TORT LIABILITY IN WATERFLOOD OPERATIONS*

There is now almost universal recognition of the fact that enhanced recovery schemes in oil and gas reservoirs, including waterflooding, are in the general public good and play an essential role in preventing waste, realizing the greatest possible ultimate recovery of oil and gas, and generally achieving the conservation objectives of applicable legislation in Western Canada.[1] Both government and industry have readily accepted this fact with the result that virtually every important producing reservoir in Western Canada has in operation some form of enhanced recovery program. According to a recent informed count, there are over 200 unitized fields of all sizes in Manitoba, Saskatchewan, Alberta and British Columbia, nearly all of which have some form of pressure maintenance or enhanced recovery program.

A consideration of applicable law where such enhanced schemes adversely affect the property rights of non-participating mineral owners does not reveal such a universally harmonious situation. There are no Canadian court decisions that have dealt with the problem directly and applicable legislation does not appear to offer any significant assistance. This review of the law, therefore, primarily involves a study of the orthodox rules and principles of tort and particularly those of trespass, nuisance, negligence, and strict liability, with a look at the law of capture, the extent, if any, to which legislative enactment offers protection to operators or alters the traditional remedies of landowners for interference with property rights, and quantum of damages. Each of these questions shall be considered in turn.

For purposes of discussion, a fact situation will be assumed as follows:

Oil operator lessee A proposes to operator lessee B, who owns oil lease rights on lands immediately adjoining, that they join in a waterflooding operation in the oil reservoir underlying their lands. B declines. A institutes a unilateral flood of his own lease by drilling several input wells close to the property lines separating the leases. Substantial quantities of extraneous water under pressure are injected into the reservoir formation through the input wells. Shortly thereafter the producing wells on B's land increase in water production and soon produce only water. Before commencing the operation, A obtains all required regulatory approvals for the scheme and conducts the operation in accordance with good oil field practice and in full compliance with all applicable regulations and orders.

A. TRESPASS

Several questions must be examined in a consideration of trespass as an appropriate action involving damages caused by waterflood operations.

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* This paper was prepared through the combined efforts of P. Donald Kennedy, General Counsel, Sun Oil Company, Calgary; J. Boyd Lowery, Solicitor, Imperial Oil Limited, Calgary; John Anderson, Chief Legal Advisor, Pacific Petroleums Ltd., Calgary; Jerald D. Palmer, Solicitor, Texaco Exploration Company, Calgary; Richard H. Ostrosser, Solicitor, Sun Oil Company, Calgary; and James S. Palmer, of the firm Burnet, Duckworth, Palmer, Tomblin and O'Donoghue, Calgary.

1 The Mines Act, R.S.M. 1954, c. 166. The Oil and Gas Conservation Act, R.S.S. 1965, c. 360. The Oil and Gas Conservation Act, S. A. 1957, c. 63. The Petroleum and Natural Gas Act, S.B.C. 1965, c. 33.

Trespass to land is an unlawful entry upon land in the possession of another. Winfield says:

> Trespass to land is unjustifiable interference with possession of it.[2]

It makes no difference that the interference is underground in a natural reservoir; and a subsoil trespass may occur even though the subsoil and the surface are possessed by different persons.[3] It is essential, however, that there be possession as the action is based on an interference with possession.

The land encroached upon by the waterflood in our assumed facts being subject to an oil and gas lease, the respective rights of the lessor and the lessee to sue in trespass must be considered. Since *Berkheiser* v. *Berkheiser*[4] it has been generally accepted in Western Canada that the common form of oil and gas lease is a grant of a *profit à prendre,* or at least an enforceable contract containing rights similar to a *profit à prendre* if it does not conform with the formalities required for a formal grant thereof mentioned by Williams, C. J. Q. B., in *Langlois* v. *Canadian Superior Oil of California Ltd.*[5] In either case it appears clear that the lessee as holder of either such right may prosecute an action based upon trespass. The line of old fishery cases[6] establish the right of the holder of a *profit à prendre* to sue in trespass; and as recently as 1965 this right, again in respect of a fishery, was confirmed by the Appellate Division of the Supreme Court of New Brunswick.[7] In *Hindson* v. *Ashby,* Lord Lindley said in reference to the plaintiff's exclusive right to fish in a section of a river:

> . . . his several fishery was an incorporeal hereditament and a *profit à prendre* for the disturbance of which trespass was the appropriate remedy.[8]

If it may be said that under an oil and gas lease not executed under seal or not complying with other required formalities does not constitute a grant of a *profit à prendre,* the right of the lessee to sue in trespass is confirmed by the relatively recent decision of the English House of Lords in *Mason* v. *Clarke*[9] which held that where the plaintiff had an enforceable contract for a grant of a *profit à prendre* combined with possession "he was clearly entitled to bring an action for trespass."[10]

The lessor, on the other hand, is in a little different position as to his right to sue based on trespass. Since the lessor does not have possession, he is largely deprived of this right until termination of the lease unless he shows that the damage occasioned by the waterflood is of such a nature as to cause permanent damage or loss. This might well be true in our stated case. Winfield says:

> . . . a reversioner, as he has no possession, cannot sue for trespass unless the wrong is of such a nature as permanently to affect the value of his interest in the land, e.g., cutting down trees or pulling down buildings.[11]

A recent decision of the Saskatchewan Court of Appeal is of interest in regard to the rights of a lessor to sue for trespass. In *Grosvenor Park* v. *Woloshin*[12] the plaintiff owner of a shopping centre sought an in-

2 *Winfield on Tort,* 7th ed., at 358.
3 *Id.,* at 372.
4 [1957] S.C.R. 387.
5 (1957), 23 W.W.R. 401, 413; Lewis & Thompson, *Canadian Oil & Gas,* Vol. 1, s. 60.
6 Hindson v. Ashby, [1896] 2 Ch. 1; Bristow v. Cormican, [1878] 3 A.C. 641, and others.
7 Boyd v. Fudge, (1965), 46 D.L.R. (2d) 679.
8 *Ante,* n. 6, at 10.
9 [1955] A.C. 778.
10 *Id.,* at 799.
11 *Ante,* n. 2, at 368.
12 (1964), 49 W.W.R. 237.

junction to restrain union members from picketing the business premises of one of the lessees in the shopping centre area. The picketers occupied the parking area of the centre and a sidewalk under lease to the lessee. Culliton, C. J. S., speaking for the court, said:

> The action is founded in trespass. No authority is needed for the proposition that in an action for trespass, the essential element is possession: 38 Halsbury 3rd ed. p. 743 par. 1213 states: 'any form of possession, so long as it is clear and exclusive and exercised with the intention to possess is sufficient to support an action for trespass against a wrongdoer'.[13]

The court then went on to hold that since the plaintiff had leased the shopping centre to several tenants and guaranteed the right of access and use of parking areas to the tenants, their employees, agents and the public generally, the plaintiff was not in possession and the action in trespass must fail.

It is interesting to note in the *Grosvenor Park* v. *Woloshin* case, however, that after giving its decision, the court added that it would quickly have construed the pleadings as an action in nuisance but could see no purpose in so doing as the plaintiff did not wish to pursue the action further. This construction of pleadings was also readily adopted in the Alberta case of *Phillips* v. *The California Standard Company and Seismotech Ltd. and Sohio Petroleum Company.*[14]

Possession is an essential question for a party bringing an action based on trespass. It seems clear, however, that where an oil and gas lessee has filed a caveat in the appropriate Land Registry Office, he has given sufficient notice of his intention to possess his rights exclusively. Further acts, such as payment of rental, geophysical surveys, etc., would be additional evidence of title and possession. The question was discussed in *Bristow* v. *Cormican.*[15] In the British Columbia case of *Adams Powell River* v. *Canadian Puget Sound Co.*[16] it was held that acts of ownership such as making surveys, paying license fees and other acts in accordance with applicable regulations constituted evidence of title sufficient for trespass.

