

ARCHIVES

Newsletter of the Petroleum History Society

March 2022; Volume XXXII, Number 1

P.H.S. COVID Edition - Part 3

Looking Forward to the End (of COVID) - Again

We are all hoping that we are seeing the end of the COVID-19 pandemic. It has impacted every aspect of our lives – personal and professional. The P.H.S. has certainly been in this situation with our luncheons terminated and even our annual meetings converted to an e-mail-based exercise. I managed to get one issue of *Archives* off to you in December 2020. The one that you are reading now is the second major push to get some historical material into your hands.

We have just passed what must be considered the major anniversary for the Canadian petroleum industry – but you'd never know it from the press or from anyone else for that matter. Most of this issue of *Archives* is therefore dedicated to a look back at the Leduc discovery of February 13, 1947 – 75 years ago. That event fundamentally changed Alberta and Canada - as you will re-discover in the multifaceted look that I have assembled for your viewing pleasure.

It would be nice to think that something like the Leduc discovery could happen again. The 1986 Caroline find had some charm but not the scope. Perhaps the oil sands fit that description although played out in slow motion. – *Your Editor*

We had anticipated that the Petroleum History Society would resume operations by this point. Obviously that hasn't happened. We decided to err on the side of prudence. Stay tuned. We shall meet again! Thanks for your continuing support.

In the meantime, please visit our website at www.petroleumhistory.ca and continue to feast upon the voluminous material that is preserved there. Micky, whose creation this is, has provided instructions to guide you in searching for specific items or topics. Alternatively, just wander through the back issues of *Archives*, Doug Cass's bibliography or Micky's compilation of Old Companies. You are sure to find lots of interesting things. Or just read this issue!

The Bull Wheel



Call for contributions and speakers: The Petroleum History Society values your input. If you have an article that you'd like to see in *Archives* or if you have a talk that you'd like to give, please get a hold of us. Contact President Clint Tippett at the address indicated on page 3.

Free Student Memberships Available: The Petroleum History Society offers free membership to full-time students until the end of the year in which they graduate. They will receive the same benefits as regular members – *Archives* newsletters and invitations to our events. Membership applications are available at: www.petroleumhistory.ca/about/index.htm#join.

P.H.S. Dues: Our Society waived dues for 2020 and 2021 because our activities have been limited due to the COVID pandemic. In light of continuing restrictions and our reluctance to rekindle our luncheon program because of doubtful attendance, dues will likely also be waived for 2022 but this is to be established. Two years credit has been added to everyone's membership past their most recent paid renewal. If you need clarification on this, please contact us. Hopefully we will be in a position to raid your wallets for the 2023 membership year.

Donations to the P.H.S.: 2021 was, of course, a very quiet year for our Society so we had little in the way of expenditures or membership income. We did, however, receive a couple of donations. Thanks to Tako Koning for his. And to Barrel Oil Corp. via Josh Groberman for a very generous top-up to our financial reserves. Our challenge now is to spend these monies on projects that are worthy of the trust that our members have placed in us.

P.H.S. Board: The end of March marks the time when the P.H.S. holds its annual election. P.H.S. Vice-President Bill McLellan is coordinating the slate for this year's exercise and we have recently been in contact with the membership in this regard.

Projects: The P.H.S. Board is open to suggestions for projects that support the preservation and communication of Canadian petroleum history. Some funds are available. Please take the initiative and send us a description of what you think should be undertaken or supported.

Public Service on Old Companies: P.H.S. Treasurer Micky Gulless routinely receives requests from individuals and organizations about old share certificates – Are they valid? Are they worth anything? And what is their background? Micky spends considerable amount of time doing research on these topics although actual valuation, where appropriate, is sometimes left to the brokerage community. In 2021 Micky looked after 66 such queries. The results are incorporated into the alphabetical listings of "Old Companies" in our website so if you have a question about an old company – be sure to look there first. Thanks to Micky for this aspect of her contributions devoted to the P.H.S. and the historical community.

P.H.S. Bibliography of Canadian Petroleum History: P.H.S. Director Doug Cass recently completed an update to the bibliography and Micky has posted it to the P.H.S. website. It is now 1193 pages in length!. Thanks to Doug for this continuing initiative.

Historical Calendar: P.H.S. award winner Randal Kabatoff and his company Soul of Canada produced a new petroleum historical calendar for 2022. Cost was \$20.00 plus taxes and shipping. It was entitled "Petroleum Pioneers". P.H.S Member and Auditor Tom Field worked with Randal to offer this rich historical item to our membership in December 2021. Congratulations to Randal for the creation of this new work for his portfolio and to Tom for helping Randal out with the sales. Other 2022 calendars from Soul of Canada were "Work Horses" and "Ranches and Rodeos". It should be noted that in the past Randal has asked the P.H.S. to be involved in this annual project and has included our logo in the calendar. If you would like to pitch in or if you have any ideas for commentary and pictures for one or more of the months in future years, please get in contact with us and Randal.

Conferences update:

The 23rd World Petroleum Congress took place in Houston December 5-9, 2021. Alberta Government officials represented the province and made their pitches.

The 24th World Petroleum Congress is scheduled for September 17-23, 2023, here in Calgary. As reported earlier, the Turner Valley Oilfield Society is hoping to run a field trip to the Turner Valley Gas Plant as a part of the program with a recovery stop at the Eau Claire Distillery afterwards.

Petroleum History Institute – Annual Symposium in Santa Barbara, California – May 17-19, 2022. Theme is "The Birthplace of both Offshore Oil Production and the Modern Environmental Movement".

Global Energy Show in Calgary, Alberta – June 7-9, 2022. After multiple delays it looks like these dates should work. The broadening of their mandate to include all forms of energy – fossil and renewable - should make the event bigger and more interesting.

Society for Industrial Archeology – Annual Conference in Portland, Oregon – June 9-12, 2022.

International History, Philosophy and Science Teaching Group, Biennial Conference in Calgary Alberta (University of Calgary) – July 3-7, 2022.

International Committee for the Conservation of Industrial Heritage, Annual Congress in Montreal, Quebec – August 28 to September 3, 2022. Theme "Industrial Heritage Reloaded".

International History of Geology (INHIGEO) – Annual Congress in Les Eyzies-de-Tayac, France – September 16-26, 2022.

Editorial Comment: Please note that unless otherwise indicated, all contents of this newsletter have been created or assembled by P.H.S. President and *Archives* Editor Clinton Tippet.

Archives is published approximately eight times a year by the Petroleum History Society for Society members.

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Back issues are archived on our website at <http://www.petroleumhistory.ca/>

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PETROLEUM HISTORY SOCIETY 2020 AWARDS

As initially communicated on December 31, 2021, the Petroleum History Society is pleased to announce the winners of its 2020 slate of awards. It is the aspiration of the Society, pending favourable developments related to the pandemic, that these award winners be honoured at a future annual meeting, hopefully in 2023, along with our previously-announced winners for 2019 and our upcoming winners for 2021 and 2022. Stay tuned.

Congratulations to these five important contributors to the preservation and communication of Canadian petroleum industry history!

BOOK OF THE YEAR AWARD FOR 2020

To: Donald J. Savoie

For: “*Thanks for the Business*” – K. C. Irving, Arthur Irving, and the story of Irving Oil”. Nimbus Publishing. 342 p.

Donald Savoie is a professor at the University of Moncton in New Brunswick. He is the author of numerous books and articles concerning political and economic issues in the Maritime Provinces and in Canada. He is a Fellow of the Royal Society of Canada (1992) and an Officer of the Order of Canada (1993).

ARTICLE OF THE YEAR AWARD FOR 2020

To: Sean Kheraj

For: “*A History of Oil Spills on Long-Distance Pipelines in Canada*”. The Canadian Historical Review, v. 101, pp. 161-191.

Dr. Kheraj is an Associate Professor in the Department of History at York University, Toronto, Ontario. His focus areas are Canadian and environmental history.

MULTIMEDIA AWARD FOR 2020

To: Peter Tertzakian

For: “*Energyphile*” – a website encompassing pictures, stories, vignettes and interactive stories related to the evolution of mankind’s use of all forms of energy.

Peter is a well-known petroleum industry analyst and author associated with the ARC Energy Research Institute, Calgary, Alberta. His insights into current events and the energy transition are highly valued in industry, government and academia. The *Energyphile* website is supplemented by the book “The Investor Visit and Other Stories – Disruption, Denial and Transition in the Energy Business”. For more information, visit www.energyphile.org.

PRESERVATION AWARD FOR 2020

To: The Petroleum History Institute

For: The publication of numerous articles concerning Canadian petroleum history.

The Petroleum History Institute is an organization based in Oil City, Pennsylvania that pursues the history, heritage and development of the modern oil industry. Since 2000 it has annually published the journal "*Oil-Industry History*" that contains articles, presentation abstracts, book reviews, P.H.I. organizational business and meeting summaries. The group has held its annual symposium in Canada on two occasions – Oil Springs, Ontario in 2008 and St. John, New Brunswick in 2019 - and has honoured several Canadian historians and industry contributors. For more information visit www.petroleumhistory.org.

LIFETIME ACHIEVEMENT AWARD FOR 2020

To: Gary May

For: Outstanding contributions through research and publications to our understanding of the early history of the petroleum industry in Ontario and its roles in the growth of its global counterparts.

Gary May is based in Windsor, Ontario. He is the author of a number of significant books about the early Ontario petroleum industry including "*Hard Oiler – The Story of Early Canadians' Quest for Oil at Home and Abroad*" (1998 and 2021), "*The Scent of Oil – a Nicklos/Perkins Family Saga*" (2011), "*A Hard Oiler Love Story – the Lives of Amy and Amos Barnes*" (2013) and "*Groundbreaker – How the brilliant inventions of Leo Ranney transformed water and energy technology*" (2013). Gary's latest book, *Crude Genius (The Making of an International Oil Baron)*, will be released in 2022. For more information, visit @garymayauthor on Facebook.



Shell Automotive fleet - Seismic explosives truck, 1950's. Courtesy Shell Canada.

COMMEMORATING THE 75TH ANNIVERSARY OF THE DISCOVERY OF THE LEDUC FIELD IN FEBRUARY, 1947

February 13, 1947 marked a turning point for Alberta and for Canada. Up until that time, Canada's petroleum industry had been small with only a fraction of the nation's petroleum requirements being met by domestic production. The Ontario oil patch had shrunk to the level of a minor player after almost a century of declining production. Alberta's Turner Valley Field had peaked during the recently-concluded Second World War. Despite sustained efforts to find new sources of domestic supply, disappointment followed disappointment and the search seemed to be nearing an end.

Leduc changed all of that. Almost overnight the initial find was followed up both locally and regionally and the spreads of productive acreage blossomed. Tremendous new production capabilities appeared – and indeed the regulators had to introduce limits on both field and well flow rates. Prorating was the order of the day. Railways and pipelines had to be run at full capacity and new, expanding markets across the continent had to be cultivated and accessed. It was almost too much of a good thing and indeed explorers were “put on ice” as their skills were no longer needed in the huge surge of reserve delineation and production that followed.

