University (available through county extension offices).

The present folder also in no way precludes the need for the specialized services of an attorney or consulting geologist. Before making a formal oral or written agreement affecting his property rights, the wise owner should always seek the advice of an attorney who is informed on mineral rights.

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WHAT ARE MINERAL RIGHTS?

Mineral rights cover all rights, title and interest in mineral materials found *below the plowsoil of land.* The owner of these rights may enter upon the surface of the land, explore for, produce and manage mineral production in any manner that is usual, necessary or convenient.

All minerals are the exclusive property of the owner of the mineral rights. He may develop and produce them himself, sell them, or lease certain rights to other parties.

Michigan minerals may be:

Organic (muck, peat, coal, oil and gas)

Metallic (gold, silver, iron, copper, etc.) or

Non-metallic (sand and gravel, building stone, dolomite, brick clay, marl, salt, brine, water and ice).

Development and extraction of some minerals requires the complete destruction of surface values (sand and gravel). Other minerals can be produced with a minimum of surface damage (oil and gas).

Where surface values are materially damaged, the mineral operator often buys *fee title* to the land, i.e., free and clear of all encumbrances. Consequently he becomes owner of the land as well as the mineral rights. Some mineral industries (iron, copper and limestone) buy large tracts of land having potential mineral value prior to development in order to maintain a long term reserve. Landowners can, by special arrangement, continue their usual surface use until actual production is started.

Minerals can be sold or leased on an area basis or by specific geologic strata. The mineral owner may, for example, sell or lease a shallow geologic formation to one operator and a deeper formation to another. He may lease or sell the sand and gravel rights to a highway contractor. He may lease or sell the oil and gas rights by individual strata to different oil and gas operators. Note Diagram 1.

OIL AND GAS

LEASING

When an individual operator feels that oil and gas may be present in an area, he tries to secure leases for a sizable drilling block. Most operators require a large acreage of land under lease before drilling, for drilling expense is high; and if oil is discovered, the operator wants a large area to develop.

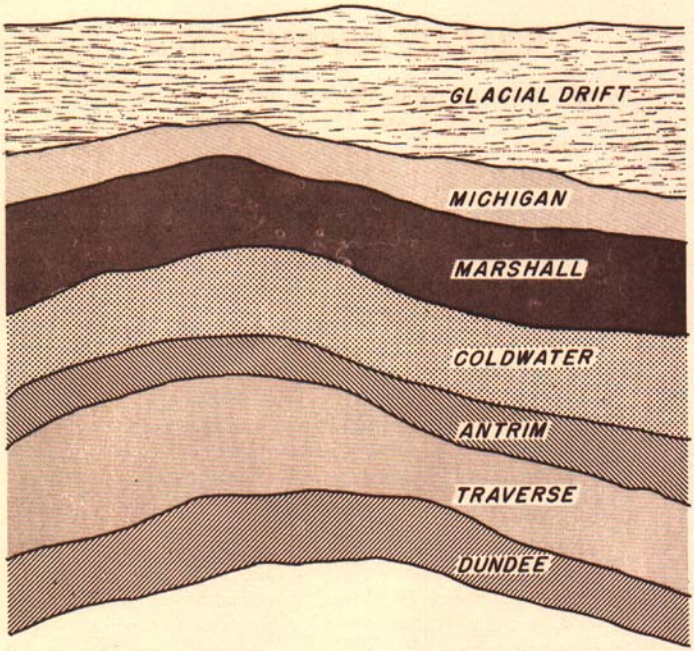


Diagram No. 1—This drawing is a schematic geological cross section showing the manner in which various sedementary rock formations were deposited throughout most of Michigan. Names are shown for each of the formations. If an oil or gas lease covers all formations under a tract of land, the operator may explore for, drill, and produce oil and gas from any formation. However, the real estate owner may desire to lease each formation separately. He may do this by limiting the exploration, drilling and production to a single formation (Marshall, for example) or to a group of formations (Marshall, Coldwater, and Antrim).