Under our stated facts then has a trespass occurred? In a normal waterflood operation it can be expected that water will move to other lands in the near vicinity. An operator should regard this as a probable consequence. He may not have any intention that the water enter other lands. For trespass, however, intention is not a necessary element, nor even knowledge. The trespass is actionable *per se.*[17]

It is of importance to consider that the water may not have entered the adjoining land by following natural courses. It has moved as a result of injection under pressure, which may have caused subsurface fractures providing access that would otherwise not have existed; but once having access, the water may have been forced to move against its natural gravitational flow. This tends to distinguish our situation from *Esso Petroleum Co. Ltd.* v. *Southport Corporation*[18] where oil jettisoned from a ship in distress eventually found its way through action of the wind and waves to the plaintiff's land on the shore. The House of Lords

13 *Id.*, at 241.
14 (1960), 31 W.W.R. (N.S.) 331.
15 [1878] 3 App. Cas. 641.
16 (1914), 17 D.L.R. 591.
17 *Mann* v. *Saulnier* (1959), 19 D.L.R. (2d) 130, 133.
18 [1956] A.C. 218.

found that a trespass had not occurred because of the remoteness of the action.

Similarly, we may distinguish other cases permitting the flow of naturally occurring water along natural drainage courses or the removal of natural water barriers to enable use or development of lands as, for example, *Smith* v. *Kenrick*[19] where the defendant in the course of normal mining operations removed a bar of coal in his mine that held back water thus causing flooding of a lower mine when water followed natural gravitation. The defendant was held not liable.

Our fact situation is more like another mining case, *Baird* v. *Williamson*[20] where defendant was held liable for pumping water from his mine into the adjoining mine. Here, Erle, C. J. said:

> The law . . . does not authorize the occupier of the higher mine to interfere with the gravitation of the water so as to make it more injurious to the lower mine or advantageous to himself.[21]

The court did not discuss what specific branch of law was applicable. The finding of liability was not based on trespass.

In the decisions considered, where a somewhat analagous situation has existed, trespass does not appear to have been the test by which the court arrived at its conclusions.

In *Fitzgerald* v. *Firbank*[22] the defendant interfered with the plaintiff's fishing rights in a river by discharging dirty water into the stream above, thus driving away the fish and preventing spawning. Rigby, L. J. said:

> I hold the grantees of the incorporeal hereditaments have a right of action against any person who disturbs them either by trespass or by nuisance or by any other substantial manner.[23]

But the finding of liability was based on nuisance in this particular case. As in *Baird* v. *Williamson* referred to above, trespass was not expressed to be the basis of liability.

In the United States, while some decisions concerning waterflood damage directly have been based on trespass, it does not appear that this is the prevailing view. The trial court in the Kansas case of *Tidewater Oil Company* v. *Jackson*[24] found trespass, inter alia, to be a ground for liability for damage caused by a waterflood. On appeal, however, the U.S. Court of Appeals[25] tended to disregard trespass along with the other forms of tort action in favour of an award of damages based on compensation for taking of land under principles of eminent domain.

In the earlier case of *West Edmond Hunton Lime Unit* v. *Lillard*,[26] the Oklahoma Supreme Court held that salt water injected on adjoining land and damaging the plaintiff's wells, was a continuing trespass. It does not appear that this decision is being followed in other jurisdictions, however.

The Texas courts have apparently taken the view that trespass is not an appropriate form of action in view of the public good involved in waterflood operations generally. G. H. Bowen, in a paper delivered to

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19 137 E.R. 205; 7 C.B. 514.
20 143 E.R. 831; 15 C.B. (N.S.) 375.
21 *Id.*, at 837.
22 [1892] 2 Ch. 96.
23 *Id.*, at 104.
24 17 *Oil & Gas Reporter* 282, at 296.
25 18 *Oil & Gas Reporter* 982.
26 3 *Oil & Gas Reporter* 1426.

the Southwestern Legal Foundation Institute on Oil and Gas Law and Taxation, says it is:

> . . . logical to conclude that secondary recovery operations should be governed by the negligence rule and that operators should only be liable for damage resulting from negligence or for intentional or reckless trespass, unless by specific statutory provision a more stringent degree of liability is fixed.[27]

B. NUISANCE

Most writers dealing with the subject of nuisance commence by attempting to establish that it is a subject that is very difficult to define and identify. It is said that to the question "what is nuisance?" there is no precise answer.[28] Salmond says:

> The basis of the law of nuisance is the maxim *sic utere tuo ut alienum non laedis*: a man must not make such use of his property as unreasonably and unnecessarily to cause inconvenience to his neighbor.[29]

Winfield says:

> No precise or universal formula is possible. Whether an act constitutes a nuisance cannot be determined merely by an abstract consideration of the act itself, but by reference to all the circumstances of the particular case; the time and place of its commission, the manner of committing it, whether it was done wantonly or in the reasonable exercise of rights; and the effect of its commission, that is whether those effects are transitory or permanent, occasional or continuous; so that the question of nuisance or no nuisance is one of fact.[30]

Lord Wright stated in *Sedleigh-Denfield* v. *O'Callahan*:

> A balance has to be maintained between the right of the occupier to do what he likes with his own, and the right of his neighbor not to be interefered with. It is impossible to give any precise or universal formula, but it may broadly be said that a useful test is perhaps what is reasonable according to the ordinary usages of mankind living in society, or more correctly in a particular society.[31]

These statements raise questions of the right to use one's property, reasonableness, necessity and a degree of inconvenience to a neighbor. Salmond also suggests[32] that no use of property is reasonable that causes substantial harm or discomfort to another. But a landowner does have a right to the reasonable use of his property. In this regard, however, Halsbury states:

> A private nuisance is one which does not cause damage or inconvenience to the public at large but does interfere with a person's use or enjoyment of land or some right connected with land.[33]

The major question to answer is whether or not the waterflooding operation is a reasonable one according to the ordinary usages of mankind living in the "particular society" of western Canada. In *Chandler Electric Company* v. *H. H. Fuller & Company*, where steam from a condenser attached to an engine discharged steam twenty feet from the plaintiff's warehouse causing damage, Patterson, J. who delivered the majority judgment said:

> The defendants are liable upon a very simple principle. They did something which caused injury to the plaintiffs . . . The defendants must therefore pay the damages.[34]

Mr. Justice Patterson goes on to quote, with approval, a passage from the judgment of Denman, J. in *Humphries* v. *Cousins*:[35]

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27 Bowen, *Secondary Recovery Operations—Their Values and Their Legal Problems* (1962); 13th Annual S.W. Legal Foundation Institute on Oil & Gas Law & Taxation.
28 *Bamford* v. *Turnley* (1862), 122 E.R. 25.
29 *Salmond on Torts*, 10th ed., at 221.
30 *Winfield on Tort*, 7th ed., at 397.
31 [1940] A.C. 880, 903.
32 *Ante*, n. 29, at 230.
33 28 *Halsbury's Laws* 12, (3d ed. Simonds 1955).
34 (1892), 21 Can. S.C.R. 337.
35 2 C.P.D. 239, 243.

> The prima facie right of every occupier of a piece of land is to enjoy that land free from all invasion of filth or other matter coming from any artificial structure on land adjoining. Moreover, this right of every occupier of land is an incident of possession, and does not depend on acts or omissions of other people; it is independent of what they may know or not know of the state of their own property, and independent of the care or want of care which they may take of it. That these are the rights of an occupier of land appears to me to be established by the cases."

While Mr. Justice Patterson did not deal directly with the question of "reasonable use" he did comment that the Court of Appeal judges appeared to base their judgment "to some extent on the facts as apprehended by them" namely:

> . . . that the defendants discharged the hot water from their condenser in the ordinary way of using their machinery in their own building and without reason to anticipate its doing injury to their neighbour.