This article will not even try to be a proper retrospective on all the implications that the Leduc discovery had. That work is hopefully still to come.

We can, however, touch on this important aspect of Canadian petroleum history in three ways. We will have looks at:

Part A. The discovery and its immediate aftermath.

Part B. What we understand today about Leduc.

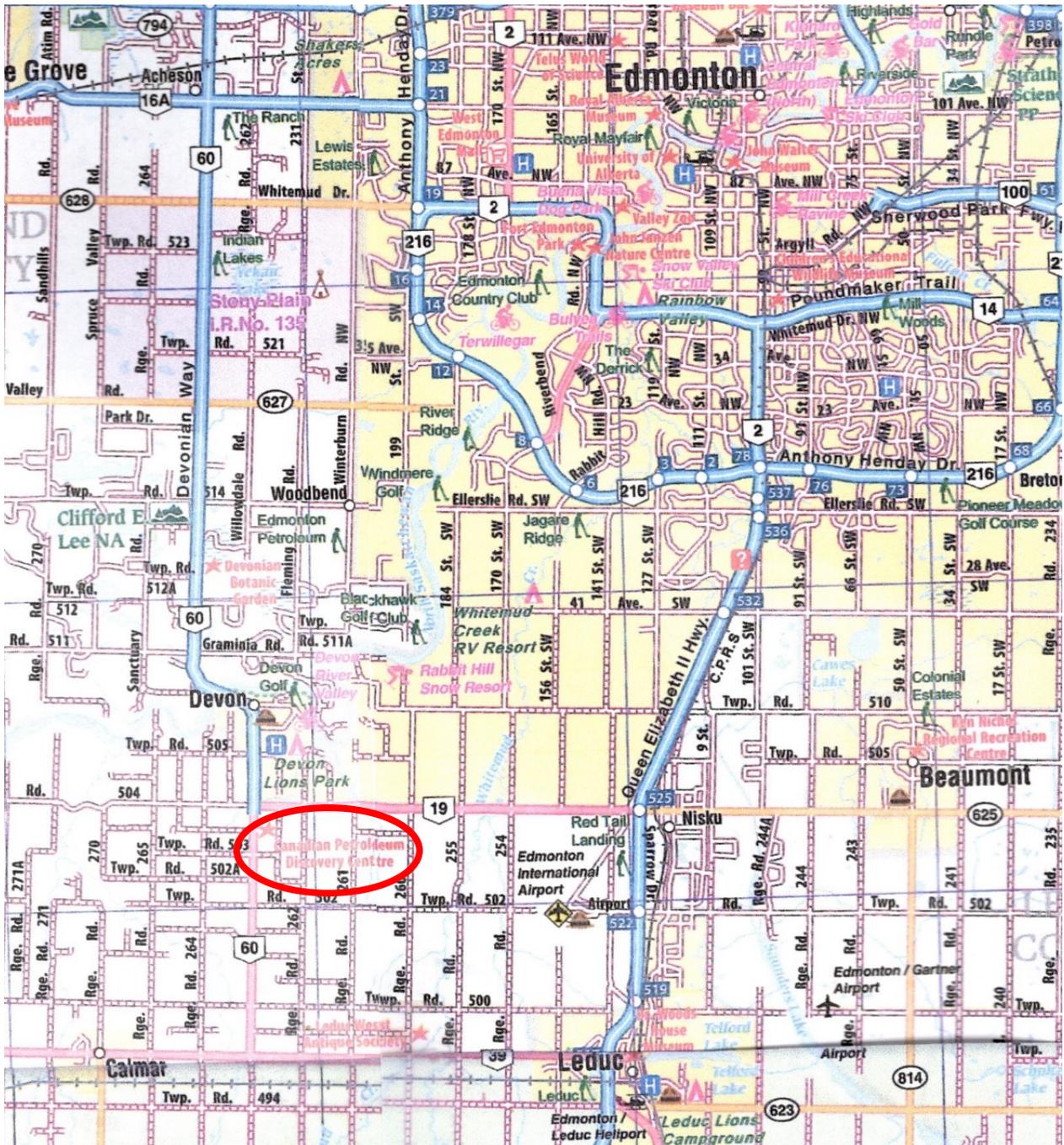
Part C. Some of the key players (although there are too many to name including many past and current members of the Petroleum History Society such as award-winner Dan Claypool).

Readers are referred to the books listed on page 10 for many additional details and perspectives.

LEDUC AND IMPERIAL – AN ENDURING MYTH AND PUZZLE

The story has been repeated down through the ages of Canadian petroleum geology lore that Imperial Oil drilled 133 dry holes in a row before finding the Leduc gusher. Although sounding heroic this claim strains credibility. As far as I know, it has never been documented. Indeed of the numerous “dry holes” drilled, many must have had producible hydrocarbons in them but were probably deemed to be non-commercial at the time. If we had a list we could check locations and uncover what subsequent activity in the basin meant for these wells. Surely Imperial drilled at least some of them as “stratigraphic tests” – i.e. not really intended as exploration wells on a prospect. And whose company lets you drill 133 dry holes anyways?

LEDUC – THE SETTING



Highway map of the Edmonton-Leduc-Devon area. The discovery well for the Leduc Field was south of Devon and west of Nisku. It is indicated on this map by the location of the Canadian Petroleum Discovery Centre (now the Canadian Energy Museum) in the red circle. At that time Leduc, est. 1891, was a small town on the Calgary and Edmonton Railway. Devon was only established in the aftermath of the discovery as a home for Imperial Oil employees working on the field. Nisku has grown as a major regional oil field supply base only since the establishment of its Industrial Park in 1972.

PART A. THE DISCOVERY AND ITS IMMEDIATE AFTERMATH

From "AS REPORTED IN THE HERALD" – text compiled by Allan Connery, 1982, 253 p.

February 14, 1947, as reported from Leduc:

"Imperial Leduc No. 1, 18 miles southwest of Edmonton, is performing with high promise, after kicking off at 4 p.m. Thursday, and is now entitled to be called an oil well, probably an oil well of the highest order.

The well made its debut in somewhat spectacular fashion, snorting and puffing with great bursts of gas and watery oil. They put a flame to the pipe then and the flame rose 30 feet in the air as the well belched only black smoke. With professional perfection it blew a dense black ring in a perfect circle, a ring 30 feet in diameter which rose 50 feet in the air and hung there for several minutes, as the monster puffed and heaved, struggling for breath.

It seemed for a time like the newborn oil well must expire as the flame died to a flicker and for almost an hour the life went weak and the flame went out. Five hundred shivering spectators climbed into their cars and drove away across the frigid plain, blanketed deep in snow.

When all but a few stragglers had left, the new well snorted again. It belched and then roared as the gas burst out and the flare shot skyward almost to a level with the hundred foot derrick. It was an oil well and no one doubted it.

Imperial officials are still reluctant to say too much about their new well, but anyone could see them working hard at efforts of restraint.

The fact is Imperial has found an oil field at last, after 19 years of effort and after an expenditure of \$17,000,000. Since 1939 the company has spent in excess of \$13,000,000, according to figures released today.

In the last 10 years Imperial has drilled 114 wildcat wells and has done almost half the total of all geological work carried out in Western Canada. It took that to hit the jack-pot – as indeed it appears to be.

Veteran Turner Valley oil men say this well compares with crude oil wells in that remarkable field.

Walker Taylor, Imperial's western manager, stressed the need for oil in Canada, a country which produces only 11 per cent of its consumption. He especially stressed the need for oil on the prairies, where high freight costs boost the cost of gasoline. He said that new fields were not being found in the States fast enough to keep up with the rate of depletion. As a result we have had to take the crumbs, whatever type of oil, we could get and be thankful for that.

Follow-up February 13, 1948

One year ago today Imperial Oil Ltd. Struck pay dirt in its Imperial Leduc No. 1. All indications were that a new oil field had been discovered. Today the most optimistic predictions of a year ago stand justified.

An area of 8,100 acres has been proven up as oil land. Today 41 wells are pouring out rich liquid into tanks, stemming the tide of U.S. imports and halting the flow of U.S. dollars southward. Imperial has completed 29 producers and has still to strike its first failure. Independents have completed twelve producers. Imperial, with another 14 wells located, is going full steam ahead.

While more and more wells swell the Leduc field Imperial is rushing work on a 4,000 to 6,000 barrel-a-day refinery in Edmonton, 20 miles away. The plant is being removed from Whitehorse, Yukon.

Meanwhile, Leduc's yield of 5,000 barrels a day is coming south to Calgary.

The development at Leduc in one year has been phenomenal. Already more than half a million barrels of oil have been produced. Turner Valley in its history has produced nearly 90,000,000 barrels, but Imperial estimates of Leduc make it just as large. Calculated recoverable reserves are 100,000,000 barrels."

IMPACTS OF LEDUC OVER THE FOLLOWING DECADE

The impacts of the Leduc discovery are expressed in many ways as is illustrated in the following figures. Figure captions contain additional explanations.

- A1. The initial excitement is portrayed by this industry publication.
- A2. The map shows how the field looked after it was partly developed.
- A3. The spread of oil fields in Alberta mainly sparked by the discovery at Leduc.
- A4. Petroleum industry expenditures by category after Leduc.
- A5. Petroleum-related royalties paid in Alberta following Leduc.
- A6. Shares of Alberta population income by sector following Leduc.
- A7. Tank cars filled with Alberta crude heading for B.C.
- A8. Destination for crude as oil production expanded. By inference, areas that previously supplied Alberta and adjacent areas, for example the American West and Mid-West, were displaced. Canada's balance of payments was also greatly improved.
- A9. How to drill dry holes in the midst of success. The shape and extent of the Leduc reef was not well known and was ultimately established through a technique called "feeling in the dark". A result was that some companies drilled dry holes because their locations were "off reef" and penetrated either a thick section of shale or at least reef that was below the oil-water contact.
- A10. Happy drillers given the abundance of work.
- A11. Analysis of the number of wells drilled and footages in the Leduc Field as a proportion of total Alberta – showing that as Leduc matured and other field were discovered, Leduc settled into a period of less drilling and more passive production. Remaining marginal locations would not have been economic given the risks involved in drilling them and the fact that oil originally present might have already been drained by adjacent producers.
- A12. Growth of reserves and production following Leduc.
- A13. Table showing number of wells and average production. As noted, constraints on production actually kept per well production down to levels like 50 barrels per day that must have verged on uneconomic. Total pool production was also limited.

KEY LEDUC-RELATED REFERENCES

Breen, D.H. 1993. Alberta's Petroleum Industry and the Conservation Board. University of Alberta Press and Energy Resources Conservation Board, 800 p. Critical portion is Chapter 5 – The Leduc Discovery and the New Regulatory Environment, pp. 244-317.

Gould, E. 1976. Oil – The History of Canada's Oil and Gas Industry. Hancock House Publishers, 288 p. Critical portion is Chapter 8 – After Leduc: The Dynamic Decade, pp. 98-109.

Gussow, W.C. (Chair and Editor) 1962. Regional Geological Cross Sections of the Western Canada Sedimentary Basin. The Alberta Society of Petroleum Geologists and the Geological Association of Canada. One panel wall display.