The industry has developed special lease forms to secure oil and gas rights from landowners. They all include the right to enter upon the land in order to develop the mineral. The landowner's share of the oil or gas has been standardized at 12½ percent (⅛) and the operator acquires 87½ percent (⅞).

The landowner may receive his income in one of the following forms:

(1) in the form of a cash bonus—i.e., a straight cash consideration for signing the lease

(2) an advance annual rental (lessees usually pay one year's rental in advance, with many operators including renewal clauses)

(3) by a drilling site payment from the operator for the privilege of setting up a drilling rig and a road right of way.

The owner may also sell his royalty interest outright or split it into parts for sale to speculators. (When interest is high in a new area, there are many speculators looking for an opportunity to enter into the play.) He may also lease (1) pipeline rights of way, (2) tank storage sites, or (3) gas storage rights.

A few oil companies will provide information on the expected royalty income from producing wells in case the landowner wishes to budget his income over a period of years. For detailed data on types of leases, the reader should again consult Michigan Resource Bulletin No. 1.

The "hotter" the play (the oil exploration activity), the more intense the leasing interest. When a wildcat well has been brought in, oil operators overrun the area with land men experienced in securing leases. The landowner should carefully consider the situation and obtain as much information as possible before signing.

However, if he waits too long, interest in new explorations may die down and he may find that he has lost his opportunity to capitalize upon high bonus payments.

At the height of activity, with the first well brought in, interest in leasing rises rapidly, with high bonus considerations paid. The next well may quickly dampen the competitive spirit. There are no hard and fast rules for *"When should I lease my property?"* Many farmers have realized high returns from the mere act of leasing their properties even when no oil or gas was discovered. The only general answer is to take the best offer made by a reliable operator. It is wise to consult with an attorney from the first on the reliability of the offer or when in doubt on a legal matter.

Remember that a lease is a legal instrument, duly signed and witnessed, and binding on the present landowner and all subsequent heirs, beneficiaries or grantees for the full period of its term. Many leases contain a renewal clause which permits the lesssee to keep the lease alive and effective during its term by the continued payment of annual delay rental.

General rules on leasing are:

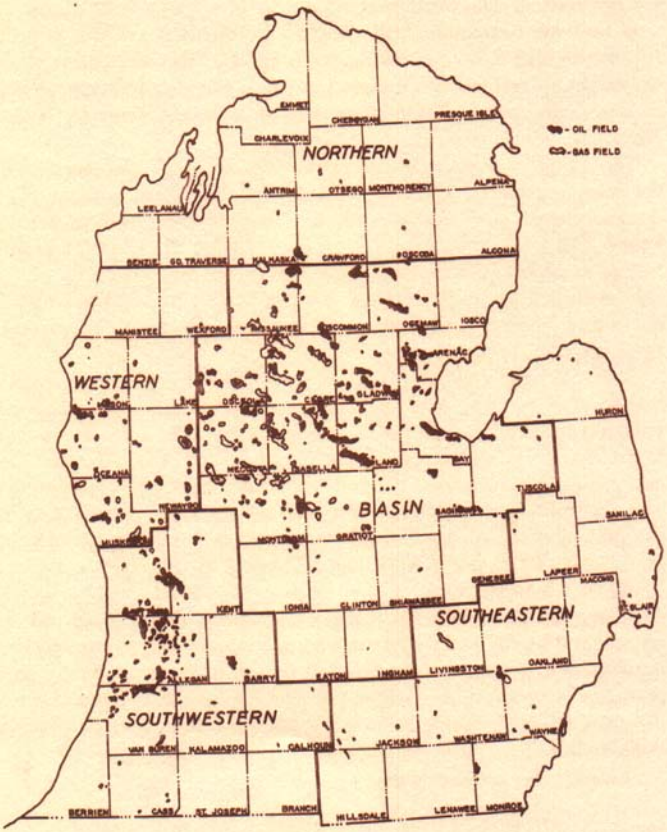
(1) Take time to study the situation.