In respect of this point Mr. Justice Patterson states:

> . . . with great respect for those learned judges I am of opinion that adopting the findings of facts by the trial judge, as we must do, those findings being moreover in clear accordance with the evidence, the discussion of that legal question is rather irrelevant.

It would appear, therefore, that if damages are proved, Mr. Justice Patterson considered it unnecessary to determine whether the use of property made by the defendant was reasonable or unreasonable.

In *Drisdale* v. *Dugas*[36] Chief Justice Sir Henry Strong after setting out the fact of a livery stable being erected close to the plaintiff's two houses in Montreal and concurring with the decision of the two Courts below that damage was caused by the stable, states that the Quebec Civil Code and the common law of England are the same with respect to abuses of proprietary rights:

> . . . such rights must, according to the general principals of all systems of law, be subject to certain restrictions subordinating the exercise of acts of ownership to the rights of neighbouring proprietors.

However, he says further on:

> In applying the law, however, regard is to be had in determining whether the acts complained of, are to be considered nuisances to the conditions and surroundings of the property.

While the Chief Justice quotes from the dissenting judgment of Pollock, C. B. in *Bamford* v. *Turnley* to the effect that what may be a nuisance in one place may not be a nuisance in another place, he states:

> . . . in that case (referring to the *Bamford* v. *Turnley* case) it was laid down as the true doctrine applicable in cases of this kind that 'whenever, taking all the circumstances into consideration including the nature and extent of the plaintiff's enjoyment before the acts complained of, the annoyance is sufficiently great to amount to a nuisance according to the ordinary rule of law, an action will lie whatever the locality may be.'[37]

These two cases indicate that the Supreme Court of Canada has taken the attitude that it makes no difference where the act complained of is commited. If the act causes damage there should be compensation in the form of damages or injunction or both. If a person sets up a noisy or odorous factory in a residential area he must suffer the consequences if damage is caused. If the factory was in operation prior to the development of the area into a residential area, it is no defence to say that the residences came to the nuisance.[38]

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[36] (1896), 26 Can. S.C.R. 20, 23.
[37] *Id.*, at 24.
[38] *Tipping* v. *St. Helen's Smelting (Company*, L.R. 1 Ch. App. 66).

In other words, the locality of the plaintiff's land and the fact of prior occupancy of his land, has no bearing upon the fact of nuisance or no nuisance. What are to be considered are the circumstances of the particular case; i.e., what is reasonable according to the custom or usages of persons in a particular society.

Matters to be considered are time, manner of commission, whether reasonable or wanton exercise of right, whether effect is transitory or permanent, occasional or continuous.[39]

In *Shultz* v. *Rycks*[40] the Alberta District court considered a case where one landowner allowed fire from his fields to spread to adjoining land. In view of the customary practice of burning in the area it was held that the burning was good husbandry and a reasonable use of land. The case was dismissed in the absence of proof of negligence and in view of the fact that plaintiff with knowledge of the fire had taken no steps to have it extinguished.

In *Grandel* v. *Mason,* Mr. Justice Estey quoted Lord Green from the case of *Andreae* v. *Selfridge*:

> . . . the use of reasonable care and skill in connection with matters of this kind may take various forms. It may take the form of restricting the hours during which the work is to be done, it may take the form of limiting the amount of a particular type of work which is being done simultaneously within a particular area; *it may take the form of using proper scientific methods of avoiding inconvenience.* Whatever form it takes, it has to be done and those who do not do it must not be surprised if they have to pay the penalty for disregarding their neighbour's rights.[41] (the *italics* are added.)

If the operator of a lease carries out waterflood operations which cause damage to an oil well on an adjoining lease, whether such act causing damage is a nuisance must be determined as a question of fact in light of all the surrounding circumstances. Notwithstanding the obiter dicta of Mr. Justice Patterson in *Chandler Electric Company* v. *H. H. Fuller & Company* supra it appears to be the law in Canada that if the act complained of is a "reasonable use" of one's own property, no action will lie in nuisance for damage caused by such act. The cases do suggest, however, that any act which causes substantial damage to adjoining land is prima facie an unreasonable use and therefore a nuisance.

On the question of whether or not waterflooding operations in Alberta are so frequent as to be considered a reasonable use of land and thus a sufficient answer to an action in nuisance, Mr. Justice Riley's decision on the Trial Division of the Supreme Court of Alberta in *Phillips* v. *The California Standard Company*[42] suggests an answer. In that case the plaintiff sued for damages caused by the discharge of underground explosions in connection with seismic operations on adjoining lands.

While Mr. Justice Riley did not express any opinions as to whether or not the use of land was unreasonable, he did find that there was actionable nuisance, and it may be said therefore that seismic operations in Alberta are not a "reasonable use" of land sufficient to provide a defence to a claim for nuisance. If one considers, however, the incidence of seismic exploratory work undertaken in the Province of Alberta during the past 18 years, it surely must be concluded that seismic operations by that test alone, should be considered as more of a "reasonable use" of land

39 *Ante.*, n. 30; *Ante*, n. 31; *Post*, n. 40.
40 (1964), 48 W.W.R. 150.
41 [1953] S.C.R. 459. 465.
42 (1960), 31 W.W.R. 331.

in Alberta than waterflooding. If the amount of seismography work in Alberta is compared to the amount of waterflooding activity in the Province, then on the basis of this decision, it is submitted that waterflood operations are clearly, on a test of frequency of use, an unreasonable use of land in Alberta.

In conclusion, therefore, it is submitted that for a nuisance to exist in law there must be an interference with a use or enjoyment of land and that damage must ensue. A balance must be maintained between the rights of an occupier to use his land as he sees fit and the right of a neighbour to enjoy his land. The fact that the use of land is for the public benefit or that great care and skill is used, are not valid defences. Reasonableness of the act causing damage has been described as being one of the chief tests. In this sense reasonableness means more than it does when negligence is being considered in that it is necessary for more than proper care to have been taken. It is suggested that all the circumstances must be examined to determine what is reasonable. The question of locale is not the basis upon which decisions have been made. In order for the defendant's actions to be reasonable, he must make use of all available knowledge, and the fact that one method is more expensive than another is not a defence.

It is, therefore, our opinion that the damage incurred by operator lessee B in our fact situation was not the result of a "reasonable use" of land and operator lessee B could successfully claim damages for nuisance against operator lessee A.

C. *STRICT LIABILITY: RYLANDS* v. *FLETCHER*

Approximately one hundred years ago, Blackburn, J. in the Court of Exchequer Chamber said that:

> We think that the true rule of law is, that the person who for his own purposes brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril, and, if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape.[43]

On appeal to the House of Lords,[44] Blackburn, J.'s decision was affirmed but The Chancellor's (Lord Cairns') explanation of the rule led to the concept of "non-natural" as opposed to "natural" user of land. Thus if what escaped was the result of a "natural" use of land, the strict liability principle outlined by Blackburn, J. did not apply.

