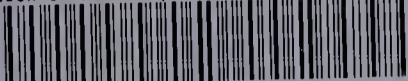


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AN HISTORICAL SKETCH  
 OF OIL AND GAS CONSERVATION  
 IN ALBERTA

An Address Given Before the Oilfield Technical Society

South Side Legion Hall, Edmonton, Alberta

June 18, 1957

by

D. P. Goodall, P.Eng., Deputy Chairman

The Petroleum and Natural Gas Conservation Board

Province of Alberta

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When Alberta and Saskatchewan were given Provincial status in 1905 the Dominion Government retained the rights to the natural resources in lieu of which these provinces were granted a subsidy.

The governments of these provinces were never satisfied with this arrangement and after years of negotiation finally in 1930 obtained full control of their resources.

Prior to 1930 the administration of oil and gas rights was under the Department of Interior, Northwest Territories and Yukon Branch. Certain regulations were established with respect to the drilling and producing operations on Crown lands. These regulations contained some provisions for the prevention of waste by exclusion of water from productive sands, proper plugging procedure, etc.

Some sections of these regulations are especially significant since the intent and phraseology is very similar to some clauses of our present day regulations.

The regulations at that time also provided for the reporting of drilling and production operations, and for the taking of samples of drill cuttings, the measurement of gas flows and other pertinent information.

The Department of Interior maintained an office in Calgary for the administration of the regulations in the western provinces. Mr. S. E. Slipper was in charge of this office in the early 1920's assisted by the late C. W. Dingman.

After the discovery of gas in the limestone in Turner Valley in 1924 the supervisory staff of the Department was increased.



Vernon Taylor took up residence in Turner Valley to supervise the operations in that area, and an office was opened in Lethbridge with George Elliot as engineer in charge to look after the southern part of the Province.

Grant Spratt assisted by R.M.S. Owen was in the Geological Department in Calgary, and Mr. Campbell looked after the chemical lab. During this period of expansion Charles Ross was Supervisory Engineer. Other engineers on the staff were William Calder, Floyd Beach, Col. Steel, Charles Dingman and T. G. Madgwick. Slipper had left the government service before this period of expansion.

Although these men had administrative authority only in connection with wells on Crown land, and the authority that they did have was inadequate to prevent gas wastage, they deserve a great deal of credit for laying a groundwork for the orderly development of our oil and gas resources.

When the Province gained full control of the natural resources in 1930 a Petroleum and Natural Gas Division under the Department of Lands and Mines was set up under authority of the Oil and Gas Wells Act. Some of the technical staff of the Department of Interior were hired by the Provincial Government for the Petroleum and Natural Gas Division. Mr. Calder became first director of the Division.

Under authority of the Oil and Gas Wells Act government engineers were able, for the first time, to regulate drilling and production of wells on Freehold land.



After a trip to the Medicine Hat field Mr. Calder wrote a scathing report on the deplorable condition of wells in the City of Medicine Hat. He reported many wells in defective condition allowing surface waters to penetrate the gas sand. Gas seeping from wells and from corroded mains had permeated the ground creating a serious fire hazard and the gas reserve of the City was being wasted at an alarming rate. He reported that in many places within the City by merely punching a hole in the ground with a stick and lighting a match a gas flare would appear.

Under Government pressure most of the dangerous wells were repaired or abandoned by the City and a program of repairs and replacement of service lines was started.

At this time gas wastage of a more serious nature was taking place in Turner Valley. The tremendous amount of gas being flared in Turner Valley had not been considered seriously by the public at large until 1931 when the City of Calgary made application to the Board of Public Utility Commissioners for a reduction in the rate paid for gas. Engineers' reports entered as evidence at the Board's hearings regarding Turner Valley gas production were startling to say the least. Engineers estimated wastage in Turner Valley from the discovery in 1924 to 1931 to be in the order of 236 to 260 billion cubic feet or 1/2 to 1/3 of the estimated total reserve of the field. Evidence brought out in this hearing probably caused the Government of the Province to realize that legislation on the books was inadequate to handle the situation. At any rate a special advisory committee was formed to study the matter and make recommendations. The committee consisted of representatives of the government and industry.