(2) Deal with a reliable operator.

(3) Consult a competent oil geologist or engineer.

(4) See an attorney before signing a lease.

OIL AND GAS FIELDS
SOUTHERN PENINSULA OF MICHIGAN
BY DISTRICTS



Oil and gas fields in the southern Peninsula of Michigan. From Summary of Operations, Oils and Gas Fields, Geological Survey Division, Michigan Department of Conservation.

EXPLORATION

Large companies allocate considerable money for finding the most likely test location before drilling a deep test. However, wildcat drillers often take huge risks of ending with dry holes by drilling whenever and wherever capital is available.

Methods of exploration may include the following:

Core testing. The drilling of a number of shallow wells down to a key marker formation in new areas.

Seismograph (or shock wave) survey. In this method dynamite charges spaced ⅛ to ½ mile apart are detonated, with the shock wave pattern through the geologic formations recorded on instruments spaced over the area.

Aerial mapping by photography. This method is frequently used to investigate the geologic character of a proposed wildcat area.

Gravimeter survey. Exploration may also be made by means of a gravimeter, a sensitive instrument that can measure the gravitational pull of the earth. This instrument is usually carried in a specially equipped light truck.

All of these techniques have been developed to find the best possible location to drill a hole or sink a shaft to the potential producing formation. The only sure way to test for presence or absence of the desired mineral in a specific area, however, is a hole or shaft. The illustration (Diagram No. 2) shows a sample pay formation for oil.

DRILLING

Land that appears to have oil or gas under it as evidenced by the completion of producing wells on adjacent or nearby land is called *proven land.* A well that is drilled in an area outside of known oil or gas fields is called a *wildcat,* and of all exploratory methods, has provided the most valuable information concerning the discovery of new oil fields. Sometimes the wildcat site has been selected by elaborate exploratory work, other times it is located on land where money is available for a test hole or where a landowner hopes to find oil.

A *deep test* may be made. This is a well drilled down to a potentially productive horizon. It takes an expensive oil rig and highly specialized workers for the drilling, with the cost proportional to the depth and formation being tested.

Location and spacing of wells are regulated by statutory law. In Michigan, the minimum drilling unit for oil wells is a ten-acre tract conforming to one of the quarter-quarters in each governmental surveyed section of land, allowance being made for differences in the shape and size of the sections and non-governmental surveyed plats.

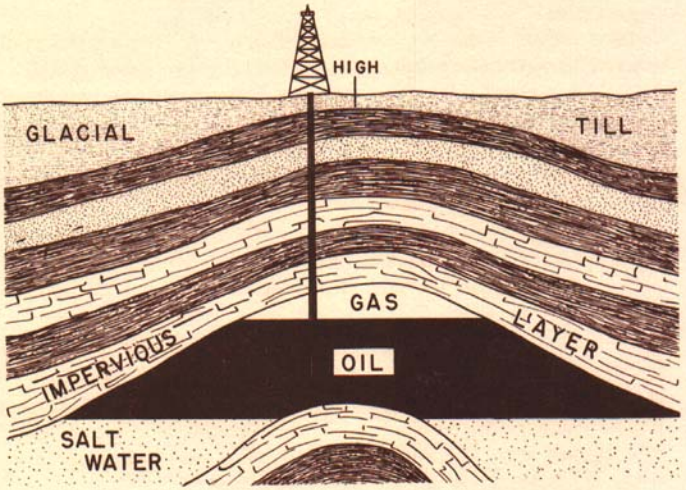


Diagram 2.—Schematic cross section showing a gas and oil deposit.

(Information on regulations, on statutory authority of the Michigan Supervisor of Wells, and on drilling terms is contained in the bulletin referred to.)

PRODUCTION

Petroleum as it is obtained from an oil formation is known as crude petroleum.

