

# THE LEGAL ASPECTS OF UNDERGROUND STORAGE OF NATURAL GAS—SHOULD LEGISLATION BE CONSIDERED BEFORE THE PROBLEM ARISES?

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## GENERAL INTRODUCTION

The expanding Canadian natural gas industry has recently achieved prominence in its own right, after years of subordination to the petroleum industry. Since the end of 1957, when the demand for petroleum products declined for the first time since the Leduc discovery of 1947,<sup>1</sup> the increased demand for natural gas production has mitigated the downward trend in the petroleum and natural gas industry.<sup>2</sup> Comparative sales figures for Canadian natural gas in the January to September (1960) period show a 19% increase over the same period in 1959.<sup>3</sup> Moreover, net deliveries to distribution systems in the January to August (1960) period advanced approximately 34% from the like 1959 period.<sup>4</sup>

From the first experiments involving the underground storage of gas by a man in Welland, Ontario in 1915,<sup>5</sup> the practice has increased. In 1956, the gas stored in this manner in 214 United States storage fields was estimated to represent an investment in excess of 395 million dollars.<sup>6</sup> Most of these storage areas are in the heavily populated northeastern states. Canadian storage fields are mainly in Ontario.

The motives for the extensive storage activity in the United States<sup>7</sup> are equally basic to the Canadian industry. In both countries production is mainly found in areas distant from the heavily populated and highly industrialized regions. Gas from the United States southwest is required in the northeastern states; likewise, western Canadian production finds its market in eastern Canada. The pipeline is the most effective means of transporting the supply of gas to the demand area; in addition, the transmission facility must be operating to capacity twelve months of the year to ensure a satisfactory return on investment. Since the advent of underground storage, pipelines have been used during periods of low consumer demand to transmit production to the storage facilities, where it is kept in readiness for the periods of high demand when the capacity of the pipeline would not alone suffice.<sup>8</sup> Furthermore the availability of underground storage allows the continued production of margin-

<sup>1</sup>Dominion Bureau of Statistics, *Canada Year Book*, 1959, p. 503.

<sup>2</sup>*loc. cit.*

<sup>3</sup>Dominion Bureau of Statistics, *Daily Bulletin*, Nov. 30, 1960 Vol. 29, No. 230.

<sup>4</sup>Dominion Bureau of Statistics, *Daily Bulletin*, Nov. 14, 1960 Vol. 29, No. 218.

<sup>5</sup>Stamm, *Legal Problems in the Underground Storage of Natural Gas*, 36 Texas L. Rev. 161 at p. 161.

<sup>6</sup>*loc. cit.*

<sup>7</sup>*Ibid.*, p. 162.

<sup>8</sup>Northwestern Utilities Ltd. estimates that peak period demand can reach six times the requirements of the slack summer season in some northern Alberta centres. This company has underground storage facilities in the Viking-Kinsella field while in the south Canadian Western Natural Gas Ltd. is presently using underground storage to service the greater Calgary area.

ally economic wells, which is only practical if operations can be maintained for 365 days a year. The presence of an underground supply of stored gas also helps to eliminate the inconvenience, if not the danger, which might result from a temporary breakdown in pipeline transmission. The slightest disruption in the supply of gas necessitates inspection and closing of each pilot light in the supplied community before resumption of service, and obviously is an eventuality to be avoided if at all possible. Finally, underground storage is presently the only economical method for storing large quantities of gas. A United States survey indicates generalized unit costs for investment per 1,000 cubic feet of gas for the several types of storage facilities:

Underground storage .....	\$ .40
Liquefaction .....	\$ 20.00
High pressure bottle .....	\$ 50.00
Gas holders and spheres .....	\$175.00 to \$250.00 <sup>9</sup>

A gas storage company will not be presented with an abundance of alternative structures which may be used for underground storage. Usually the area within which the storage is required will afford but a minimum of choices. Depleted gas fields are the obvious choice, but depleted oil and gas fields and depleted oil fields have also been used. In the Hughenden area in Alberta, a salt cavern structure was discovered. Since its recent "depletion" by a salt water injection and brine extraction process, and proof of its ability to hold captive gas, liquid petroleum gases have been injected for storage.

Alberta, at the injection end of the Trans-Canada Pipeline, may soon be faced with the need of storing gas to assure supply commitments. In contrast to the practice of locating storage fields near the terminus of long distance transmission pipelines, storage has been located at the opposite end for use in storage of residue gas in the summer and injection into the pipeline in the winter peak demand period. The storage field will have a stabilizing effect on dry gas wells to prevent production at high rates. The storage reservoir is valuable as a stand-by in case of plant or line failure at any point prior to entry of gas into the main line. In commenting on the Rhodes, New Mexico storage facility in 1947, E. G. Dahlgren, Assistant Secretary, Interstate Oil Compact Commission, commended this type of storage reservoir.<sup>10</sup> Certainly the instances of storage prior to injection have increased in the United States since then.

Once any storage structure has been located and proved, the problem becomes a legal one: how to acquire the necessary surface and sub-surface rights to store gas underground.