Following recommendations of the advisory committee an independent engineer was engaged to work with government and industry. The government hired F. P. Fisher of Mount Vernon, Ohio, and the independent producers appointed S. J. Davies to represent them. R. O. Armstrong was appointed by Imperial Oil. These three men formed a technical subcommittee, of which Fisher was Chairman, to work out an equitable method of conserving the gas resources of Turner Valley so that the burden would be fair to both producers and consumers.

The Technical Committee recommended a reservoir pressure survey of the field and metered flow measurements of all wells. These tests were carried out during the summer of 1932. Up to this time wells had been flowing practically wide open and most operators considered it dangerous to close a well in. A few closed pressure tests had been made by government engineers on some of Royalite's wells in the area where draw-downs had been heaviest, but practically nothing was known about the reservoir pressure in other parts of the field.

As a conservation measure the Technical Committee proposed that the field be unitized and that production be cut from the current rate of 500 million cubic feet a day to 100 million cubic feet and that production be taken only from the wells capable of producing at the lowest G.O.R.

It was considered that complete unitization of the field whereby one company would be operator would be impossible to achieve owing to the concentration of wells drilled by some of the independent operators for which they would want compensation and to the lack of confidence of some producers in the company most suitable to act as the unit operator.



The committee recommended a voluntary agreement whereby each operator would operate its own property, direct its sales, conduct its own relationship with its royalty holders and would merely subscribe to the agreement for the purpose of providing for the division of the total gross revenue from the production of the most efficient wells. A central organization was to be limited to a technical staff to issue instructions as to which wells would produce and at what pressure, and provide for the distribution of the gross earnings. Needless to say the determination of the fair division of the gross revenue was a major problem. The committee recommended the division of gross revenue be made on the basis of the former earning power of each property under the open flow producing conditions prevailing prior to the agreement, but provided for a compensating premium for isolated wells with un-drilled acreage around them and for a discount for small leases with closely spaced wells.

It was considered that since conservation of this gas would benefit the Canadian Western Natural Gas Company and its consumers that they should bear part of the cost.

A negotiated increase of .04¢ per M. at the field gate was agreed upon and it was proposed that this would be used to compensate producers who would have wells shut-in since this was about the equivalent of the net value of gas being sold under contract at that time.

Full agreement to this proposal was never reached and it finally fell by the wayside. In the meantime the Legislature had, in



the spring of 1932, passed the Turner Valley Gas Conservation Act to be administered by a three man board to be known as the Turner Valley Gas Conservation Board. A Board was appointed with Arthur A. Carpenter as Chairman. The Board carried out the tests on wells as recommended by the technical committee and issued its first order restricting production of wells early in 1932. An appeal against the first order was entered in Supreme Court by Spooner Oils. The courts upheld the authority of the Act to restrict production, but declared the section of the Act providing for an assessment on production to be ultra vires of the Provincial authority. Pending decision of the court, further orders restricting production were issued as ministerial orders under authority of the Oil and Gas Wells Act. These orders had the objective of reducing production to a maximum of 200 million cubic feet per day from its current producing rate of 450 million. The anticipated reduction was never quite accomplished, but the field total production was cut back to about 50% of the former rate. At the reduced rate the liquid recovery was more efficient and resulted in an average reduction of only about 20% in the separator recovery.

The Turner Valley Gas Conservation Board did not function after the field tests were completed and the Petroleum and Natural Gas Division carried on with an attempt at restriction of gas wastage in the field. For several years wells were restricted to 40% of their open flow as determined under test each year.

Imperial's subsidiary, Royalite Oil Company, had the exclusive contract to supply gas for Canadian Western so all gas produced by the independents which was not required for field use was flared in the field.



Canadian Western's maximum winter requirement from Turner Valley at that time was about 65 million cubic feet per day. In order to give a better balance between summer and winter take from the field, Canadian Western installed compressors at Bow Island and used the Bow Island field for seasonal storage for its system. Although this project reduced the summer wastage of gas from the Royalite operated wells it had little effect on the overall waste problem.

The discovery of crude oil at Turner Valley Royalites No. 1 well in 1936 started an intensive development of the west flank of the Turner Valley structure. It was immediately realized that further indiscriminate production of the gas cap could not be tolerated since it would seriously reduce the ultimate recovery of the crude reserves of the field.

In September 1937 government officials discussed the situation with the Oil and Gas Association in Calgary, and the situation was considered to be serious enough for immediate action. Several meetings were called early in 1938 between government officials and representatives of industry to try and work out a scheme for shutting in the gas cap which would be satisfactory to both producers and plant operators. It soon became evident that such an agreement would not be completed and that proper conservation could only be achieved through compulsory legislation.