It could be argued that the introduction of water into a hydrocarbon reservoir for pressure maintenance or secondary recovery projects is a "natural" use of land and thus strict liability does not attach to the person injecting such water. Even assuming it is not a "natural" use of land within Lord Cairns' exception to strict liability it has been suggested by Lewis & Thompson that:

> . . . the hard mineral cases indicate that there will be no liability for reservoir damage apart from negligence provided the operation is ordinary, reasonable and proper, which is a question of fact in each case.[45]

For this statement the authors rely on Halsbury[46] and Street.[47] The case, relied upon by Halsbury[48] deal with water which finds its way to

43 *Fletcher* v. *Rylands*, [1866] L.R. 1 Ex. 265, 279.
44 *Rylands* v. *Fletcher*, [1868] L.R. 3 H.L. 330.
45 Lewis and Thompson, *Canadian Oil and Gas*, Vol. 1, s. 164E.
46 26 *Halsbury's Laws* 409, s. 849 (3d ed. Simonds 1955).
47 Street, *The Law of Torts*, at 238.
48 *Smith* v. *Kenrick*, 137 E.R. 205; *Baird* v. *Williamson*, 143 E.R. 831; *Wilson* v. *Waddell*, [1876] 2 App. Cas. 95 H.L.; *Smith* v. *Fletcher*, [1874] L.R. 9 Exch. 64, affirmed *sub nom. Fletcher* v. *Smith*, [1877] 2 App. Cas. 781, H. L.; *Lomax* v. *Stott*, [1870] L.J. Ch. 834; *Westhoughton Coal and Cannel Co., Ltd.* v. *Wigan Coal Corp. Ltd.*, [1939] Ch. 800.

the plaintiffs' mine by natural means (gravitation). The water which accumulated on the defendants' land was not brought thereon by the defendants but rather accumulated as the result of normal coal mining operations and escaped by following natural gravitational drainage patterns. In coal mining operations water is the common enemy and may be dealt with by pumping. Creswell, J. indicated the principle as follows:

> We think that the same principle is applicable to the present case. The water is a sort of common enemy—as was said by Lord Tenterden, in *Rex* v. *The Commissioners of Sewers for Pagham Level*, — against which each man must defend himself. And this is in accordance with the civil law, by which it was considered that land on a lower level, owed a natural servitude to that on a higher, in respect of receiving, without claim to compensation, the water naturally flowing down to it.[49]

How does a well owner "defend" himself from water encroachment due to water floodling? Certainly it is not a simple matter of pumping the water away as it is in the coal mining cases. The "natural servitude" indicated by Creswell, J. was also considered by the Alberta Courts[50] in respect of artesian wells, but what "servitude" is there between adjacent well owners when there is no apparent natural drainage pattern?

Another case relied upon by Lewis and Thompson for their opinion[51] is that of *Baird* v. *Williamson*.[52] In this case, Earle, C. J., said:

> The defendants, as occupiers of the higher mine, have no right to be active agents in sending water into the lower mine.[53]

and also he indicated:

> The law imposing these regulations for the enjoyment of somewhat conflicting interests does not authorize the occupier of the higher mine to interfere with the gravitation of the water, so as to make it more injurious to the lower mine or advantageous to himself.[54]

Similarly, the case of *Wilson* v. *Waddell*[55] is not authority for the non application of the rule in *Rylands* v. *Fletcher* to mining cases but on the contrary is an application of the rule as propounded by Lord Cairns. It is interesting to note that Lord Blackburn, who rendered the decision in this case (*Wilson* v. *Waddell*) is the judge of record in the Court of Exchequer Chamber decision of *Rylands* v. *Fletcher* and the man credited with originating the so-called "rule". He quotes with approval Lord Cairns' version of the rule[56] and then finds the defendants not liable on the basis of a "natural use" of land:

> My Lords, the evidence was that coal at the upper part of the seam could not in any way be removed without breaking the surface in the way in which it was broken, and that this was the usual and proper course of working such coal.[57]

The case of *Smith* v. *Fletcher*[58] far from supporting the statement in Lewis and Thompson[59] indicates that even without negligence a person, who for his own convenience diverts a stream of surface water which finds its way to the plaintiff's mine by overflowing and seeping down surface cracks on the defendant's land caused by subsistence due to

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49 *Smith* v. *Kendrick*, [1849] 7 C.B. 515, 566.
50 *Christa* v. *Marshall*, [1945] 2 W.W.R. 44, 48.
51 *Ante*, n. 45.
52 143 E.R. 831.
53 *Id.*, at 391.
54 *Id.*, at 392.
55 [1876] 2 App. Cas. 95.
56 *Id.*, at 99.
57 *Id.*, at 100.
58 [1874] L.R. 9 Exch. 64; affirmed *sub nom.* *Fletcher* v. *Smith*, [1877] 2 App. Cas. 781.
59 *Ante*, n. 45.

mining operations on the defendant's land, may be liable for the damage caused even though the overflow was caused by an unforeseeable and unusually heavy rain. In this case the defendants were liable.

The more recent case of *Westhoughton Coal and Cannel Co., Ltd.* v. *Wigan Coal Corp., Ltd.*[60] again indicates that a downdip mine must accept without complaint water which flows by natural means (gravitation) from another mine. In this case the defendants ceased operating their mine as it was worked out. Naturally they no longer removed water from the abandoned mine with the result that water accumulated therein and flowed by natural means to the plaintiff's mine. Goddard, L. J. said:

> . . . they (the defendants) had no power to stop the flow of water in it, and we are unable to see how, on any view, it can be said that at the relevant time they were causing or permitting this water to flow into the plaintiffs' mine.[61]

It would seem to be a better summary of the hard mineral cases to say that in so far as flooding is caused by introduction of foreign fluids, then, whether the action be framed in nuisance or on the principle of *Rylands* v. *Fletcher*, the hard mineral cases indicate that there will be liability for reservoir damage apart from negligence.

In all of these cases, the defendant cannot be accused of introducing foreign fluids to his land. The non-foreign fluids were already there, and, if they accumulated in the defendant's mine, they did so only as the result of ordinary mining practices. When they escape they did so only by natural means (gravitation). It is difficult to see the analogy from this to a purposeful introduction of foreign fluids. In fact the cases indicate that for such an overt act liability will lie.

As indicated previously it has been suggested that water flooding is a "natural-user" of land.[62] Whether it is or is not is only of importance if the court adopts Lord Cairns' version of the rule in *Rylands* v. *Fletcher*. The correct view would seem to be that of MacDonald, J. in *J. P. Porter Co.* v. *Bell*,[63] wherein he indicates that the defence of "natural user" depends upon the circumstances of the case itself and if justice so demands Lord Cairns' version of the rule will be conveniently forgotten. For example, Ford, J. in the Alberta Supreme Court case of *Mortimer* v. *British American Oil Co.*[64] said that the "rule"

> . . . makes the defendant liable, without negligence on its part. . . .[65]

but did not discuss whether the use was "natural" or "non-natural". On the other hand, Ilsley, C. J., in *Vaughan* v. *Halifax-Dartmouth Bridge Commission*[66] indicates that either the bridge or the protective painting thereof or both constitute "non-natural" use of land within the meaning of *Rylands* v. *Fletcher*.

Lord Wright indicates that strict liability as propounded by Blackburn, J. is applicable in Alberta as follows:

> That gas is a dangerous thing within the rules applicable to things dangerous in themselves is beyond question. Thus the appellants who are carrying in their mains the inflammable and explosive gas are *prima facie* within the principle of *Rylands* v. *Fletcher*, [1868] L.R. 3 H.L. 330, 37 L. J. Ex. 161, affirming L.

60 [1939] Ch. 800.
61 *Id.*, at 810 (the words in parentheses are added).
62 Bredin, *Legal Liability for Water Flooding in Petroleum Reservoirs in Alberta*, 1 Alta. L. Rev. 516, at 522.
63 [1955] 1 D.L.R. 62, 66.
64 [1949] 2 W.W.R. 107.
65 *Id.*, at 115.
66 (1961), 29 D.L.R. (2d) 523, 526; Ilsley, C. J.'s judgment was the minority basis for establishing liability. The majority were of the opinion that *Rylands* v. *Fletcher* did not apply although the defendant was liable on the basis of negligence.

> R. 1 Ex. 265; that is to say, that though they are doing nothing wrongful in carrying the dangerous thing so long as they keep it in their pipes, they come *prima facie* within the rule of strict liability if the gas escapes; the gas constitutes an extraordinary danger created by the appellants for their own purposes, and the rule established by *Rylands* v. *Fletcher*, supra, requires that they act at their peril and must pay for damage caused by the gas if it escapes, even without any negligence on their part.[67]

Chrsita v. *Marshall*[68] is an Alberta water flooding case of sorts. The defendants drilled artesian water wells which were allowed to flow at all times. This water flowed down a natural drainage course to and across the plaintiff's land. As a result a certain acreage of the plaintiff's land never dried sufficiently to permit cultivation. The defendants were held liable even though the use of artesian wells could be called a natural use.