Hanson, E.J. 1958. Dynamic Decade – The Evolution and Effects of the Oil Industry in Alberta. McClelland and Stewart, 314 p. Critical portion is Chapter 7 – Leduc, pp. 66-83.

Hilborn, J.D. (editor) 1968. Dusters and Gushers – The Canadian Oil and Gas Industry. Pitt Publishing Co. Ltd. 278 p.

Kerr, A. 1986. Atlantic No. 3. Self-published, 226 p.

Kerr, A. 1991. Leduc. Self-published, 312 p.

Kerr, A. 1994. Redwater. Self-published, 385 p.



We generally take for granted the network of paved and well-maintained roads that we have these days – and forget that it wasn't always that way. Prior to the prosperity brought by petroleum production, roads were often muddy and unreliable. An assist from your friendly neighborhood tow truck operator was frequently needed – in this case near Leduc. Note the Esso gas station sign in the background (left). "Esso" is, of course, a trademark of Imperial Oil. It means S.O. or Standard Oil, the U.S. parent company of Imperial oil.

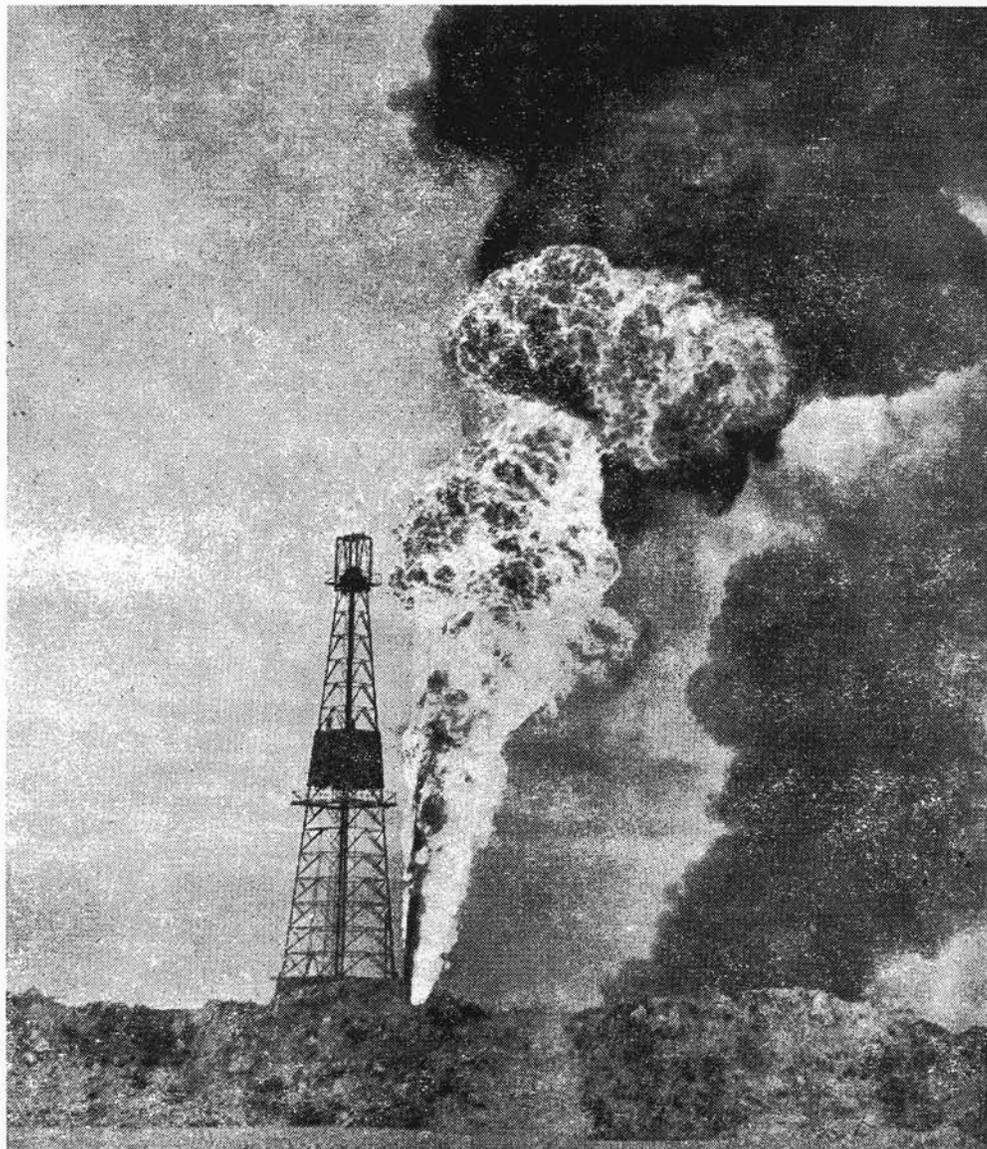
MINING OIL FINANCE
Western Examiner

Vol. XXI. No. 42

THE WESTERN EXAMINER, CALGARY, SATURDAY, FEB. 22, 1947

Price 10 Cents

At Birth of New Alberta Oil Field



IMPERIAL LEDUC No. 1 WELL—Discovery for a second major Alberta oil field, blowing out its huge billow of burning oil and heavy smoke when the well was completed as a big producer last week.—Photo by H. Pollard, Calgary

GLENBOW ARCHIVES NA-789-80

Figure A1. Announcing the big news in February 1947. Classic production test picture at the discovery well with berm in the foreground, taken by Harry Pollard.

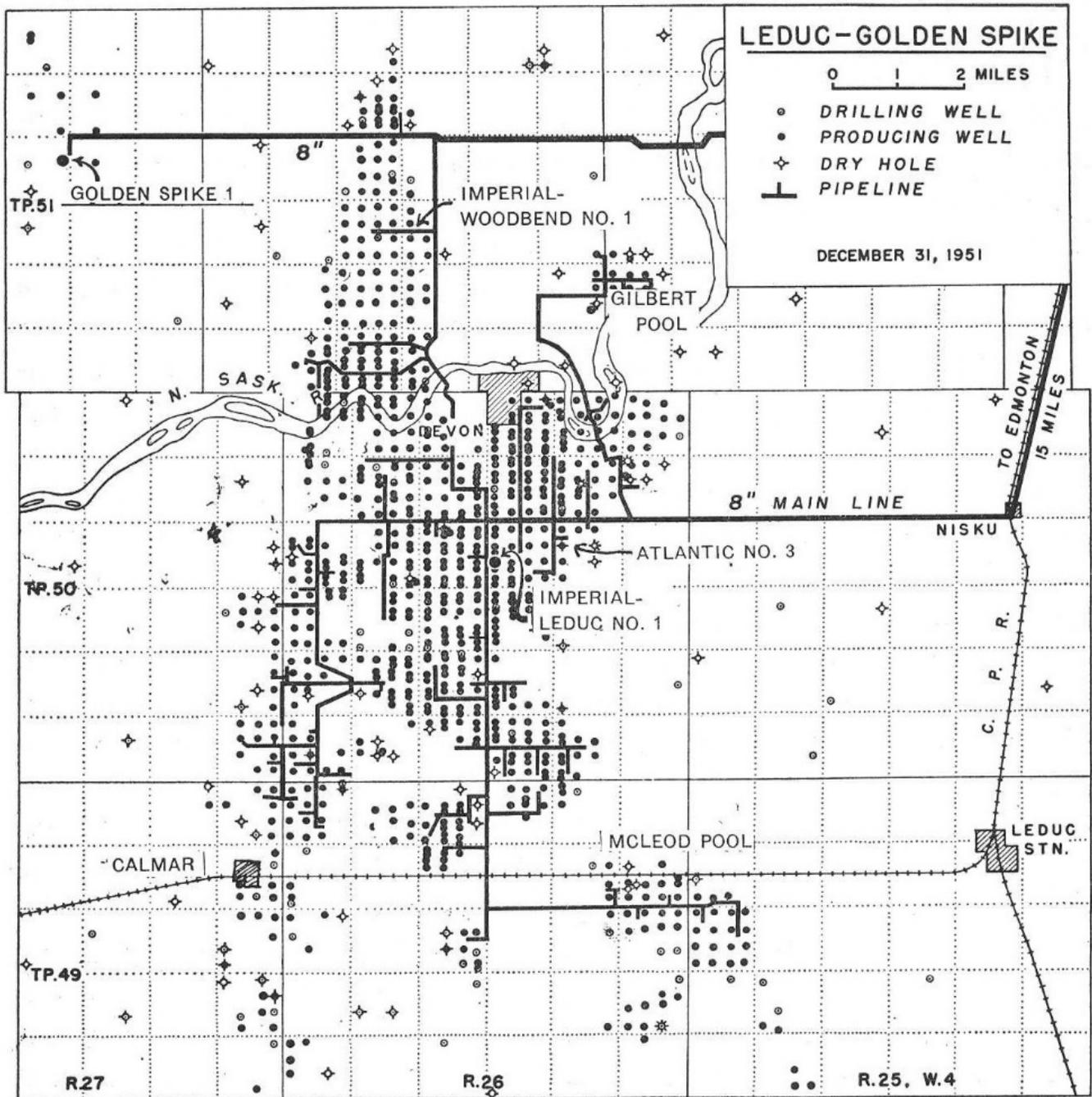


Figure A2. The Leduc-Woodbend and Golden Spike fields in 1951 (from Hanson 1958, Figure 16, p. 71). As governed by regulation, oil pools were drilled up on a 40 acre spacing (16 wells per square mile), centered on each LSD (legal subdivision). This map is useful for surface reference but it does not indicate which formation is being produced at each location. Wells were drilled for just one, for example the Leduc (D3). Where both formations were productive, two wells were drilled per LSD, one for each. In the areas off the main concentration of wells, the McLeod and Gilbert pools were in the Cretaceous whereas the extremely prolific Golden Spike pool, considered to be a separate field, was in the D3. Note that most production was funneled through the 8 inch pipeline to the railhead at Nisku. Subsurface formations are named for adjacent geographical locations such as Leduc, Nisku and Calmar.