When a well begins producing, production is usually high and referred to as the flush production period. After a week or so production may drop appreciably and then level off. Potential investors should interpret new well production figures warily because some wells have been known to drop so low after a week or so that they were soon abandoned.

After a well is brought in it may be *prorated* by the Oil and Gas Section of the Michigan Conservation Department. This limits the production of a well to a specified fraction of its potential capacity. Prorationing is a conservation measure to protect all parties owning mineral rights and also to conserve pressure so that the most oil may be recovered. If one well is permitted to produce at its peak capacity, oil and gas may be pulled from underneath other drilling units.

The gas ends of petroleum are frequently liquified and marketed as bottled gas. The surface storage tanks are usually cylindrical in shape;

however, some underground storage sites have been developed by flushing out cavities in salt formations.

Sometimes there is legal pooling (unitization) of all interests in an entire oil or gas field. All parties having an interest in the field agree to permit one operator to manage the entire field. This often permits more oil to be produced by fewer wells. Owners should seek advice of an attorney to interpret pooling agreement clauses found in lease forms.

The final abandonment of a well is regulated by specific legislation and is carefully inspected by a representative of the Michigan Department of Conservation. An abandoned or noncommercial well must be sealed in accordance with requirements prescribed by the Department, and the top of the casing capped with cement or a welded steel plate. Considerable work and expense is sometimes required to properly abandon a deep test or oil well.

SAND AND GRAVEL

In parts of Michigan, commercial sand and gravel is scarce and brings a good price. Contractors frequently desire a contract for a stipulated quantity of sand or gravel at a quoted price. The landowner should set a specified limit for the operation time covered by the lease. At times, the contractors also try to purchase the entire tract of land involved or enter into a long-term lease agreement for the required materials.

An owner should investigate the following points prior to entering any transactions on sand and gravel rights:

1. *Compensation for damage to the agricultural value of land.* Give attention not only to areas taken out of agricultural production but also to possible effects of the removal of sand and gravel on farm drainage and on the height of the water table under the remaining farm land and under neighboring properties.
2. *Damage to commercial timber.*
3. *Equitable price for sand or gravel.* The price varies widely and is dependent upon trucking distance, quality of material and development costs. Sand and gravel should be sold by the yard; not by land area or truck load.
4. *Location of roads, equipment required, and stockpiles.* Some operators will move in screening machines, washers and hammer mills. If washing is involved, the proper disposal of waste water and sediments should be determined.
5. *Period of time allowed for the operation.* Time for working, for removal of stockpiles and cleanup should be stated in writing.

6. *Procedure on cleanup.* Most landowners require the operator to clean up the location after operations cease. This covers the removal of trash, downed trees and old machinery. Some landowners also require the operator to level the land, reforest the land or even shape up the banks of the pit if a pond is left.
7. *Liability or property damage.* A clause should be incorporated into the written agreement setting forth the liability for property damage that might occur.
8. *Posting of bond.* It is good business for mineral owners to require the operator to post bond to guarantee all the terms of the agreement.

EXPLORATION

The exploration of potential sand and gravel deposits generally is not difficult or expensive. An ordinary post hole drill or soil auger (with extensions) may be used to determine the location and extent of sand and gravel deposits. Pits may be dug also, but they require more effort and involve some danger if they are deep.

CONSISTENCY

Glacial activity is responsible for the complicated origin and deposition of Michigan's land surface. Pits therefore vary greatly in size, location, depth and consistency. A small pit may yield excellent gravel. However, as it is enlarged the quality may drop appreciably.

OVERBURDEN

In some locations there may be a thick layer of clay *overburden* on top of the sand or gravel. This must be scraped off and piled in a location that will not conflict with the pit operation. Owners should consider future problems that might arise with this material (the overburden) for it could depreciate future land values. Some landowners require that the cleanup operation would level the pile or that the material be placed back in the pit and be leveled.

On extremely valuable agricultural land, the owner might well consider removing the soil separately for later use as top dressing for the abandoned leveled pit.