> It may be a natural use of land to bring such waters to the surface, but it was not in the course of nature to allow it to escape, or in the course of nature for the plaintiff to have it flow over his lands. The waters from the artesian wells, being subterranean waters, but for the industry of the defendants would never, in the ordinary course of nature, have reached the plaintiff's lands. In other words, the defendants have increased the servitude which the plaintiff's land was subjected to under ordinary circumstances.[69]

It is submitted that offsetting owners to a waterflood operator are not subservient to the receipt of water. To force these owners to accept water in their reservoir from sources outside their lease boundaries is to make them subservient and thus increase their servitude.

In *Low* v. *C.P.R.*[70] the railway company dammed up a creek to make water available for railway purposes. The reservoir overflowed and caused injury to the plaintiffs. The railway was not liable because:

> The rule of strict liability as held in *Rylands* v. *Fletcher* is met by proving a proper exercise of statutory powers. . . .[71]

The statutory exception to *Rylands* v. *Fletcher* is discussed elsewhere.[71a]

Ford, J. in *Mortimer* v. *British American Oil Company*[72] applies the strict liability version of *Rylands* v. *Fletcher* and makes no mention of whether the "use" being made of the land on the part of the defendant was "natural" or "non-natural". Ford, J. negatived the possibility of negligence as follows:

> If it were a question of negligence on the part of the defendant, the action must undoubtedly be dismissed, for none has been proved.[73]

There were other possibilities for the source of the escaping gas but on the balance of probabilities the escaping gas was attributed to the defendants and they were held liable on the basis of *Rylands* v. *Fletcher*. The burden placed upon a plaintiff to prove the source of water in a well suffering from water encroachment may not be as great as was first thought.

> But the rule in *Rylands* v. *Fletcher*, *supra*, makes the defendant liable without negligence on its part, if a reasonable inference may be drawn after balancing the probabilities that the source of the gas was their property or pipe lines.[74]

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67 *London Guar. & Acc. Co.* v. *Northwestern Utilities*, [1935] 3 W.W.R. 446, 450-451.
68 [1945] 2 W.W.R. 44.
69 *Id.*, at 51 (Parlee, J.).
70 [1949] 2 W.W.R. 433.
71 *Id.*, at 452 (Ford, J.).
71a See footnote 84 and following text.
72 [1949] 2 W.W.R. 107.
73 *Id.*, at 115.
74 *Ibid.*

The Ontario High Court held that the doctrine of *Rylands* v. *Fletcher,* nuisance and negligence applied simultaneously to certain of the defendants in *Aldrige* v. *Van Patter*[75] when a stock car crashed through the fence at a race track and injured the plaintiffs who were standing in a public park.

The appellate division of the Supreme Court of Nova Scotia reviews in depth the doctrine of *Rylands* v. *Fletcher* in the case of *J. P. Porter Co.* v. *Bell.*[76] As indicated previously it concludes there are two rules to be invoked as the circumstances warrant. In this case the defendants were carrying out a defence contract which included blasting and dredging operations at the Seaward Defence Site. The work was done pursuant to a contract approved in the ordinary way by the Governor in Council as authorized by the Defence Production Act. Vibrations from the blasting injured the plaintiffs. One of the defences was a "natural user" of land. MacDonald, J. disposed of this by saying:

> . . . the Defence Production Act . . . does not owe its validity to the existence of any stated 'national emergency'. Accordingly the defence of 'natural user' fails here.[77]

In *Lohndorf* v. *British American Oil Company,*[78] gas escaped from the defendant's gathering line, entered the plaintiffs' house and caused an explosion. The defendants were held liable on the basis of *Rylands* v. *Fletcher* and also on the basis of negligence.

The Supreme Court of Newfoundland has also recently invoked one of the rules in *Rylands* v. *Fletcher,* in the case of *Skanes* v. *Town Council of Wabana.*[79]

In conclusion, if injecting water into a reservoir is a "non-natural" use of land, then it is submitted that the hard mineral cases afford no defence to the escape of water if damage results. It is further submitted that the lack of negligence[80] is no defence to liability based on the "rule" of *Rylands* v. *Fletcher.*

It is difficult to reconcile why blasting operations on a naval defence site[81] for purposes of national defence should be considered a "non-natural" use of land and water flooding for oil production purposes a "natural" use of land. It is submitted that water flooding of a hydrocarbon reservoir is a "non-natural" use of land. In any event the defence of "natural" use depends upon the circumstances of the case itself and if justice so demands, Lord Cairns' version of the rule will be conveniently forgotten as previously indicated.

For the reasons indicated, it is likely that operator lessee B would have a good action against operator lessee A, based on *Rylands* v. *Fletcher.*

D. NEGLIGENCE

It is generally accepted that every person is responsible for the foreseeable consequences of his own negligence. There is no reason to believe that this is not true in the case of a negligent waterflood operation.

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75 [1952] 4 D.L.R. 93.
76 [1955] 1 D.L.R. 62.
77 *Id.,* at 66.
78 (1958), 24 W.W.R. 193.
79 (1958), 12 D.L.R. (2d) 846.
80 *London Guar. & Acc. Co.* v. *Northwestern Utilities,* [1935] 3 W.W.R. 446, 451; *Mortimer* v. *British American Oil Co.,* [1949] 2 W.W.R. 107, 115; *Lohndorf* v. *British American Oil Co.* (1958), 24 W.W.R. 193, 196.
81 *J. P. Porter Co.* v. *Bell,* [1955] 1 D.L.R. 62, 66.

However, there may be some difficulty in proving negligence. In *Tidewater* v. *Jackson, supra,* the trial court made a finding of negligence based on injection of excessive amount of water under excessive pressures, exceeding the levels authorized by the Commission.

It is also noted that the application of the most advanced scientific methods and procedures does not necessarily negate negligence, nor does the following of established practices or customs.

The existence or not of negligence in any particular case must be determined from the facts of that case, proof of custom or practice being only prima facie evidence of due care. In a case arising in Michigan and decided by the U.S. Circuit Court of Appeals for the Sixth Circuit,[82] the lessor of an oil and gas lease sued the lessee for damages for negligently acidizing an oil well, thereby causing the oil-bearing strata to become so impregnated with salt water that the leasehold was rendered worthless. It was alleged the lessee knew the limestone formation separating the oil and salt water level was only from 1.2 to 2.5 feet thick and that he should have put down a blanket of calcium chloride in the hole before the acidization was begun. The defence was that the acidization was carried out in accordance with established custom and practice in the field in which the well was located. The court held the defence unavailing, and said:

> It is conceivable that the established custom and practice might be negligence. What is usually done may be evidence of what ought to be done, but what ought to be done is fixed by a standard of reasonable prudence whether usually complied with or not. In our opinion the proof of custom was insufficient conclusively to sustain appellant's claim of immunity.[83]

If negligence is proved, liability will follow. It then becomes a matter of quantum of damages which is discussed elsewhere.