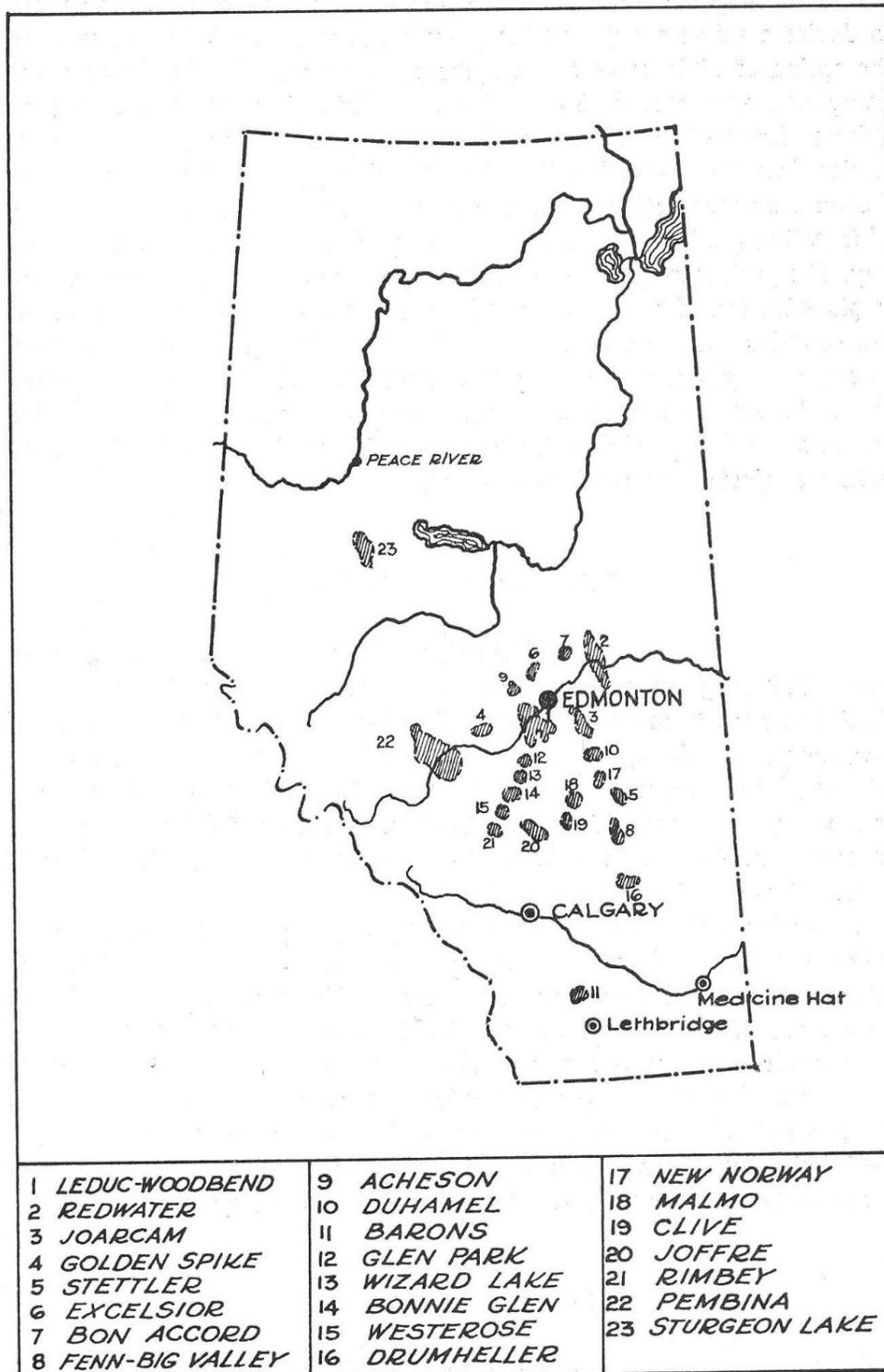


Figure A3. Main oil fields discovered in Alberta, 1947-1953 (from Hanson 1958, Figure 25, p. 95). A similar distribution exists for natural gas fields. Most fields were in the Devonian part of the section but a few, like Pembina in the Cretaceous, were not. The charm of the Western Canada Sedimentary Basin is the presence of hydrocarbon accumulations in many levels of the sequence that has led to the expression that it is a basin the “keeps on giving”. Failure in one objective was often offset by success in another layer, whether intentionally or by accident.

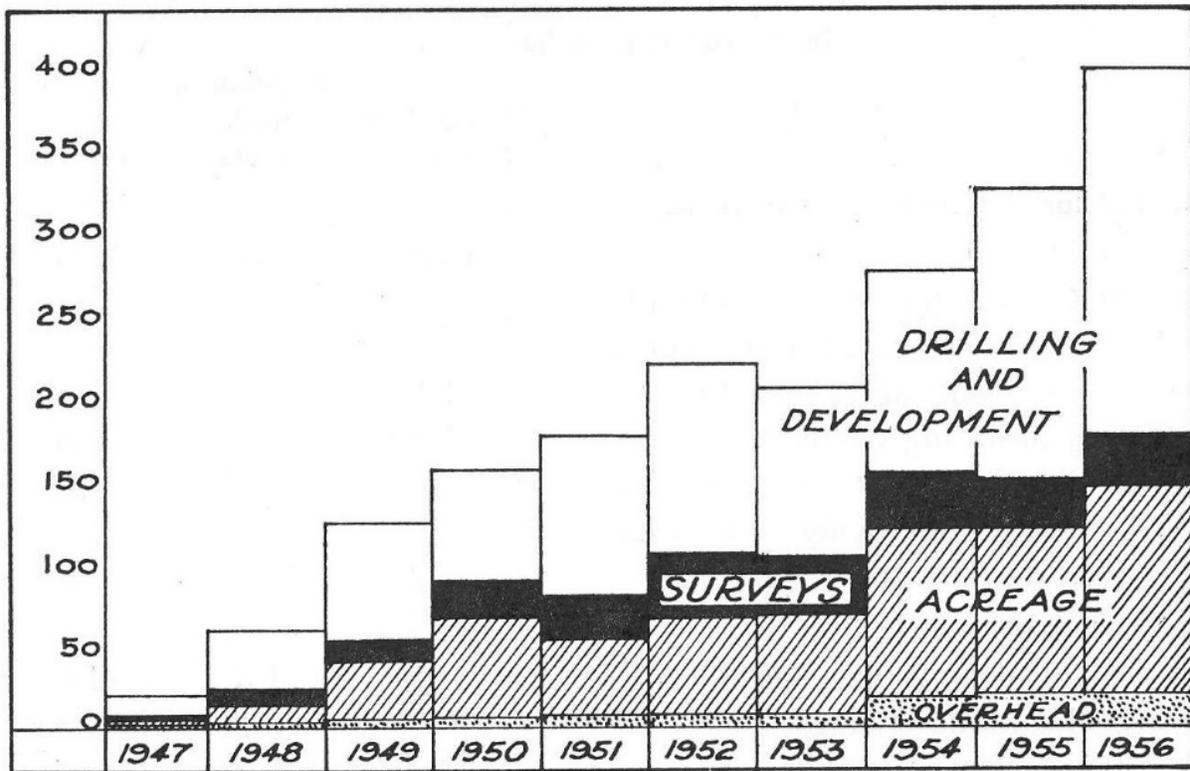


Figure A4. Estimated new investment in petroleum production in Alberta 1947-1956 (millions of dollars) (from Hanson 1958, Figure 38, p. 137).

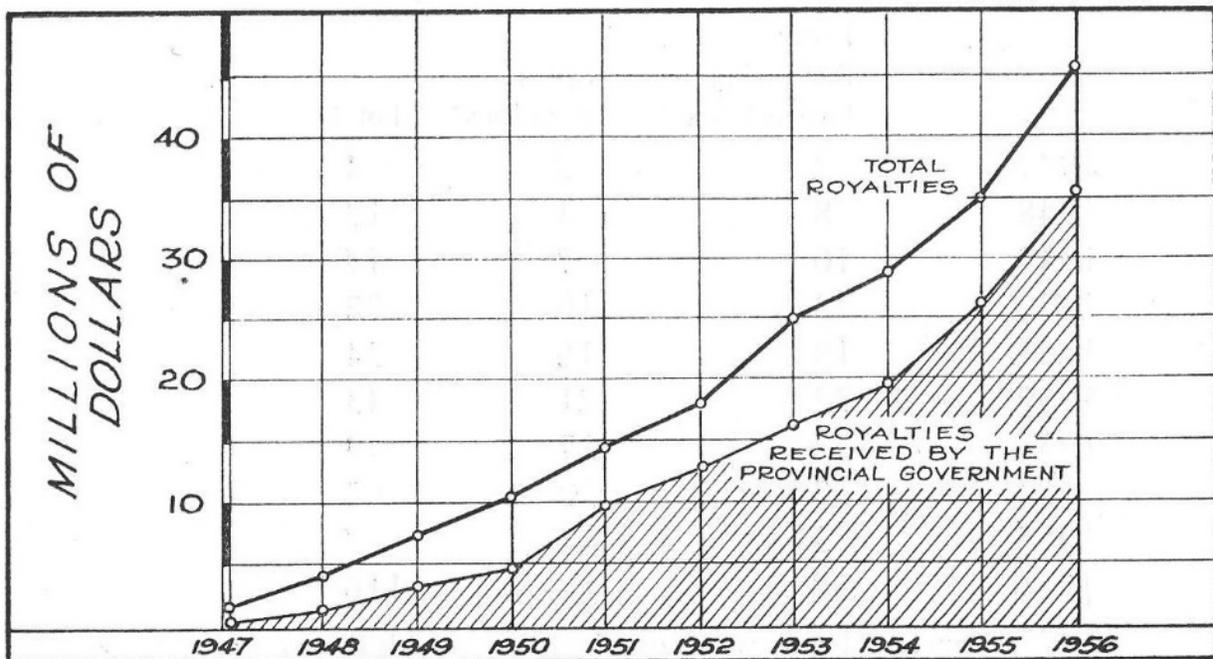


Figure A5. Royalties from crude oil and natural gas production in Alberta, 1947-1956 (from Hanson 1958, Figure 45, p. 181).