A conservation act was drafted and presented to a special committee of industry for criticism and suggestions on May 3rd. After some revision the Oil and Gas Conservation Act was passed by the Legislature and came into force on July 1st, 1938.





The Petroleum and Natural Gas Conservation Board appointed under authority of this Act held its first meeting in Calgary on July 4th with W. F. Knode as Chairman and C. W. Dingman and F. G. Cottle as Board Members. Mr. Knode was a Texan and a newcomer on the Alberta scene. He had previously been employed by the Texas Railroad Commission and had taken part in the introduction of conservation measures in the East Texas Field.

Mr. Dingman was of course thoroughly familiar with conditions in Alberta having served for many years in the administration of the oil and gas regulations for both the Dominion and Provincial Governments, and at the time of his appointment to the Board was Director of the Oil and Gas Division of the Department of Lands and Mines.

Mr. Cottle was a Chartered Accountant and also a Provincial Government employee before his appointment to the Board.

The Board took office in the Telephone Building in Calgary and staffed it with one engineer, Millard Kempt; an accountant, Jim Kraft; and two stenographers. It also established an office in Turner Valley with Gordon Connell in charge with three assistant engineers - Andy Lees, Herb Bagnall and L. D. Publicover.

For nearly a year prior to the formation of the Board, crude oil production in Turner Valley exceeded the market requirements. First the pipe line facilities between the Valley and Calgary reached their capacity and production had to be cut to the pipe line throughput plus some trucking transport. Soon after the pipe line bottleneck was corrected the Calgary refinery reached the peak of its capacity and production was governed by buyers' quotas.



Your speaker was resident engineer for the Petroleum and Natural Gas Division in Turner Valley during this period, having taken over the position previously held by Vern Taylor when he joined the staff of Royalite. With the assistance of Gordon Connell we attempted to allocate the crude market among the wells on the basis of well potentials. Each new well was given a five day flow test and its potential was based on the open flow of the last day. The purchaser calculated the sharing position and posted field quotas. Several testing methods were tried in an effort to find one that would give the well productive capabilities. The producers, however, usually found some means of producing on test at a rate much higher than the true capacity of the well.

When the Board took over the proration problem it carried on with the well potential method of prorating production, but made each well produce through a two inch choke during the test. In the meantime a survey was made of the bottom hole pressures of wells in preparation of a more equitable method of allocation.

The Board's first formula for proration of production to market demand was based on 25% potential, 25% gas-oil ratio, 25% bottom hole pressure and 25% on acreage. During the first year of the Board's regime both the potential of the field and the market for crude increased rapidly, and the Board was so busy trying to keep the crude oil situation in hand that it had little time for the problem of gas conservation.

A few months after the Board took office, the Oil and Gas Conservation Act was repealed and a new act called the Oil and Gas Resources Conservation Act was passed by the Legislature. This new Act widened the powers of the Board, and among other things provided for the Board, with consent of the Lieutenant Governor in Council, to administer the Oil and



Gas Wells Act over the entire Province and for the cost of this administration to be paid by the Provincial Treasurer.

The Board took over this responsibility in August of that year and Mr. F. K. Beach and myself were transferred from the staff of the Department to that of the Board. The geological and chemical laboratories were also taken over by the Board.

I had been carrying out inspections of wells under the Department in parts of the Province other than Turner Valley, and Mr. Beach had been Office Engineer keeping records of drilling and production in the Edmonton office. When he moved to Calgary he brought the Department's well records with him and supervised the maintenance of these records in the Board, prepared the Schedule of Wells for publication, besides carrying on with special engineering projects for the Board until his retirement in 1949.

Although the Board had taken over the responsibility of administering the regulations under the Oil and Gas Wells Act for the rest of the Province its chief headache was still Turner Valley.

In September of 1938 the Board issued its first order respecting gas cap production in the field. This order was based on the market demand for gas and any well not connected to a market was prohibited from producing. The gas allowables were set on a monthly basis. Acreage was a factor in the proration formula and the maximum acreage assignable to any well was set at 160 acres. The well's potential at two thirds closed pressure was also used in the allowable formula. By this time the absorption plants were taking gas from many of the crude oil wells, and the cut back of gas cap gas was not too great an economic loss.