E. STATUTORY AUTHORIZATION

It appears that liability may follow the establishment of a waterflood operation in Canada if the injected water encroaches on the land of adjoining non-participating owners. To what extent then does statutory authority, or a mandatory statutory order offer a good defence against such liability? If the party carrying out the waterflooding program can establish that it was ordered under valid legislation to carry out the waterflooding program at a particular place for a specific purpose, no action will lie at Common Law for damage which is the inevitable result of carrying out the mandatory statutory order.[84] The burden of establishing that the Legislature has authorized such interference with the sub-surface property rights of other parties rests on the party asserting the right to so waterflood, and it is bound to show with sufficient clearness that the statute and order under which it acted does take away the right of action.[85] It must likewise prove that the damage complained of is an inevitable result of the carrying out of the order so authorized.[86]

In Alberta, it is significant to note that the Oil & Gas Conservation Act[87] does not contain any express provision of the type customary in Municipal Acts relieving a party, acting without negligence in pursuance

82 *Empire Oil and Refining Co.* v. *Hoyt,* 112 Fed. (2d) 35.
83 *Id.,* at 361.
84 *Metropolitan District Asylum* v. *Hill,* [1891] 6 App. Cas. 193, at 203, 208, 211.
85 30 *Halsbury's Laws* 691, (3d ed. Simonds 1955).
86 *Ante,* n. 84, at 208, 213.
87 S.A. 1957 c. 63.

of any of the various orders that may be issued thereunder, from liability for damage or loss suffered by third parties. In this regard, G. H. Bowen dealing, *inter alia,* with the applicability of the defence of statutory authority in situations such as this, noted that in United State's oil and gas legislation only the Conservation Statute of the State of California contained such a clause.[88] No such provision is contained in any of the oil and gas legislation in western Canada.

It is thus evident that the question of whether the defence of statutory authority is available to a party carrying out a waterflooding program without negligence in pursuance of statutory order, depends upon a construction of the applicable legislation as a whole.

Although the matter of pressure maintenance programs is dealt with under several headings in the Alberta Act, only two sections of the Act deal with the actual implementation of pressure maintenance programs. Under Section 37, The Oil and Gas Conservation Board, in order to prevent waste, may, *inter alia,* require repressuring, recycling or pressure maintenance programs and, incidental to such purpose, require the introduction into any pool of gas, water or other substance. Section 38 of the Act provides that no scheme for repressuring, recycling or pressure maintenance and no substance or other form of energy shall be injected in any well unless and until the scheme or injection program is approved by an Order of the Board.

While the wording of these sections varies significantly, it has been suggested that on a construction of the Act as a whole, orders issued under these sections are of the same legal effect and will each cloak a party implementing a program in compliance with an Order thereunder with immunity from liability.[89]

There seems little doubt but that a direct unequivocable Order of the Board under Section 37 of the Alberta Act in pursuance of its powers to prevent waste, requiring an operator to initiate and carry out a waterflooding operation as part of a pressure maintenance program would cloak a party carrying out such operations in the manner directed and without negligence with immunity from liability for its actions. An operator so directed would have no alternative but to comply with the Order or face prosecution under the penalty provisions of the Act.[90] The immunity will only follow, however, if the damage complained of can be said to be the inevitable result of the waterflooding operations ordered.[91]

While the inevitability test respecting the damage would not appear to be a problem in a situation where an operator acts in compliance with a detailed Order under Section 37 prescribing the quantities and rates of water to be injected and the wells to be used for injection purposes, an operator would most certainly have to contend with the question if the Order under Section 37 is so general in scope that it allows an operator wide discretion in the manner of the implementation and execution of the program.

The law in such a case would be as stated by Lord Sumner in *Quebec Railway L. H. & P. Co.* v. *Vandry*:

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88 *Ante,* n. 27, at 334.

89 E. M. Bredin, *Legal Liability for Waterflooding in Petroleum Reservoirs in Alberta,* 1 Alta. L. Rev. 516, at 530, 531.

90 Sections 131 - 133.

91 *Ibid.*

> Such powers are not in themselves charters to commit torts and to damage third persons at large, but that which is necessarily incidental to the exercise of the statutory authority is held to have been authorized by implication and therefore it is not the foundation of a cause of action in favour of strangers, since otherwise the application of the general law would defeat the purpose of the enactment. The Legislature, which could have excepted the application of the general law in express terms, must be deemed to have done so by implication in such cases. Nor need a use of the power conferred, which is injurious to others, be excluded from the ambit of that which is necessarily incidental to their enjoyment merely because the progress of discovery or invention reveals some extraordinary means of preventing that injury to others which has previously been unavoidable.[92]

While the Alberta Conservation Board has passed several Orders under Section 37 none has taken the form of the clear mandatory Order described herein. The Orders passed under Section 37 to date have been termed as Miscellaneous Board Orders, an example of which is Board Order No. Misc. 5913.[93] The feature distinguishing this type of Order from the type of Order previously described is that under these Orders an operator has the option of shutting in his well rather than comply with the Order to implement a pressure maintenance program. Specifically, Board Order No. Misc. 5913 provides that an operator's wells will be shut-in unless it either participates in a pressure maintenance program to be conceived by the operators and approved by an Order of the Board under Section 38 or can show cause why its well or wells should not be included in the pressure maintenance program.

An essential element in a defence of statutory authority is the mandatory aspect of the legislation in question. Can an operator who has the right to either proceed with the implementation of a waterflooding scheme or not proceed and run the risk of having his wells shut-in be said to be under a mandatory direction to participate in the waterflooding scheme? This "permissive" as opposed to "mandatory" effect of legislation was stated by Lord Watson in the leading case of *Metropolitan Asylum District Managers* v. *Hill,* as follows:

> Where the terms of the Statute are not imperative but permissive, when it is left to the discretion of the persons in power to determine whether the general powers committed to them shall be put into execution or not, I think the fair inference is that the Legislature intended that discretion to be exercised in strict conformity with private rights and did not intend to confer licence to commit nuisance in any place which might be selected for the purpose.[94]

The classification of Board Order No. Misc. 5913 as either permissive or mandatory is difficult. The authority to act under such an Order is made subject to the approval under the permissive provisions of Section 38 of a plan or scheme to be conceived by the operator. If, in fact, the Board, to prevent waste, believed the implementation of waterflooding operations under a pressure maintenance scheme was necessary, it could, after appropriate hearings, have issued an Order under Section 37 requiring the operators to take direct and immediate action on a scheme or program detailed in the Order. Again, bearing in mind the powers granted the Board under Section 37, can it be said that the form of Board Order No. Misc. 5913, with the alternative course provided therein, clearly indicates an intention to support an interference with the property rights of others?

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92 [1920] 1 W.W.R. 901, at 904, 905.

93 Alberta Regulations 168/59, Alberta Gazette May 30, 1959, at 324.

94 [1891] 6 App. Cas. 193, at 203, 208, 211.

The author of *Rogers Canadian Municipal Corporations* commented on the restrictive interpretation to be given legislation in this situation, as follows:

> It is clear that the enabling legislation must be in express terms authorizing the act complained of and it cannot be implied unless it is clear that the powers given by such legislation could not otherwise have been reasonably and efficiently exercised. So statutory powers should not be understood as authorizing the creation of a nuisance or injury unless the statute expressly so states. This is merely another way of saying that, if the authority is in general terms merely, it may be inferred from the general scope and provisions of the statute that the powers conferred are not to be exercised to the prejudice of private rights.[95]

It is submitted that an Order such as Board Order No. Misc. 5913 merely establishes a standard of conduct—a minimum reservoir pressure that must be maintained—if an operator is to continue taking production from the reservoir and thus contribute to the lowering of reservoir pressure. If this is correct, it follows that an operator proceeding to implement or join in the implementation of a pressure maintenance scheme required by a Board Order similar to Board Order No. Misc. 5913 under Section 37, but approved under Section 38, is in the same position as an operator who merely obtains an Order under Section 38 approving a scheme for pressure maintenance. It would appear that this result more obviously follows in the case of an operator who does not exhaust the exclusionary steps available to him under an Order such as Board Order No. Misc. 5913 and the Act to remain outside the operation of the pressure maintenance program ordered.

If, therefore, an Order such as Board Order No. Misc. 5913 passed under Sections 37 and 38 is to be treated as would any other Order under Section 38 approving a scheme, can the permissive features of Orders under these Sections be overridden on a reading of the Act as a whole?