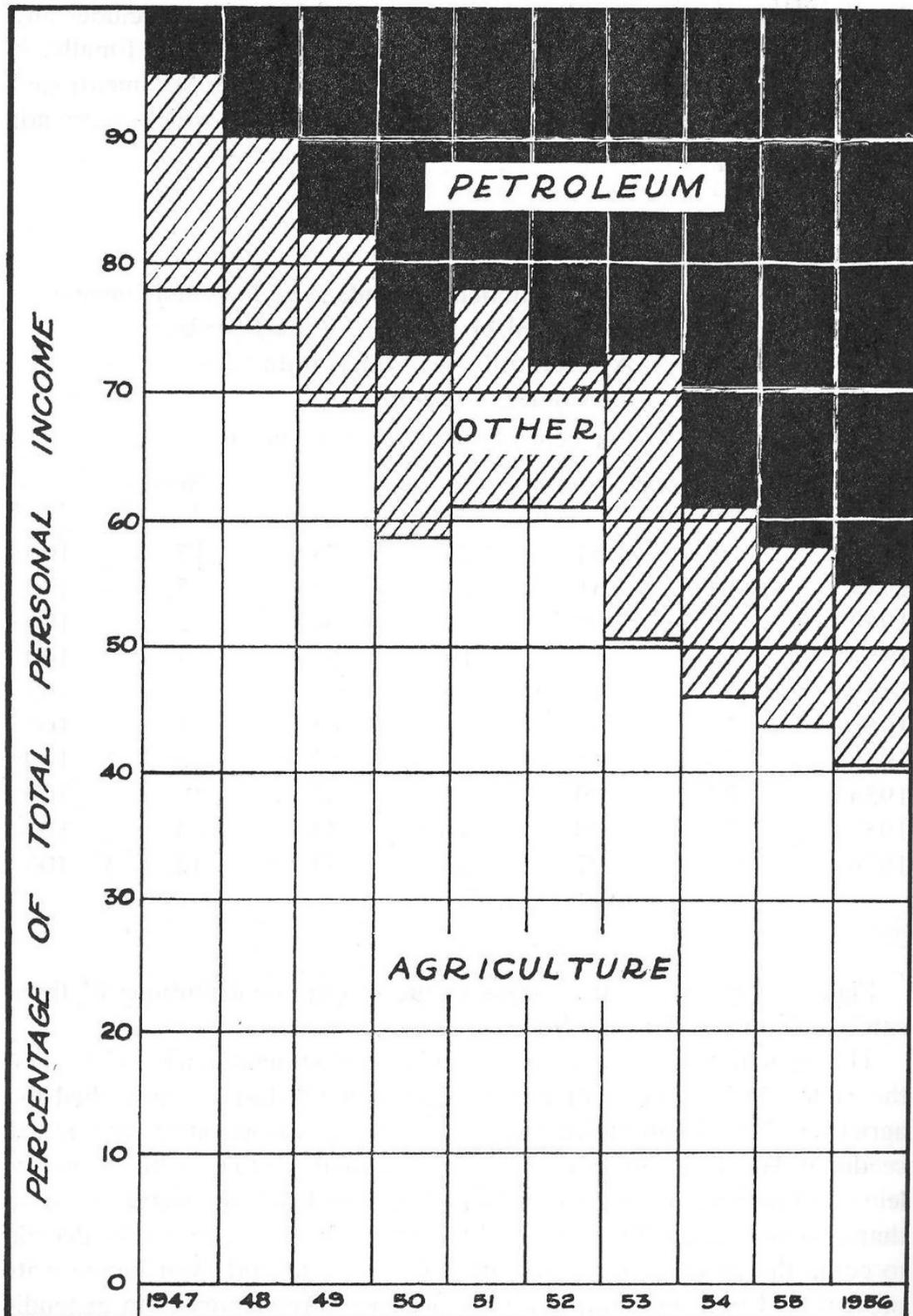


Figure A6. Estimated percentage of personal income generated in Alberta by petroleum, agricultural and other industries, 1947-1956 (from Hanson 1958, Figure 55, p. 260).



Figure A7. Imperial Oil used trains to deliver the first volumes of Alberta crude to the West Coast in the Fall of 1952, a year before the TransMountain crude oil pipeline system to the coast was completed (Photo: Glenbow Archives IP-2c-16).

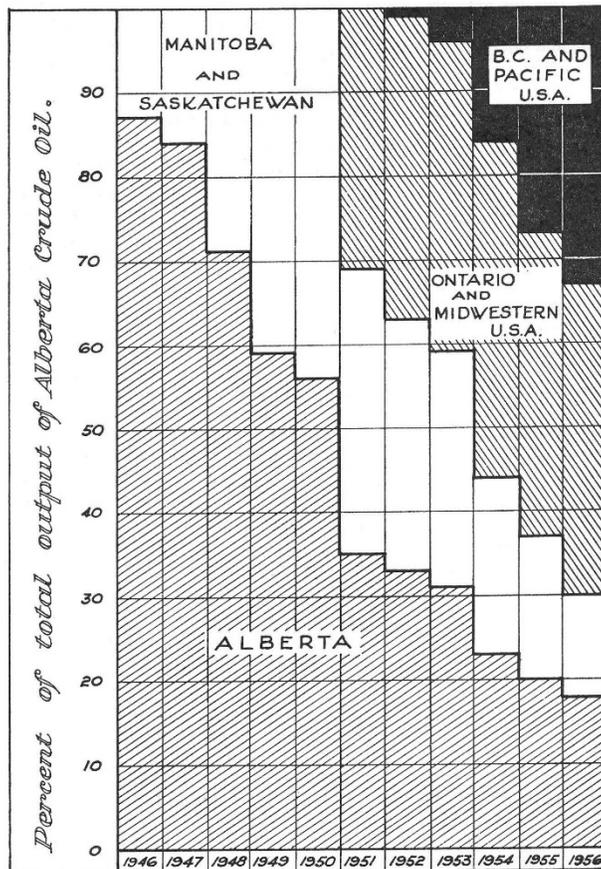


Figure A8. Percentage of Alberta crude oil output sold in main market areas, 1946-1956 (from Hanson 1958, Figure 42, p. 175).

Leduc Con.'s Plunge Features Dull Week

Well Has Only 15 Feet in Which to Produce Answer; Interest Switches to Millet-Leduc

By C. V. MYERS
[Calgary Herald Oil Editor]

It has been a slow week on the Calgary oil market. Most spectacular development was the sudden downward plunge of Leduc Consolidated. Selling for \$1.60 in July, the stock gradually declined to around \$1.00 through August. Tuesday's close was 90 cents; it had dropped to 65 cents Thursday, and Friday it fell to a low of 33 cents on the Calgary exchange.

Reason for catastrophic slide was the failure of the D-3 oil zone to materialize at its proper level. On Friday it was looking as if Leduc Consolidated might be just over the edge of the coral reef that contained the oil. It still had a margin of about 15 feet, however, above the water level. If it didn't find the zone in the next core, Leduc Consolidated would be washed up.

♦ ♦ ♦
ATLANTIC OIL Company announced the purchase of a choice quarter section in the proven section of the field. Even failure by adjoining Leduc Consolidated appeared unlikely to affect Atlantic prospects adversely.

But on the whole the oil industry needed a new strike to revive interest, and in mid-week attention veered off sharply to the southeast where high promise was materializing at the Millet-Leduc wildcat.

The well was 17 miles southeast of the Leduc field and its main promise seemed to be in the D-1 and D-2 zones. The first zone showed good porosity but was not tested. Officials announced that they would proceed 400 feet further to D-2 which was responsible for the original Leduc discovery in Imperial Leduc No. 1.

IF THEY FOUND production here they would take it, if not they would go back and test D-1. If Millet-Leduc came in it would cause a bigger oil boom than Leduc, because many independents blanketed this new area.

If Millet-Leduc didn't come in, the new boom would have to wait for some other wildcat. It might take days, weeks, or months. But sometime it would happen; oil was in those central Alberta strata and plenty of wildcats were drilling.

FAILURE WOULD knock out most of the Consolidated property to the south and southeast, leaving only one hopeful location, a quarter of a mile north of the present well. If No. 1 was a success, it would just get in under the line, and Friday it appeared that two oil wells was the maximum Consolidated could expect.

♦ ♦ ♦
Early in the week Imperial brought in another large producer without much visible effect on the market. Leduc No. 8 kicked out more than 100 barrels an hour on final drill-stem test. The well was slated for steady production in the coming week. Imperial Oil announced that its field pipeline would probably be in operation early in October, increasing the commercial flow of oil from the field.

Globe and Leduc West brought their well into steady production Tuesday. The well was the biggest in the field. On open flow it produced 175 barrels in one hour, about \$500 worth of oil. On restricted flow it produced 500 barrels daily through a one-third-of-an-inch diameter opening. Officials said they expected to cut the well to about 350 barrels a day on sustained production. This would mean an income of \$1,000 a day.

No Oil Zone At Consolidated 1

By C. V. MYERS
[Calgary Herald Oil Editor]

Leduc Consolidated No. 1 has missed the D-3 zone in the Leduc field. The well has cored to 5,362 feet and is still in green shale, nearing the water level in the field.

Hope had been all but completely abandoned for the well today. With it goes hope for the bulk of Consolidated acreage, except for the No. 2 well north of No. 1. This well is logging high and little doubt is entertained regarding its prospects, though no well can be counted on until it is in.

The No. 1 failure already practically rules out the No. 3 well, a quarter of a mile south, which is coring at 5,035 feet today, coring for the D-2 zone. The No. 2 well has hit everything high, is at 5,075 feet today.

British American Oil has applied for reservations totalling 300,000 acres north of the Peace River in the Whitemud Hills area.

Figure A9. Three news items from the Leduc Field as reported in the Calgary Herald on September 6, 1947, approx. seven months after the discovery.



Figure A10. Happy roughnecks working for Imperial Oil subsidiary Royalite on a Stony Plain well, near Edmonton in 1950 (photo from the Provincial Archives of Alberta, as extracted from Gould 1976, p. 211). Many rig workers farmed during the summer and worked the rigs during the winter to make money for their operations and their families.

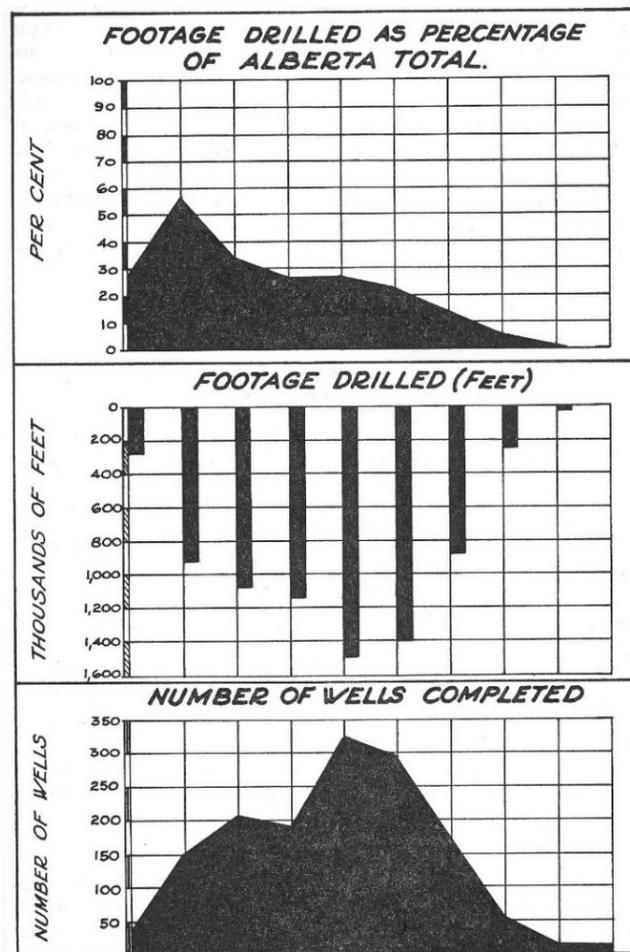


Figure A11. Drilling activity within the Leduc-Woodbend Field, 1947-1956 (from Hanson 1958, Figure 18, p.75).