After the outbreak of the Second Great War the market demand for oil soon exceeded production in Turner Valley and allowables were set on an M.E.R. basis. Several changes had been made in the proportion formula. Potential was still used as a factor although several methods of determining well potentials had been used, none of which proved very satisfactory.

In December 1940 the Board invited the operators of Turner Valley to submit suggestions for a revision of the formula of allocation of oil production. As a result of several discussions with industry the Board did change its method of allocation. Early in 1941 the Oil Controller requested the Board to increase the Turner Valley allotment from 22,000 barrels per day to 25,000 barrels per day as a war measure. The new allowables were thereafter issued as conservation legal allowables plus the extra war emergency allowables. The conservation legal allowable was based on

1. a sustained producing capacity of each well as determined by carrying out a seven day test through whichever bean size the operator considered most efficient,
2. gas-oil ratio,
3. bottom hole pressure.

The allocation was made by first setting a minimum allotment based on well depth. This ranged from 30 barrels/day for a 5,000 foot well to 63 barrels/day for a 7,000 foot well.

After subtracting the minimum allotment from the field quota the residual was allocated according to the allocation formula. The minimum allotment, therefore, played the same role in the allocation formula as our present economic allowable.





Throughout the year 1941 the efficient oil productive rate of the field went down and gas-oil ratios climbed. By the end of the year the Board had reduced the conservation legal allotment from 22,000 barrels a day to 16,500 barrels, but at the insistence of the Oil Controller for a war emergency allotment the total field allotment was kept at 26,000 barrels a day. It was quite obvious to the Board that the field was producing at too high a rate and in October of that year the Board engaged Dr. George Granger Brown, Professor of Chemical Engineering in the University of Michigan to make a study of Turner Valley and recommend a producing rate for the field.

The Board received Dr. Brown's report in January of 1942. He recommended, "as a fundamental principle of equitable treatment of leaseholders that a maximum volume rate of withdrawal of reservoir fluid per acre per day be applied to all wells in the Turner Valley field".

His recommended maximum withdrawal rate was 25 barrels per acre per day of reservoir fluid measured at reservoir conditions of pressure and temperature. This rate applied to all wells in the field including the gas cap.

The Brown plan was accepted by industry and introduced first in the north and central part of the field, but by August was in full operation.

The Brown plan of setting allowables was a happy solution for Turner Valley where there was such a wide range of gas-oil ratios and pressures in wells throughout the field.



This method of prorating production still is used for Turner Valley but is not used in any other field in the Province, although the present M.P.R. formula with the gas-oil ratio and water-oil ratio penalties does approach the same idea of equal reservoir withdrawal. Dr. Brown's recommended maximum rate of 25 barrels per acre per day appears to have been about right for it has not been changed to the present time. In fact there have been very few modifications in the entire plan as presented by Dr. Brown in 1942.

The introduction of the Brown plan had the effect of reducing gas-oil ratios and establishing more equitable rates of withdrawal throughout the field. With the continued development of the crude production the gas wastage of the field was again becoming a major problem by 1943. In February of that year the Board engaged Dr. Weymouth to work out a plan of gas conservation in Turner Valley.

At that time, as a war emergency measure, the absorption plants were attempting to produce a minimum of 330 barrels of isobutane per day for which production 88 million cubic feet of gas had to be supplied to the absorption plants in the field.

Weymouth proposed for the sake of more efficient gathering of gas from the crude wells that the field be divided into three parts. British American would gather and process gas in the south, and Gas and Oil Products in the Hartell area, and the central and north end would go to Royalite.

Royalite would move its No. 2 plant from the Hartell area to consolidate it with the No. 1 plant. Return residue gas lines would be laid for lease and drilling fuel, compressors would be installed to



gather low pressure raw gas for the plants, and residue gas from B.A. and G.O.P. would be piped to Royalite's scrubbing plant and sold to Canadian Western. Any surplus gas was to be returned to the gas cap. Since the project as planned by Weymouth would ensure the continued production of isobutane which was urgently needed for aviation gasoline, it was considered as an emergency war measure and the Board had the support of industry and government in getting the project on the road.

The main framework of Weymouth's plan was agreed to by industry and work started immediately in getting the main installations in. Injection wells were chosen for putting surplus gas back in the gas cap, compressors were ordered and set up as soon as they could be supplied and some parts of the project were in operation before the final negotiations for the accounting and cost allocation were completed.

