

*Oil and Gas Production and Conservation*

first initial flush rate of production we would soon find that the reservoir energy, which is what pushes the oil into the well bore and often to the surface, would be dissipated very quickly with the consequence that we might recover no more than 5 to 15 per cent of the oil actually in the reservoir. Conservation, therefore, really means getting out of the reservoir as much oil as it is physically possible to do by conserving and even augmenting the reservoir energy.

This is done by first defining what we mean by waste, which is more than the simple idea of just allowing the oil to spill out onto the ground, and then by setting production rates, well spacings and patterns and by ensuring that we find out as much as possible about the reservoir in order to be able to control production from it. All this involves a great deal of highly technical engineering work. The bill provides how this will be done and will authorize the minister and his department to establish producing rates, well spacings, production methods, etc.

● (5:00 p.m.)

Because of the different structure and form of an oil field compared, for instance, to a mine, the engineers very often have to work with indirect information. From time to time there will be differences of professional opinion with respect to the nature of this information and the interpretation of its meaning. Part of the duties of the proposed oil and gas committee will be to look into cases where such differences of opinions arise and to ensure that the interpretation of the information available is as satisfactory and as fair as possible to all concerned.

The bill has been drawn up in order to encourage the employment of the latest techniques in developing oil and gas fields. In particular, it seeks to encourage early unitization on a voluntary basis. Unitization is really the operation of an oil or gas field as if it were owned by only one organization; thus only the minimum number of wells required for efficient production would be drilled and, in theory at least, these wells would be located at the best possible position throughout the field. In addition, early unitization will allow the early introduction of what are known as assisted recovery methods, since it is recognized that rather than wait until the original reservoir energy has been seriously depleted before seeking to replace this energy, the employment of water or gas injection which seeks to maintain the reservoir close to its

original energy level is far more efficient and results ultimately in the recovery of more oil.

A further aspect of early unitization and the most important one from the northern viewpoint is that it will help to ensure against over-investment in production facilities. In the early days of the oil industry many more wells were drilled than were actually required to drain a given oil field. Gradually, as more experience has been gained, the number of wells drilled in new fields has been reduced, but in the older fields, of course, all that can be done is to close down some of the wells which still represent an over-investment in production facilities. Oil prices on this continent reflect in part this over-investment and the lack of knowledge at that time.

Northern oil will obviously have to compete in markets a long way from its point of production, and transportation costs will inevitably represent a significant proportion of its total delivered cost. In all probability it will have to compete, in part at least, in overseas markets. To do this it will have to be low cost oil, and we can help to achieve this by encouraging early unitization.

The bill also provides that where the committee considers the lack of unitization is contributing to waste, perhaps by failure to institute at an early stage the assisted recovery methods to which I referred earlier, it may require that the field be unitized within a specific length of time or be closed down. The unitization, however, would still depend upon the parties involved working out between them a suitable plan. Thus, although this might be termed compulsory unitization in a sense, it is not compulsory in the way this is usually understood within the industry concerned. The bill in fact strives to avoid imposing upon industry the detailed methods and, particularly, the way in which the oil and gas reservoirs in a field are to be shared by the private participants concerned. We feel this is best left to the participants.

Provision is also made for semi-compulsory unitization so that where 65 per cent of the owners in a pool have developed a unit plan, the committee may be asked to require the remaining owners to participate. If the committee, after reviewing the proposal, is in agreement, it has the authority to require such participation. The clauses in the bill providing for this can be promulgated at a later date, since we believe industry feels unitization is in its own best interests and that participants in each oil and gas field will