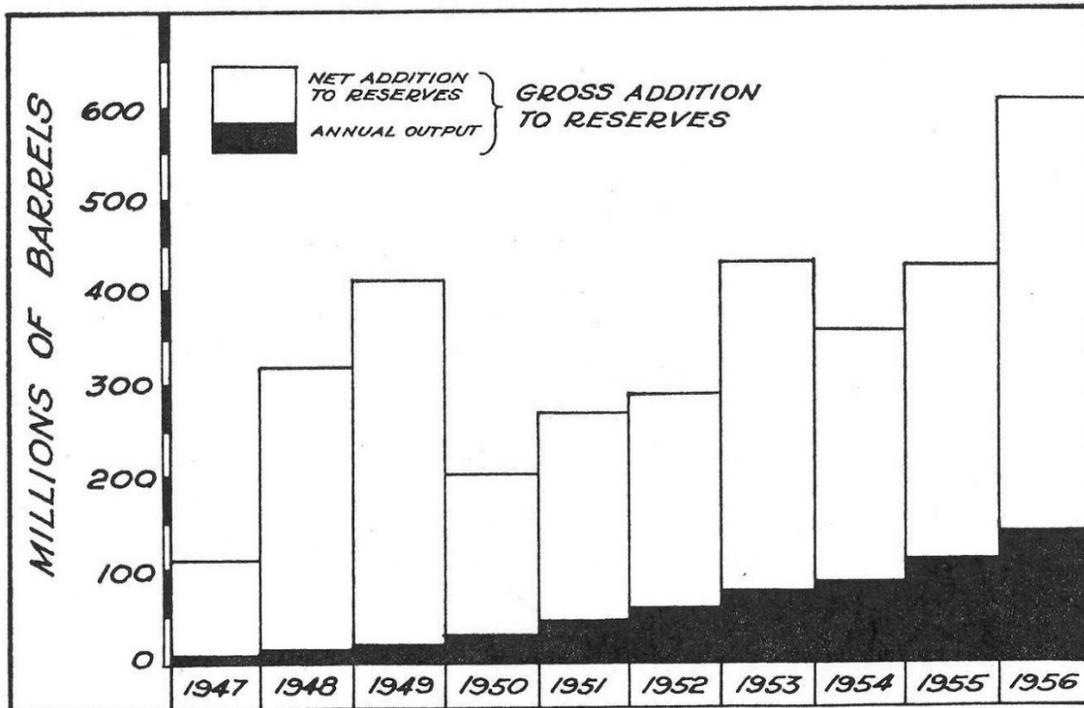


Figure A12. Gross additions to reserves and annual production of crude oil in Alberta, 1947-1956. (from Hanson 1958, Figure 36, p. 125).

Year	Production millions of barrels	Number of Producing Wells	Value of Production at Well Head millions of dollars	Average Price per Barrel dollars	Average Production per Well Year	Production per Well Day
1946	6.7	523	12.7	1.90	12,800	35
1947	6.4	606	14.7	2.30	10,600	29
1948	10.5	714	33.6	3.20	14,700	40
1949	19.8	1,242	57.4	2.90	15,900	44
1950	27.2	1,995	80.6	2.97	13,600	37
1951	45.9	2,731	115.8	2.52	16,800	46
1952	58.9	3,661	139.7	2.37	16,000	44
1953	76.8	4,504	193.1	2.52	17,000	47
1954	87.6	5,068	227.9	2.60	17,300	47
1955	113.0	6,138	274.2	2.42	18,400	49
1956	143.9	7,390	355.2	2.47	19,400	53

Figure A13. Crude oil production data, Alberta, 1946-1956 (excluding natural gasoline and other liquid hydrocarbons) (from Hanson 1958, p. 124). Note the relatively constant price per barrel and the average daily and annual well production numbers. Both were heavily influenced by regulation including the prorationing of production. The strong growth in the number of producing wells, however, drove the need to constantly expand the marketing area of the crude being produced into adjacent provinces and the U.S.

PART B: WHAT WE UNDERSTAND TODAY ABOUT LEDUC

The petroleum industry spent a tremendous amount of time and money delineating the Leduc Field (or more formally the Leduc-Woodbend 050-26W4 Field) and presumably made a lot of money doing so – although a full cycle analysis of that has not been done as far as I know.

When the dust settled, the following information (as extracted from the tabulations of the 1999 volume of the Alberta Energy and Utilities Board and supplemented by the 1960 Oil Fields of Alberta and 1969 Gas Fields of Alberta volumes of the Alberta Society of Petroleum Geologists) can be shared:

Leduc Field totals (all measurements converted to Imperial units):

Oil in place – 783 million barrels
Initial recoverable oil by primary production – 330 million barrels
Initial recoverable oil by enhanced production – 59 million barrels
Total initial recoverable oil – 389 million barrels
Cumulative production to 1999 – 385 million barrels

Natural gas in place – 1.2 trillion cubic feet
Natural gas initially recoverable – 623 billion cubic feet
Natural gas cumulative production to 1999 - 506 billion cubic feet

Oil Pools within the Field (note that in some cases pools are segmented because communication amongst wells or continuity of productive intervals had not been established though it may exist):

Cretaceous Blairmore (Ellerslie) – 25 oil pools
Cretaceous Upper Mannville – 1 oil pool
Cretaceous Glauconitic – 5 oil pools
Devonian D1 (Wabamun) – 2 oil pools
Devonian D2 (Nisku) – 8 oil pools
Devonian D3 (Leduc) – 15 oil pools

Largest Devonian Pools (oil 39 degree API in both D2 and D3):

Oil - D3A. Column height 38 feet, average pay 35 feet, porosity 10%, water saturation 14%, shrinkage 0.75, gas-oil ratio 553 cubic feet per barrel, initial established reserves 250 million barrels.

Gas – D3A – Solution. Initial established reserves 98 billion cubic feet.

Gas - D3A – Associated. Column height up to 100 feet (gas cap), average pay 60 feet, porosity 8%, water saturation 15%, recovery efficiency 63%, surface loss 15%. Initial established reserves 250 billion cubic feet.

Oil – D2 A. Average pay 62 feet, average porosity 3.4%, water saturation 26%, shrinkage 0.75. Initial established reserves 91 million barrels.

There are two notable solution gas pools and 1 associated gas pool in the D2.

Note: according to the A.S.P.G. compilation, every D2 well seemed to have its own oil-water contact. Perhaps this was a function of tighter wet carbonates at the base of the Nisku.



Figure B1. Core recovered from porous Devonian reservoir, artistically posed in a “pool” of oil (from the dust Jacket of Aubrey Kerr’s book “Leduc”). The black oil shown was probably automotive engine oil that was quite dissimilar from actual Leduc oil that was far less viscous and was described as being 39 degrees API and green in colour in both Devonian and Cretaceous reservoirs. Note that the geological explanation for the linear Leduc-Rimbey trend of reefs is still controversial. There may be a deep but elusive set of faults in the underlying Precambrian basement that were periodically active but are not obvious on seismic.

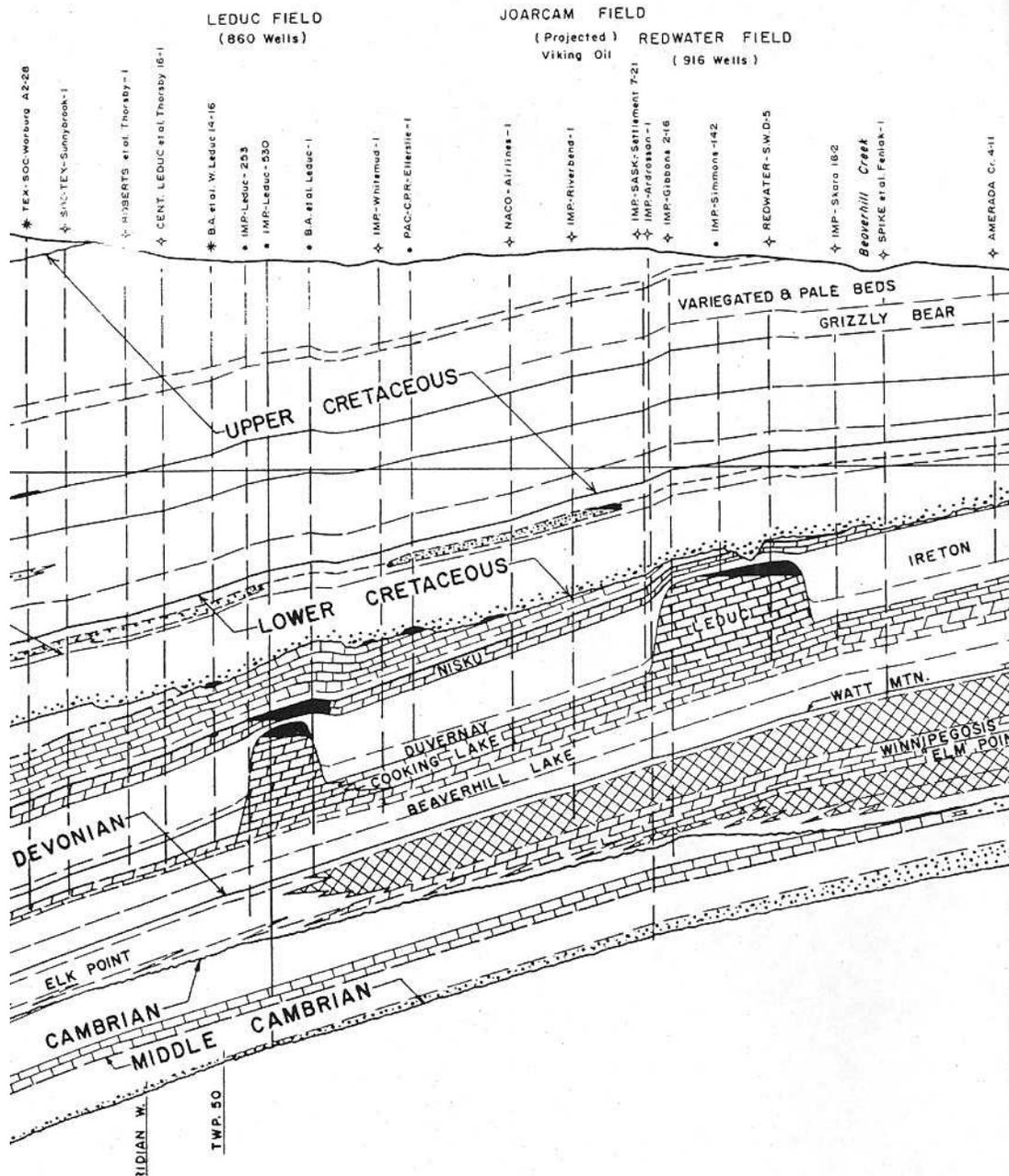


Figure B2. Geological cross-section running approx. SW (left) to NE (right) through the two largest Devonian oil pools at Leduc (disc. 1947) and Redwater (disc. 1948) (from Gussow 1962). Hydrocarbon pools (black) exist at three levels in the Leduc Field – the Leduc Formation (or D3) at the top of the tall “bricked” reefal structure, the regional Nisku Formation (or D2) above it and somewhat controlled by drape over the D3 reef, and at the base of the lower Cretaceous interval off the flanks of the Devonian accumulations (the Detrital” zone). The marginally productive Ellerslie Member slightly higher in the Cretaceous is not shown to be oil-bearing in this section. Neither the Wabamun (or D1) at the top of the Paleozoic nor the Cretaceous directly above the D3/D2 are very productive due to the absence of reservoir-quality carbonate or sandstone rocks, respectively. Note that the hydrocarbons in the Leduc D3 are actually comprised of a relatively thin oil column overlain by a thicker gas cap.