## THE LEGAL ASPECT OF UNDERGROUND STORAGE

The nature of the interest and incidents of ownership in sub-surface strata are basic considerations in any analysis of the legal aspect of the underground storage of natural gas. The state of the law being undeveloped, it is helpful to pay heed to real property concepts, and the analogy to hard mineral law.

The holder of a fee simple is unquestionably entitled to store natural gas in the strata underlying his property; however, the more usual situation is a severance of title with surface and mineral rights being held by separate parties.

<sup>9</sup>Stamm, *op. cit.*, p. 163.

<sup>10</sup>Dahlgren, *Underground Gas Storage*, The Mines Magazine, November, 1947.

The respective rights of the parties are an important consideration when storage activity is contemplated.

Often an aspect of oil and gas law new to the Canadian scene has been dealt with previously in the United States, and such treatment is helpful. The American cases on the rights involved in underground storage leaves the law most indecisive. It is not clear whether the surface owner, the mineral owner, or an oil and gas lessee is entitled to the underground reservoir *per se*. In *Hammond v. Central Kentucky Natural Gas*<sup>11</sup> it was held that re-injected gas was analagous to *ferae naturate* and that the defendant had lost possession and title to it upon re-injection. The plaintiff owning property in the middle of the storage field was free to drill and capture any gas escaping under her land.

It would seem, by analogy to herd mineral law, that an appropriate grant could bestow a corporeal estate not limited to the exploring, winning and removal of oil and gas but extending to the reservoir itself. Such a grant would require the latter extension to enhance the estate beyond the conferring of a mere profit à prendre. While the migratory nature of oil and gas might destroy the hard mineral analogy, such a grant of oil and gas would effect a severance and confer on the grantee the property and the exclusive right of possession in the whole space occupied by the oil and gas even after their removal. For certainty, an express grant of the "formation" as well as the oil and gas would be required.<sup>12</sup>

The English rule is that the mineral grantee has the right to use the space exclusively even after all the minerals have been removed.<sup>13</sup> The Appellate Division of the Supreme Court of Alberta expressly adopted this approach in a 1922 decision, *Little v. Western Transfer and Storage Co. Ltd.*,<sup>14</sup> in which the registered owner of "the coal and surface rights" leased "all the said coal". The lessee was held to be entitled to the depleted stratum and was able to use the shaft through which he transported coal from adjoining property. *Campbell's Ruling Cases*<sup>15</sup> were quoted by Beck, J.A.,

"Where the owner of the freehold of inheritance grants the mines (opened as well as unopened) under his land to one, and the land excepting the mines to another, the effect is to carve out the land in superimposed layers; the grantee has the property and exclusive right to possession on the whole space occupied by the layer containing the minerals; and, after the minerals are taken out, is entitled to the entire and exclusive use of that space for all purposes."

The Underground Storage Committee,<sup>16</sup> a sub-committee under the Canadian Mines' Ministers' Conference, recently stated in a paper presented to

<sup>11</sup>255 Ky. 685, 75 S.W. 2d 204 (1934).

See also:

*Central Kentucky Natural Gas v. Smallwood* 252 S.W. 2d 866 (Ky. App. 1942)—held, that the mineral owner was entitled to the rental accruing under a gas production and storage lease.

*Tate v. United Fuel Gas* 137 W.Va. 272, 71 S.E. 2d 65 (1952) held, at trial—that the grantee, Tate, would hold title to the storage formation even though 'oil, gas, brine, and all other minerals except coal' were excepted from the bed under which he claimed. On appeal, which went unreported, the decision was reversed.

<sup>12</sup>Lewis and Thompson, *Canadian Oil and Gas*, p. 33.

<sup>13</sup>*Bowser v. Maclean*, (1860), 2 DeG. F & J 415, at p. 420.

*Batten Pooll v. Kennedy* [1907] 1 Ch. 256 at p. 267, per Warrington, J.

<sup>14</sup>18 Alta. L.R. 407, [1922] 3 W.W.R. 356, 69 D.L.R. 364, followed *Batten Pooll v. Kennedy*, *supra* footnote 11.

<sup>15</sup>Vol. 17, p. 452.

<sup>16</sup>Composed of D. E. Lewis, Q.C., Chairman, and J. B. Corbet, member. See also: Lewis and Thompson, *op. cit.* p. 33.

the latter body that,

"the reasons used in the hard mineral cases lead one to believe that the courts would take the view that a reservation of mines and minerals would include oil and gas and would have the effect of severance of these commodities in place and the grantee would have the property and exclusive right of possession in the whole space occupied by the substances even if they migrated and were taken by offset wells."<sup>17</sup>

The Committee presented a concise opinion on each of three estates, as follows:<sup>18</sup>

(1) *Ownership of the Petroleum and Natural Gas*

Unless the owner has divested himself of his interest in the strata by granting a lease which grants the formation or the reservoir, it would be the Committee's opinion that he owns the reservoir and a lease, license or other document must be obtained from him to get the right to use the surface and the reservoir. If gas is found under an existing gas lease, or it is in a partially depleted reservoir, the interest of the lessee must be considered, and an instrument would have to be obtained from him consenting to the use of the reservoir and settlement made for the gas still in place.