Hearings were carried on for many days by the Board of Public Utility Commissioners and by the Natural Gas Utilities Board before the project was finalized. The original and fairly simple plan proposed by Dr. Weymouth was altered in many respects as negotiations proceeded. The final result was so complicated with respect to the accounting that few people were entirely conversant with the set up. It involved stored gas, conserved gas, reproduced stored gas, scrubbed and raw gas, high and low pressure gas, all with different values involved in compressor charges, gathering costs, scrubbing costs and what have you.

\*In order to make a well available for use as an input well the Board made use of a provision of the Act providing for the compulsory purchase of a well. Carleton No. 1 was purchased by the Board. The Board



still owns this well and it is still in use for storing gas in the gas cap. Its gas allowable is produced by other wells in the area and it has produced sufficient revenue to pay off the purchase price and show a profit.

\*When the project was started both the Conservation Board and the Board of Public Utility Commissioners were involved. The proposed plan concerned not only production and reinjection of gas to the reservoir, etc., which was of chief interest to the Conservation Board, but the price to be paid for products and services, and compensation for losses incurred as a result of the project which came under the authority of the Board of Public Utility Commissioners. In order to avoid duplication of evidence in hearings and to facilitate the proceedings respecting this project a separate Board was set up under a newly legislated Act called the Natural Gas Utilities Act. Mr. G. M. Blackstock, Chairman of the Board of Public Utility Commissioners, became Chairman of the Gas Utility Board, and the Chairman of the Conservation Board also sat on that Board as a second member. The Conservation Board was, therefore, not too greatly involved in the economics of the operation of the gas conservation plan. The really difficult decisions were left in the capable hands of G. M. Blackstock.

This was really the end of an era for Turner Valley for with the discovery of oil at Leduc in 1947 followed soon after by Redwater, Turner Valley was practically forgotten by all but a few for the next ten years.

With the new discoveries the Conservation Board's responsibilities increased faster than its staff.





The Board's major problem during the early development of Leduc was the taming of Atlantic No. 3 well. The story of this disaster has been told many times, and I do not intend to retell it here other than to say the Board took over operations, engaged "Tip" Moroney from Imperial Oil to supervise the job, drilled two directional relief wells, salvaged and marketed 949,229 barrels of oil from the wild well and finally after seven months of uncontrolled flow followed by a fire the well was killed and plugged.

The rapid increase of oil production following the Devonian reef discoveries of 1947 and 1948 again saturated the market and the two major purchasers could handle only a portion of the well allowables set by the Board for the various pools. The situation was further aggravated by the wide seasonal variation in demand for crude in the Prairie Provinces.

The purchasers take from each pool was not uniform since the demand for the lighter gravity crude such as the Leduc production was in greater demand for the western refinery requirements. This caused inequities between pools and Redwater production was cut back in a greater proportion than Leduc. There were also inequities within pools since the requirements of the purchasers for crude under contract was not in equal proportion to the pool allowables.

During 1950 the Board made an intensive study of the various methods of setting pool allowables and methods of prorating production to market requirements in the United States. It held a number of meetings with the industry and with the advice and co-operation of industry introduced a system of proration to market demand.



At the same time a formula was devised for setting of maximum permissive rates of production for pools. The maximum permissive rate (M.P.R.) formula was introduced for the purpose of establishing maximum allowables for wells in new pools. It took into consideration the following factors

1. acreage
2. pay thickness
3. porosity, connate water, shrinkage
4. nature of reservoir drive
5. expected recovery
6. life of the pool
7. degree of development of the pool
8. reservoir pressure
9. producing gas-oil ratio and water-oil ratio

After sufficient production history had been obtained for any pool to determine its maximum efficient rate of production (M.E.R.) it was intended that use of the M.P.R. formula would be discontinued for that pool and an M.E.R. rate of production would be established.

A basic economic allowable was also established for each pool as a minimum. The purpose of the economic allowable was to permit wells in pools of low potential to produce at a rate which would pay out drilling costs and operating expenses.

In order to determine the market for crude the purchasers would submit monthly nominations for the following month's requirements. The total economic allowable for all wells in the Province would be deducted



from the total market demand and the residual would be distributed among the various pools in which the M.P.R. or M.E.R. exceeded the economic allowable for the pool in the ratio to which its M.P.R. or M.E.R. bore to the total M.P.R. or M.E.R. of the pools.