It has been said that Board Orders under Section 37 similar to Board Order No. Misc. 5913 afford a defence of statutory authority assuming the operation authorized is carried out without negligence. Moreover, it has also been argued that a party carrying out a waterflooding program without negligence, in full compliance with an Order passed under Section 38 should be entitled to the defence of statutory authority. The provisions of Section 38(a), 119 and 125 of the Act are offered as support for this latter conclusion.[96]

The first of these Sections, Section 38(a), provides that the performance of any Act required to be done pursuant to an Order under Section 37 or permitted under an Order approved under Section 38, cannot be restrained by an injunction or other Court Order. This Section, construed together with Section 119 has been viewed as doing away with the rights possessed at common law by a party suffering damage and substituting alternative rights therefor. Section 119 provides the grounds for and procedure to be followed in the lodging of an appeal from a Board Order to the Appellate Division of the Supreme Court of Alberta. It is argued that in view of the provisions of Section 119 the remedy of a party suffering damage from waterflooding operations carried out in pursuance of a pressure maintenance scheme approved by an Order under Section 38 is an appeal under Section 119. In this connection, however, it should be noted that Section 119 limits an appeal from an

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95 Volume 2, at 1262.

96 *Ante*, n. 62.

Order under Section 38 to questions pertaining to jurisdiction or law. Mere loss or damage alone will not support an appeal as one might expect if in fact the Legislature intended this Section to be an alternative to common law rights of action. Section 119, furthermore, restricts appeals of Orders under Section 37 to persons who "appeared or have been represented before the Board upon the hearing at which the Order or direction have been made" and thus might well exclude several classes of aggrieved parties who for one reason or another were not represented at the original hearing.

It is submitted that from a review of these two sections and the restricted and limited relief offered thereunder, it is apparent that the Legislature never intended that these Sections would replace the common law rights of a party who suffered injury or loss by reason of waterflooding operations instituted under a pressure maintenance program either approved under Section 38 or ordered under Section 37 in the form of Board Order No. Misc. 5913.

Section 125, the last of the Sections offered in support of the argument that an Operator carrying out a waterflood program pursuant to an Order under Section 38, would escape liability for his actions, deals with the matter of compensation. In most cases where the Legislature authorizes intereference with the rights of private persons, provision is made for the payment of compensation to persons injured and such compensation is generally provided to be in lieu of the rights of actions otherwise possessed by such parties. The absence of clauses providing for compensation to parties injured, while not conclusive evidence of the intent of the Legislature, is said to afford grounds for believing that the intention of the Legislature was not that the act complained of should be done at all events but only that it should be done if it could be done without injuries to others.[97]

Briefly, Section 125 provides that the Conservation Board, upon the direction of the Lieutenant-Governor in Council, will proceed to prepare a scheme or schemes for the provision of compensation for persons who are injured by any reason of any Conservation Order made pursuant to this Act. At the outset, therefore, it is noted that compensation is not as of right but only at the discretion of the Lieutenant-Governor in Council. While at first glance the Section appears to indicate the intention of the Legislature to relieve a party acting in compliance with an Order approved under Section 38 from liability, the Section goes on to provide that in any compensation scheme provision will be made for the apportionment of liability between all parties by whom compensation is payable. The Section further grants the Board the right to levy taxes on the assessed value of all oil and gas property to which a compensation scheme applies to assure the payment of compensation. The Conservation Board thus assumes the roles of judge, jury and collection agency. While the Legislature, in framing this Section, may well have foreseen claims by third parties suffering injury from waterflooding operations carried out in pursuance of pressure maintenance programs approved by the Board under Section 38 or ordered under Section 37, the scope of the Section suggests that it was more likely intended to

97 30 *Halsbury's Laws* 692 (3d ed. Simonds 1955).

provide a ready mechanism to handle catastrophes such as an Atlantic No. 1 blowout that became the subject of a special Act in 1949.[98]

As mentioned, the simplest and most direct manner in which the Legislature could have indicated an intention to relieve an operator from liability for damages inevitably flowing from waterflooding operations carried out without negligence in pursuance of a pressure maintenance program approved by the Board by an Order under Section 38, or ordered by an Order under Section 37 similar to Board No. Misc. 5913 would have been to include a specific provision in the Act to this effect similar to that appearing in the Conservation statute of the State of California,[99] or Section 529 of the British Columbia Municipal Act.[100] An intention to relieve an operator from liability could also have been indicated by the inclusion in the Act of provisions stripping an aggrieved party of any common law right of action it might have had as a result of the implementation by adjoining owners of such approved waterflooding operations. Again, this intention might have been inferred if the Act provided for the compensation of any party suffering loss or damage as a result of such operations. For the reasons noted above, however, it is submitted that Sections 38(a), 119 and 125 do not afford this relief.

It is further submitted that an operator remains liable at common law for damage or loss caused to the owners of adjoining lands resulting from waterflooding operations carried out without negligence in pursuance of a pressure maintenance scheme initiated under an Order under Section 37 similar to Board Order No. Misc. 5913 or approved under an Order under Section 38. To view the Alberta Oil and Gas Conservation Act, and particularly the provisions we have dealt with herein, in a light more favourable to the operator carrying out such operations would, it is submitted, be to read a meaning into the Act not intended by the Legislature.

Such a reading and interpretation of the relevant provisions would violate the presumption against implicit alteration of the law. As stated by Maxwell:

> One of these presumptions is that the Legislature does not intend to make any substantial alteration in the law beyond what it explicitly declares, either in express terms or by clear implication, or, in other words, beyond the immediate scope and object of the statute. In all general matters outside those limits the law remains undisturbed. It is in the last degree improbable that the Legislature would overthrow fundamental principles, infringe rights, or depart from the general system of law, without expressing its intention with irresistible clearness, and to give any such effect to general words, simply because they have a meaning that would lead thereto when used in either their widest, their usual or their natural sense, would be to give them a meaning other than that which was actually intended.[101]

In conclusion, therefore, it is submitted that if, in fact, the Legislature intended to cloak with immunity a party carrying out waterflooding operations without negligence in pursuance of a pressure maintenance program approved by an Order passed under Section 38, or ordered by

98 S.A. 1949, c. 17.

99 "No working or royalty interest owner shall be liable for any loss or damage resulting from repressuring or other operations connected with the production of oil and gas which are conducted, without negligence, pursuant to and in accordance with a co-operative or unit agreement ordered or approved by the Supervisor pursuant to this Article."

100 R.S.B.C. 1960, c. 255, s. 529: "No action arising out of, or by reason of, or in respect of, the construction, maintenance, operation, or user of any drain or ditch authorized by section 527, whether such drain or ditch now is or is hereafter constructed, shall be brought or maintained in any Court against any district municipality."

101 Maxwell, *Interpretation of Statutes*, 11th ed., at 78.

an Order under Section 37 similar to Board Order No. Misc. 5913, it could have, and would have, stated this intention in clear unequivocal terms.

F. RULE OF CAPTURE

It has been suggested that the rule of capture will be a defence to actions for trespass or conversion as a result of reservoir damage due to water flooding.[102]

It is submitted that the rule of capture has no application once enhanced recovery schemes are implemented since the natural depletion, in which the rule was developed, has been disturbed. Under the enhanced recovery schemes, the characteristics of the substances and their direction of flow changes. That enhanced recovery schemes are not normal or natural depletion methods, is indicated in *Borys* v. *C.P.R.*[103] where Lord Porter said:

> From those observations it appears that in some instances the appellant tapped (gas) sealed in a different container and used it to assist in bringing up the oil. In such a case it may well be said that the oil owners are not recovering their oil in the normal way but drawing Mr. Farquharson's (gas) from a separate receptacle.[104]

These comments of Lord Porter's concerned the case of *Farquharson* v. *Barnard-Argue-Roth-Stearns Oil and Gas Co.*[105] which in turn indicates that pumping oil is a normal production method once the pressure has declined.[106]

With respect to trespass, it has already been indicated,[107] that an incorporeal hereditament such as a *profit à prendre* is sufficient title to sustain an action for trespass.