How to Lose Money at Leduc (maybe)

Transcription: “LEDUC CALMAR WESTERN PROPERTIES No. 5 – NET ROYALTY TRUST

This certifies that (persons X and Y) of (location) are registered in the records of Prudential Trust at Edmonton, Alberta, as being entitled to 1 royalty unit in a trust of 70% of the net proceeds of production of petroleum, natural gas and related hydrocarbons other than coal, recovered, saved and marketed from a well to be drilled at 11-3-50-26W4 in the Province of Alberta, which is down to and including the Nisku member of the Winterburn formation or in any production therefrom, as such net production is defined in a certain trust agreement dated January 22, 1951, made between Western Properties and Prudential Trust as Trustee, whereby 70% of the net proceeds of production from the said well is assigned to the said Trustee for distribution after the deductions provided for therein to the registered holders of 140 royalty units created thereby, each full unit representing a $\frac{1}{2}$ of 1% interest in the net proceeds of production.

This certificate is subject in all respects to the terms and conditions of the said trust agreement dated November 18, 1950 and made between Leduc Calmar Oil and Western Properties whereby Western Properties acquired a 70% interest in the net production from the said well to be drilled by and at the sole expense of Western Properties.

The said agreements may be inspected during office hours at the office of Prudential Trust, Edmonton, Alberta, and provide for deductions from the total proceeds of production prior to distribution to holders of the royalty units as follows:

- a. A 12.5% gross royalty payable to the landholder under the head lease covering the said lands.
- b. 12.5% of all crude oil to the original lessee until it shall have received that number of barrels of crude oil as shall be equivalent to 7500 multiplied by the number of wells placed on production on LSD 11 and LSD 12 of Section 3 aforesaid.
- c. Any amounts properly owing to Leduc Calmar Oil for operating costs of said well.
- d. All income and other taxes payable with respect to the production of said well received by the Trustee.
- e. The proportionate share of each unit holder of the Trustee's fees and expenses.
- f. Any amounts expended or borrowed for the purpose of drilling or completing or repairing the said well for the purchase or installation of production equipment as shall not have been paid out of the proceeds of sale of royalty units.

The recorded interest of the holder of this certificate is transferable in whole or in fractions of 1/40 or multiples thereof of a unit on the records of Prudential Trust upon the surrender of this certificate and upon the execution of a transfer in the form endorsed thereon, or by such other form as may be acceptable to the said trustee, and the delivery thereof to the Trustee and upon payment of its proper transfer fees.

Dated at the City of Edmonton, in the Province of Alberta, this April 24, 1964.

Caveat: An investment in this Trust must be considered speculative and should be regarded as a depreciating asset and sufficient allowance made for a return of capital before any computation is made as to the actual income obtained therefrom. The rate of pay-off may vary by reason of fixed allowables, market proration and other factors.”

TRUST CERTIFICATE ANALYSIS

Land and investment deals in the petroleum industry are often quite complicated. Just as for stocks, the skilled decision to purchase a royalty interest requires robust knowledge of the investment vehicle itself, its context and some measure of the outlook for production and prices.

The Royalty Trust certificate in Figure B3 is a case in point. Its text has been transcribed on the previous page above for legibility. At the risk of misinterpreting the situation faced by the royalty interest purchasers in 1964, the following observations can be made:

From the nature of the situation, this appears to be related to the sale of royalty interests in freehold land as there is no mention of a Crown royalty.

The original land transaction took place in 1950 wherein Western Properties farmed in on the original leesor (Leduc Calmar) by funding a Nisku-targeted well at the stated location. It appears that this well was to be drilled by Leduc Calmar and subsequently also operated by them so this transaction was simply a way for them to raise the funds for that well's costs.

In 1951 Western Properties retained Prudential Trust to sell these royalty units to investors.

There were presumably other investors in the early 1950's who initially purchased these units. The 1964 transaction recorded by this certificate would therefore have been a re-sale, whose paperwork mechanics are described in the text.

Prior to unit holders receiving any money, there was a laundry list of deductions to be made including pre-existing royalty interests, a bonus slug of the initial production to Leduc Calmar, operating costs, taxes, other expenses and any residual costs associated with the drilling and equipping of the test well. Presumably at the time of the 1964 transaction the payout to Leduc Calmar and the recovery of drilling and equipping costs would have long since been handled and future deductions would have been limited to royalties, operating costs and taxes.

Part of the assessment for such a royalty trust certificate would have to be how much more oil would there be coming from the well for the rest of its productive life. The well location is well within the pool outline for the D2 so that shouldn't have been an issue. Presumably there was some production history to look at. The well and those around it might have been subject to prorationing since 1950 such that depletion might not have been as bad as it could have been, however with a 40 acre well spacing the draw area of the well would be quite small.

Perhaps if the price was right and the outlook for deductions was reasonable, this might have been a worthwhile investment. Perhaps it could also be a play on oil prices, although in the early 1960's there was a global glut of crude oil and prices were depressed. Perhaps they hoping for the first OPEC crisis (didn't happen until 1973).

These speculations are just to illustrate that it may or may not have been a good idea to make this investment. Although it is hard to see on the certificate, the purchasers were from New York and therefore might not have had the best idea of what was going on in Alberta. Without further "forensic" investigations we will never know.

PART C: SOME OF THE KEY PLAYERS

Success has many parents, as they say, and that is certainly the case for Leduc.

The staff of Imperial Oil were very persistent, to say the least, about testing the petroleum potential of western Canada. Of course they had a head start on everyone else, having been the discoverers of the Norman Wells Field in the Northwest Territories 1920, and through Royalite Oil, the major player in the Turner Valley Field that dominated activity in western Canada from 1914 to 1946. Ted Link (Figure C1) was Imperial's Chief Geologist and he "kept the faith" that at some point a major producer would be found. Having said that, Imperial was on the verge of abandoning its efforts in Western Canada, having allegedly drilled 133 dry holes looking for "the big one". The name of Imperial Oil tool pusher Vern "Dry Hole" Hunter certainly takes on significant meaning in this context. Indeed at the end of 1946, Imperial competitor Shell Canada had done exactly that and had uprooted its Calgary exploration staff and relocated them to New Brunswick to pursue what they thought might be Gulf Coast analog salt domes in that province. Once the true scope uncovered by Leduc in Western Canada was admitted to (a tough piece of truth to bite off), Shell returned in 1949 but faced a situation in which little prospective acreage remained – but that's another story.

Aubrey Kerr (Figure C2 and C3) recounts that there was a subtle hint of a dip reversal in the sparse outcropping Cretaceous beds near the location of the Leduc prospect. Some thought that this was a distal expression of the compressional deformation in the Rocky Mountains to the west. Few imagined that there could be a deep-seated carbonate reef over which there was differential compaction. Indeed it took many years before the true nature and geometry of the Leduc D3 accumulation was established and widely accepted. Aubrey was there for it all – and we are deeply in his debt for his recording of this history and his many publications – books and articles – on both Leduc and the broader span of Canadian petroleum history.

Some folks were in the right place at the right time. Lawyer Eric Harvie (Figure C4) had accumulated a broad swath of subsurface petroleum rights, in part by picking up interests in old railway grant lands that others had relinquished through non-payment of rentals.

The growth of the industry involved multitudes of technical professionals – geologists, geophysicists, engineers - and business people – landmen, marketers, economists, managers. The prosperity in the oil patch attracted people from across Canada and around the world. It was, in many ways, a modern day gold rush.

Of course the everyday heroes were the working people of Alberta and the other Prairie Provinces who worked the rigs, shot the seismic and produced the wells (Figures C5 and C6). They were often accompanied by their families, living in small trailers through freezing winters and sweltering summers (see Aubrey's shack in Figure C3).

One has to wonder what Alberta would be like today if Leduc had not been discovered – or even if its discovery had been delayed a decade or two. Such near misses are common in the explorations histories of basins globally. Maybe we'd all be working elsewhere or riding horses to the next Calgary Stampede!

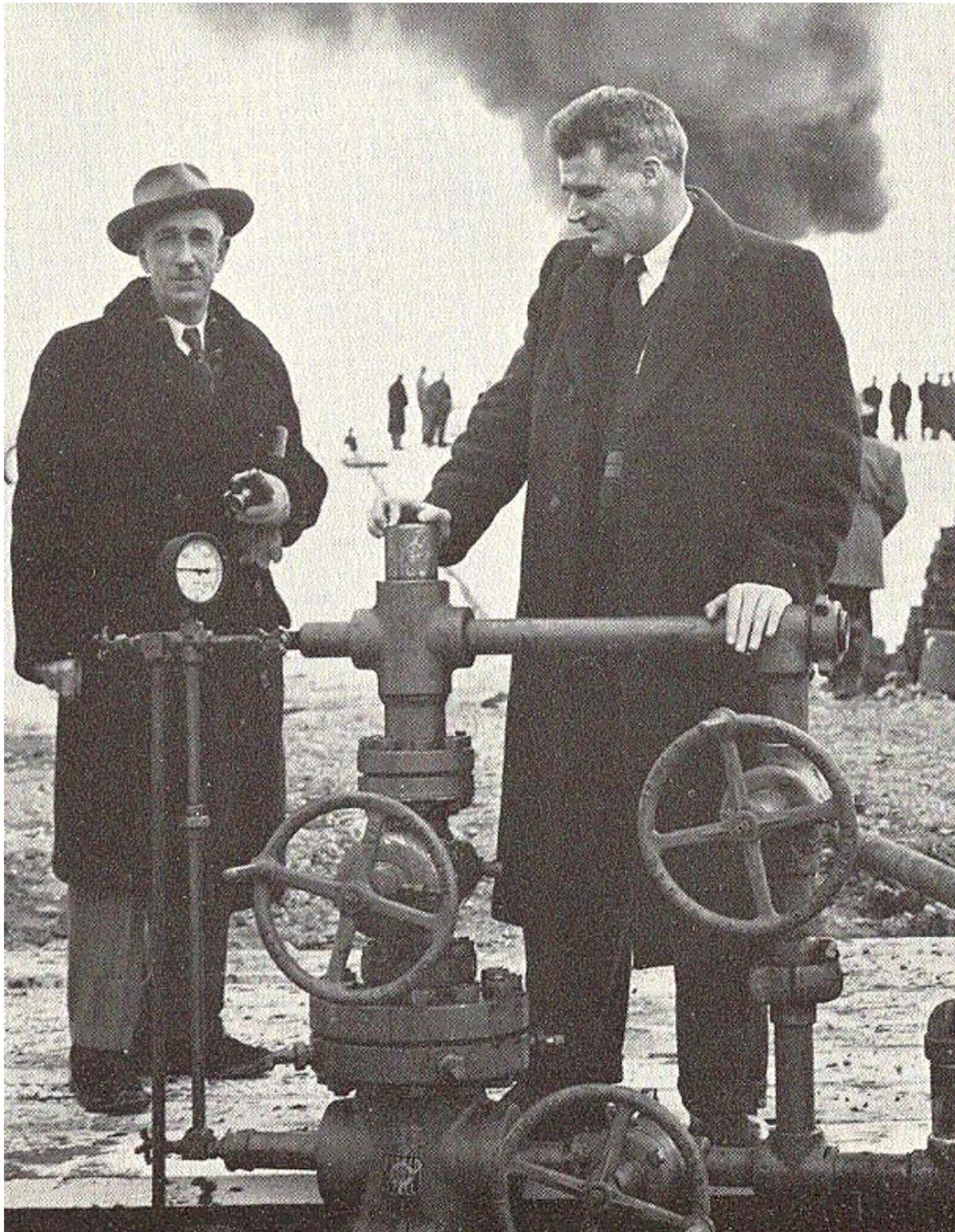


Figure C1. Scurry-Malmo No. 1 discovery well examined by Spi Langston (right), President of Scurry Oils, and Theodore Link (left), consultant for Scurry Oils (from Hilborn 1968, p. 228). At this point in his career Link had retired from Imperial Oil after a tremendous run of success including Norman Wells and Leduc. He had directed Imperial's exploration efforts as its Chief Geologist. By the mid-1950's Link had become Chief Geologist at Cree Oil, a small independent Western Canada concern that played in multiple fairways. In 1958 Cree was taken over by Winnipeg-based North Star Oil, a predominantly downstream player that was seeking to become more vertically integrated. North Star was acquired by Shell Canada in 1960.