SURFACE WATER

After the removal operation, a sizable pond may be left. If the banks are cut down and rounded, this artificial pond may be highly valuable for recreation, water supply or residential building sites.

FUTURE OPERATIONS

If the initial operator develops a new pit with high future yield potential, it may be wise for the mineral owner to require that the pit

and roads be left in a usable condition to facilitate future sales of sand or gravel.

OTHER MINERAL RIGHTS

PEAT AND MUCK

Peat and muck are used as top dressing for soil, particularly in new subdivisions, and for the packaging and propagation of nursery plants.

Though there are few high quality deep deposits of peat in Michigan, they do have significant economic value. It is customary to purchase these rights by the acre. An owner would probably benefit more if he determined the volume of peat present, its relative quality, and then leased the peat rights on a cubic yard basis.

Muck usually requires less processing than peat and can best be sold or leased on a dry cubic yard basis or by weight.

A person contemplating the sale of muck or peat should visit several commercial operations and use the information collected to determine the value of his deposit and the method of sale.

It would also seem reasonable to convey only the muck and peat rights, so that the remaining property rights would remain with the landowner.

MARL

Marl is valuable for treating acid agricultural soils. (Historically, it had some value for the manufacture of portland cement.)

It is usually dredged by using a drag line and then hauled after the free water has drained away. The unit of measure for sale could be the cubic yard or ton.

Its value varies greatly and is dependent chiefly upon the percentage of calcium carbonate available. The Soil Science Department of Michigan State University will test samples of marl to determine the pounds of calcium carbonate per yard or its neutralizing effect on soil of specific acidity.

DOLOMITE, GYPSUM AND BUILDING STONE

When these minerals are developed, the operator usually buys fee simple title to the land in order to avoid questions relevant to damage to surface rights.

The operator would not offer to buy unless he knew something of the value of the property; however, the property owner may not have this information. The only recommendation that can be offered would

involve hiring a consulting geologist or contacting the Geological Survey Division, Michigan Department of Conservation.

The property owner should seek all available information from all sources such as neighbors, bulletins and reports bearing on the quality and quantity of his mineral prior to selling.

RADIOACTIVE MINERALS

The Federal Government is vitally concerned with the exploration, development and production of radioactive ore. Financial incentives are provided to encourage exploration and development of nuclear source materials. A person involved with these minerals should write to the Michigan Department of Conservation for specific information.

IRON AND COPPER

Mineral rights to most potential iron and copper areas are already held by organized mining companies. These companies rarely find it necessary to buy additional acreage.

GROUND WATER

Water has little market value in most rural Michigan areas today, but as the demand and competition for water increases, it may easily acquire a future market value.

The rights to ground water are exclusive rights of the mineral owner; however, the development, production and management of ground water is directly related to and dependent upon surface and atmospheric water.

Ground water is a migratory resource subject to reasonable use under the law of capture. Ownership cannot be claimed until the water is captured, that is, pumped up, and stored or used by the owner.

The ground water right could easily be reserved by the owner when leasing or selling other mineral rights.

CLAY, SHALE, SALT AND BRINE

These minerals are locally developed for commercial use. Before leasing or selling, it is recommended that the owners contact other property owners who have developed these minerals in order to determine an equitable price.

Recommendations on Sale or Leasing of Mineral Rights

1. Investigate the quality and quantity of the mineral involved.
2. Determine the market price.
3. Deal with a reliable operator.
4. Sell or transfer only those mineral rights required by the operator.
5. Investigate the local bonus consideration being paid for leased acreage.
6. Confer with an informed attorney before signing a lease.
7. Don't overemphasize bonus and rental rates. The real estate owner frequently places too much importance upon the bonus and rental aspects of leasing. Royalty payments are of the most importance and exploratory work is so expensive for most minerals that the private owner cannot afford it. The property owner gains most by having a reliable operator promote the exploration of his land.

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