(2) *Reservation of Mines and Minerals*

It would be the opinion of the Committee that a reservation of mines and minerals either in the patent or in one of the preceding titles would except from the title oil and gas and the strata formation or reservoir in which the substances are found. This would mean that the owner of the surface will grant the use of the surface and the owner of the mines and minerals would be the person that grants the right to the underground reservoir in which the substances were located. If it can be proven that strata other than the oil and gas bearing strata are involved in the storage, then the owner of the lands, other than the mines and minerals, would have to consent or grant another document for the use of such strata. Again, a lessee having rights by way of lease to the petroleum and natural gas would have to be considered in the same way as referred to above.

(3) *Lessee of Petroleum and Natural Gas*

A study of the majority of petroleum and natural gas leases in Western Canada shows that the lessee obtains a grant and lease of the petroleum and natural gas and related hydrocarbons together with the right to control and take the substances, or he obtains the right to the petroleum and natural gas. This type of grant seems to exclude the right to the reservoir of the formation and consequently would exclude the right to grant the formation for storage purposes. This would mean an ordinary lessee of petroleum and natural gas would not have any rights in the storage area unless gas had been discovered there or the stratum was still gas bearing. In such a case, settlement would have to be made with him, otherwise he would have a continuing right to take his gas from the formation and possibly the injected gas.

The Committee pointed out that multiple royalty agreements, top leasing, divided ownership, etc., will complicate any of the foregoing situations and make the situation more confused than ever.

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<sup>17</sup>October 17, 1960, at Quebec City.

<sup>18</sup>The fee simple situation is assumed to be no problem.

Even when the parties to be compensated have been determined, there is the possibility that they will not be willing to grant the necessary storage and incidental surface rights. Their motives for refusal may be based on the hope of exacting unreasonable compensation or on the bona fide desire to keep their property unfettered by such an undertaking. Some measures for expropriation may be desirable in view of the public interest involved.

## EXPROPRIATION LEGISLATION

In the United States, condemnation statutes have been enacted by various states based upon the American doctrine of eminent domain. *Black's Law Dictionary* defines eminent domain as follows:

... "the right of a government to take private property for public purposes."

Originally, condemnation provisions were intended to aid in the acquisition of land for pipelines. Later development warranted similar consideration for underground storage facilities. There is an agreed general similarity in the different statutes.<sup>19</sup> After technical certification that the proposed storage is reasonable and in the public interest, the storage company makes a preliminary application to the state oil and gas conservation committee or its equivalent. The company must then instigate condemnation proceedings in the courts. There is usually provision for awarding compensation. At least twelve states have enacted specific legislation authorizing a storage company to bring condemnation proceedings against reluctant owners. The Interstate Oil Compact Commission is presently working on a uniform act.

In Canada, only the Province of Ontario has legislation approaching these condemnation statutes. By virtue of the *Ontario Energy Board Act, 1960* (s. 19) and regulations thereunder, the Ontario Energy Board publicly hears the applicant company and if satisfied as to the necessity and practicability of the submission will recommend that the reservoir be expropriated by Order-in-Council. Such an order will designate the formation area in surface terminology, leaving a necessary buffer zone surrounding it. The statute which provides for arbitration and compensation is scanty by comparison to some United States Acts. The brief mention in the British Columbia Statutes is most insufficient:<sup>20</sup>

"s. 7 (1) A utility shall have the right to expropriate any land in the Province reasonably required for its undertaking, and shall compensate the owner therefore to the extent and in the manner hereinafter provided." [1954 (B.C.) c. 13]

In view of the possibility of further legislative action, several points might be considered. Reasonable access by the storage company for the purpose of its activity might be made explicit by setting forth the surface rights to be acquired. A clarification of the status of re-injected gas might alleviate any *Hammond Case* situation.<sup>21</sup> Restrictions on the type of strata capable of expropriation could be considered. Water supply, mineral deposits and existing petroleum production should not be endangered. The interest of a lessee under an existing oil and gas lease might warrant an explicit provision. The owner should be allowed to explore for and produce minerals by drilling

<sup>19</sup>*Supra* footnote 14, Stamm, *op. cit.*, p. 175.

<sup>20</sup>Under 1954 (B.C.) c. 13, compensation is covered by s. 7 (2) and arbitration is provided by s. 11.

<sup>21</sup>*Supra* footnote 10.

through the storage zone to a lower zone. Protection for the stored gas would be necessary. The company could be required to obtain the agreement of a certain percentage of the owners or the acquisition of a certain portion of the required area before resorting to expropriation. The need for such ramifications is evident from an examination of American statutes and cases. Before any similar legislation is undertaken a further study of existing expropriation legislation would be required.

Current expansion in the Canadian natural gas industry warrants consideration by the provinces of legislative action in view of the American experience and the legal problems of underground storage.