The first Board order allocating production to market demand by this method was issued in December 1950 and without modifications the same method has been employed by the Board since that time.

Public hearings are now held twice yearly to determine the proper M.P.R. for the various pools in the Province.

For the past seven years the Board has been involved in numerous lengthy hearings respecting gas export and has granted three major permits for the export of gas from the Province pursuant to its responsibilities under the Oil and Gas Resources Preservation Act. The Board has also had the responsibility of making recommendations to the Minister under the Pipe Line Act for the construction of both oil and gas lines in the Province. These decisions have also involved some lengthy public hearings.

Since its inception in 1938 the Oil and Gas Resources Conservation Act and the Drilling and Production Regulations have had many revisions in order to keep up with changing conditions in the industry.

In 1950 the 1938 Act was replaced by a new Act and again during the 1957 session of the Legislature another Act was passed to replace the 1950 Conservation Act. The new Act, to be known as the Oil and Gas Conservation Act, comes into force on July 1st, 1957. By this Act the Board's name is changed from The Petroleum and Natural Gas Conservation Board to the Oil and Gas Conservation Board.



During the first ten years of the Board's nineteen years of operation there were numerous changes in the Board's membership.

As previously mentioned the first Chairman appointed to the Board was Mr. Knode. After his resignation in 1939 the Board carried on with Mr. Dingman as Deputy Chairman until the appointment of Mr. R. E. Allen as Chairman in 1940. After the entry of the United States in the war Mr. Allen was drafted to the office of the Petroleum Coordinator for War at Washington by the United States Government. About the time of Mr. Allen's departure Mr. Cottle, then Deputy Chairman, also left to take a position with the Oil Controller in Toronto. Mr. J. J. Frawley, the third member, was also away at this time and two of the Board's staff, Mr. Kemp and Mr. Craft were appointed temporary members to carry on the Board's business until permanent appointments could be made. Dr. K. A. Clark was appointed as Deputy Chairman to fill in for a short time in the summer of 1941 with Mr. J. J. Frawley as the third Board Member. Frawley later became Deputy Chairman and in 1942 was appointed Chairman, and Mr. Kemp who had been a temporary member of the Board for some time received a permanent appointment.

In September 1943 Mr. Frawley left the Board to return to the Attorney General's Department where he had previously been employed as solicitor.

Following Mr. Frawley's departure Dr. E. H. Boomer of the University of Alberta was appointed Chairman and Mr. G. W. Northfield was Deputy Chairman.





In 1944 both Mr. Northfield and Mr. Kemp severed their connections with the Board and their positions were filled by appointment of A. G. Bailey as Deputy Chairman and D. P. Goodall as the third Board Member.

Following the untimely death of Dr. Boomer in October 1945 Mr. Bailey became Chairman and the Board carried on as a two man Board until February 1948.

Mr. Bailey left the Board in May 1947 to take a position in the oil industry and the late R. M. Moffat, the Board's accountant, was appointed temporary member to make up a quorum on the Board with D. P. Goodall remaining permanent member.

In February 1948 the Board was again brought up to full complement of a three-man Board by the appointment of I. N. McKinnon, then Assistant Deputy Minister of Lands and Mines, as Chairman, D. P. Goodall as Deputy Chairman, and Dr. G. W. Govier of the engineering faculty of the University of Alberta as the third Member of the Board.

There have been no changes in the Board's membership since 1948.

In order to keep up with the growth of the industry the Board has increased its staff to where it now employs about 125 people in its Calgary office. It maintains nine field offices, and an office and a laboratory in Edmonton. The laboratory for analysis of water, oil and gas is established in the Engineering Building of the University.

Of the entire staff of about 185 approximately 30% are university graduates, mostly engineers. Its field staff consists of about 50% engineers and the rest are made up of trained technicians and clerical help.



The Board has always experienced a rapid turn-over of technical staff, but has been fortunate in retaining some key men to direct the operations of the various departments. Its graduates are scattered all over the world, but there is always a good representation of ex-Conservation Board men at any gathering of men of the oil and gas industry in this Province. Some of the Conservation Board graduates have attained top positions with their companies, and others are well on their way to the top. We in the Board are always pleased to see these men attain responsible positions in the industry for we believe it will help maintain good relationships and better understanding for the promotion of conservation and orderly development of our oil and gas resources.