With respect to conversion it may well be that the rule of capture will operate as a defence under natural depletion conditions but not so under enhanced recovery schemes since under these conditions it is submitted the rule has no application.

G. QUANTUM OF DAMAGES

Assuming tort liability, the question of quantum of damages is to be determined. In *Mayne & McGregor on Damages*[108] the author states:

> The two central torts affecting land are trespass and nuisance; . . . . Generally, the measure of damages is calculated the same whatever the tort, . . . It is the form of the injury and not the form of the tort which gives the important division in relation to damages . . .
>
> The normal measure of damages is the amount of the diminution of the value of the land. . . . The leading case is generally considered to be *Jones* v. *Gooday*,[109] as standing for the measure as stated and rejecting as a measure the cost of replacement and repair . . . . Lord Abinger, C. B., said he could not assent to the proposition that the Plaintiff whose soil had been taken away, was entitled to the 'amount which would be required to restore the land to its original condition. All that he is entitled to is to be compensated for the damage he has actually sustained'.
>
> Alderson, B. said that, if the Plaintiff was right, one who let sea water in on land worth 20 pounds would have to pay for excluding it by expensive engineering operations.

102 *Ante*, n. 45.
103 (1953), 7 W.W.R. (N.S.) 546.
104 *Id.*, at 561-562 (the words in parentheses are added in substitution for the word "oil" which was, it is submitted, mistakenly used by Lord Porter, as Mr. Farquharson's only interest was in "gas").
105 [1912] A.C. 864.
106 *Id.*, at 870.
107 *Ante.*, n. 6.
108 12th ed., at 635.
109 151 E.R. 985.

From the foregoing, it would appear that the principle involved in measuring the quantum of damage in the case of damage by waterflood is not dependent on the form of tort which caused the damage, but the form of injury which resulted.

The problem of assessing what those damages may be, aside from technical problems of proof, is one which has been stated many times. In the case of *Livingston* v. *Rawyards Coal Co.*,[110] Lord Blackburn stated:

> . . . Where any injury is to be compensated by damages, in settling the sum of money to be given for reparation of damages, you should, as nearly as possible, get at that sum of money which will put the party who has been injured, or who has suffered, in the same position as he would have been in if he had not sustained the wrong for which he is now getting his compensation or reparation.

In *Street on Damages*,[111] the author, after stating the above-noted principle, goes on to say:

> The application of this principle is not too difficult where the loss suffered under a particular recognized head is a pecuniary one capable of exact arithmetical calculation. To assist in making such calculation, the law often has recourse to a concept of value. Value is the dominant criterion when harm to property has to be measured[112] . . . . Where the loss suffered is pecuniary, but not capable of exact calculation, the courts still accept the principle of *restitutio in integrum* . . . In practice, a Plaintiff who proves that he has suffered a pecuniary loss does not fail because he cannot quantify it.

There do not appear to be any Canadian cases dealing with the problem of liability for loss of oil in place due to water flood operations, but in *Tidewater Oil Co.* v. *Jackson*,[113] the United States Court of Appeal, 10th Cir. was faced with the question.

The plaintiff objected to the continuance of the waterflood program and asked for an immediate order to cease and desist, and a permanent modification of Tidewater's repressuring authority and damages because Tidewater's operations were allegedly damaging the Jackson Brothers and causing waste of oil.

The Appeal Court, in upholding the trial Judge's finding that Tidewater was liable to the Jacksons for compensatory damages for loss of profits, stated as follows:

> The trial Court's judgment for compensatory damages is based upon estimated loss of profits. From competent expert testimony, the Court specifically found that when the Jacksons drilled their first well, there was approximately 677,800 barrels of gross stock tank oil in place under the lease, and recoverable through the wells ultimately drilled on the lease; that this amount of oil would have been recovered by the Jacksons, by primary and secondary recovery methods, but for the interference of the water injected by Tidewater along the boundaries of the property. The Court further found that the production of this amount of oil would have resulted in an operating profit of $1,549,400.00. The Court then found that, as a direct result of the injection by Tidewater, of salt water in the line wells along the boundaries of the tract, the Barrier lease will, in fact, produce only 477,000 barrels of oil, or a net loss of approximately 192,000 barrels attributable to the working interest in the lease. Relating this net loss of recoverable oil, in terms of operating profit, the Court specifically found the loss of realizable net profit to be $620,700.00. The Court explained that this loss was the result of increased lifting costs, due to the necessity of disposing of excessive quantities of water injected by Tidewater; the loss of fuel for the pumping wells, due to the loss of natural gas as a result of the flooding operations; the acceleration of the time when the economic limit of production from the wells on the Barrier tract would be lost; the destruction and loss of producing wells on the Barrier property; and, the loss of substantial quantities of

110 [1880] 5 App. Cas. 25, 39.
111 Street, *Principles of the Law of Damages*, (1962).
112 *Hall* v. *Barclay*, [1937] 3 All E.R. 620, 623.
113 *Ante*, n. 25.

recoverable oil under the Barrier lease, as a result of being by-passed or "watered off" by the excessive injection of salt water by Tidewater.[114]

As can be seen from the foregoing case, the Court applied the general principles of law which it is submitted are presently in force in Canada and which are set forth in *Livingston* v. *Rawyards Coal Co.*[115] It is accordingly submitted that the Courts in Canada would follow the same principles as followed in *Tidewater* v. *Jackson.*

Tidewater v. *Jackson* does not deal with the apportionment of damages recovered as between the Lessor and the Lessee. In an article by George H. Bowen[116] the author discusses this problem and points out that no decision with respect to this problem has been found. He suggests, however, it appears logical that royalty owners should participate in their Lessee's recovery on an equitable basis. It is suggested that the basis of participation where a net profit judgment has been realized by the Lessee would seem to be that the royalty owner should receive the market value of the royalty reserved to him based on the amount of oil deemed by the Court to be capable of being produced. It is suggested that the courts in Canada can well follow this reasoning.

H. CONCLUSION

In the absence of any Canadian court decision dealing directly with the question of damage caused by waterflood operations in oil and gas reservoirs; and in the absence of legislation on the question, it is necessary to examine the common law principles of tort to determine whether liability will result from such damage. Such an examination reveals that there is every likelihood of our courts finding liability.

The basic legal question in waterflood operations involves the right of one owner to use the most efficient means to obtain the greatest recovery of oil and gas from his land *vis à vis* the right of adjoining owners to enjoy the use of their lands without interference. Conservation legislation in the western provinces seems to reflect this conflict in declaring its objectives as being, on the one hand, to prevent waste and obtain the greatest possible ultimate recovery of oil and gas and, on the other hand, to protect the rights of all owners and to enable each to obtain his just and equitable share of oil and gas from a reservoir.[117] It is sometimes difficult to establish a balance between the rights of an occupier to use his land as he sees fit and the right of a neighbour to enjoy his land. In our assumed fact situation, however, it appears that enhanced recovery operations in a reservoir by waterflood is not a reasonable use of land if it causes damage to a neighbour's land.

It is possible for legislation to provide immunity for waterflooding operations. Such provisions frequently occur in Canadian statutes. No such specific provisions appear in the oil and gas legislation in western Canada. It is likely, however, that immunity would follow performance of a waterflood operation pursuant to a mandatory order made by a competent authority where the operator has no choice but to perform or face prosecution. Where the operator is faced with a lawful alternative, however, he does not have any such immunity in the absence

114 *Id.*, at 991.
115 *Ante*, n. 110.
116 *Ante*, n. 27, at 344.
117 Oil and Gas Conservation Act, R.S.S. 1965, c. 360, s. 3; Oil and Gas Conservation Act, S.A. 1957, c. 63, s. 4.

of a clear and unequivocal statutory provision providing such immunity. Neither does the rule of capture appear to offer a defence to a claim for damages caused by waterflooding.

Assuming liability, the question of quantum of damages will be determined as the amount that would put the injured party in the same position that he would have been in if he had not suffered the damages.