Figure C2. Geologist Aubrey Kerr uses a microscope to examine drill cuttings from a Leduc area well, checking for rock types, porosity, and indications of hydrocarbons. Note the bags of cuttings hanging above him to dry (from Aubrey Kerr collection).



Figure C3. Wellsite shack occupied by geologist Aubrey Kerr during well operations, at least during the summer. Not quite an ATCO trailer! These humble abodes could be loaded on flatbed trucks and moved to the next drilling location (from Aubrey Kerr collection).



Figure C4. Lawyer Eric Harvie accumulated a huge, though scattered, spread of subsurface mineral rights during the period of time before 1947 and was well positioned to make the most of them when exploration and production exploded in the aftermath of the Leduc discovery. Most of the fortune that Harvie realized was donated to a range of philanthropic causes including the Glenbow Museum in Calgary. This largess greatly enriched the cultural life of Alberta.



Figure C5. Worker filling railway tank car with Leduc crude oil at Nisku in 1950 (photo by Harry Pollard, Provincial Archives of Alberta, number P1540).

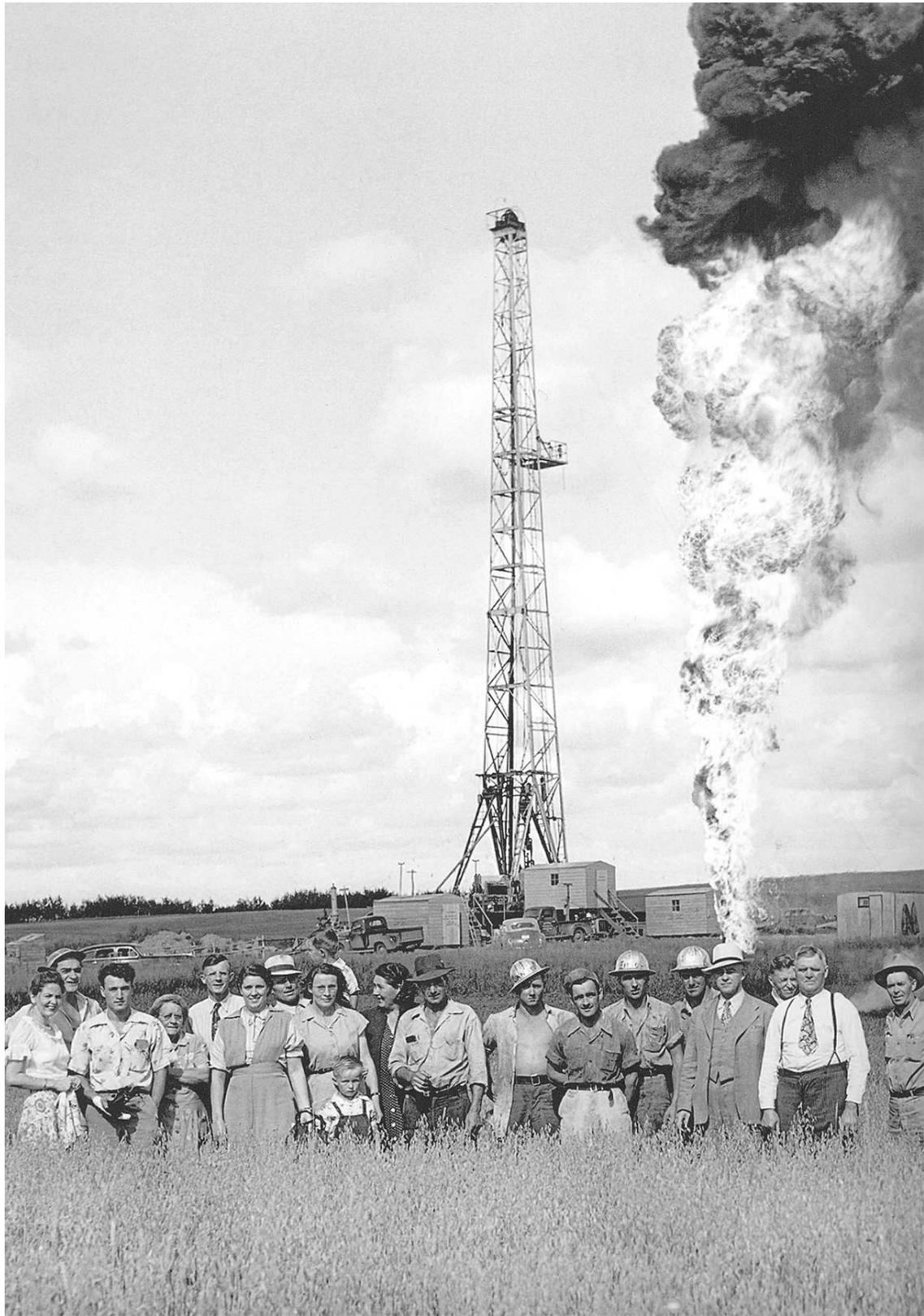


Figure C6. Leduc fundamentally changed Alberta for just about everyone – drillers, owners, and workers in related fields like seismic operations – and their families.

PETROLEUM - KEEPING IT IN THE FAMILY



AAPG

Distinguished
Lecture Program



Dr. Michael Pycrz is a professor in the Department of Petroleum and Geosystems Engineering at the University of Texas in Austin. Your editor happened to sit beside him at an industry luncheon in the United States a number of years ago. His name seemed familiar so I asked him about it. Turns out that he is the grandson of Tymko Pycrz, an original owner of a critically-located quarter section of freehold mineral rights at Leduc (NW quarter of 25-50-26W4). The Pycrz family had originally come to Canada from Galacia in 1898 and had purchased the land in 1911. Aubrey Kerr devoted a section of his book "Leduc" (pp. 119-126) to the Pycrz family and their interactions with Imperial Oil and other companies, the courts, the regulators and the oilfield operators. A very entertaining story. According to Aubrey, that patch of land was remarkable because it hosted the first independently drilled well in the field and the first dry hole to be drilled in the field (in addition to three producers). It also hosted the first well to be drilled with a steam rig and the first to use a diamond core barrel. It was originally leased to Imperial Oil but because of a mixup in the older ownership transfer details it had to be given back to the Pycrz family and was re-leased to another party.

Leduc – Future Potential

Leduc is finished, right? Not quite. Although the D2 and D3 oil has long since been depleted there could be secondary recovery to produce the residual oil. The D3 gas cap was blown down in the 1980s. The status of petroleum rights is not clear. Certainly shallow rights reversion and available freehold have made new development plays in the Cretaceous section viable. And who knows – the D3 reef could be just what we are looking for for carbon dioxide storage.

**Correction re: SIGNIFICANT ANNIVERSARIES – NORMAN WELLS
Petroleum History Society Archives,
December 2020, v. XXXI, Number 4, pp. 7-10.**

Editor's correction:

ORIGINAL TEXT

“In the mid-1980s, peak oil meant something entirely different than it does today: then it meant peak supply. To address the decline in oil reserves and to access more oil, Imperial devised a plan to extract oil from below the river using manmade islands. At the time, the Norman Wells Field was considered the fourth largest oil deposit in Canada and in 1982 Imperial undertook an expansion and added six more artificial islands and additional wells. The islands were built over two summers, with four islands constructed in 1983 (Rayuka, Rampart, Dehcho and Ekwe) and the remaining two (Iteh K’ee and Little Bear) constructed in 1984. **The project manager for this significant undertaking was Mel Benson** – one of many Indigenous people who played key roles in the oilfield over its history. Designed to withstand a once-in-250 year flood, each island is a sand-filled structure held by a ring of rock and protected by armour stones at the upstream corner of each to protect from the mighty Mackenzie and the great forces of ice. The islands are connected with 26 km of marine utility corridors carrying produced fluids, injection gas, and water and power cables. During the time of island construction, Interprovincial Pipeline (now Enbridge) which Imperial owned 33% of at the time, started construction of a pipeline from Norman Wells to Zama, Alberta. Commissioned in 1985, the 868-km line could accommodate production of up to 30,000 barrels per day.”

REVISION

The highlighted statement above from the top of page 10 in the article is incorrect, specifically that: ... *“The project manager for this significant undertaking was Mel Benson – ... “*

In fact, the project managers for the Norman Wells Development and Pipeline Project were M. C. (Mike) Arnett for Esso Resources Canada Limited (expansion of the oilfield itself) and William (Bill) Pearce of Interprovincial Pipeline (NW) Ltd. for pipeline construction.

Mel Benson did play an important role in oilfield expansion by managing its Northern Employment Office and community affairs. Northern business support was key to the high level of northern employment on the project.

Note: Mel passed away on September 16, 2021. Our apologies that this correction did not appear in a more timely fashion. Please refer to the Remembrances section of this newsletter for more details on Mel’s life and accomplishments.

The P.H.S. regrets any misunderstanding that this error may have caused. The P.H.S. takes no responsibility for inaccuracies in the material as it was taken directly from a feature created by Imperial Oil Limited.

REMEMBRANCES

(with thanks to the Calgary Herald and the Globe and Mail)

We continue our tradition of honouring those who have been integral parts of the Canadian petroleum industry and have contributed to its success. These obituaries have been edited to focus on the petroleum-related side of each individual. Readers are encouraged to access the full documents that include personal details and accomplishments of other natures.

Note that in the following, comments in italics are from the editor, generally to add a bit of P.H.S.-related or personal commentary to these edited memorials.

Abel, Wesley (Wes). Born May 14, 1936 in Saskatoon, Saskatchewan and passed away December 9, 2021. Wes was raised on a farm with fourteen siblings. He learned the value of hard work and teamwork from an early age. He was a self-made man who bettered himself by working as a roughneck in the oil patch while finishing high school and attending university. His hard work and persistence led him to graduate top of his class, earning the Gold Medal in Civil Engineering from the University of Alberta.

Wes began his long career with Mobil Oil Canada, pioneering some of the early offshore oil drilling programs. He swiftly moved up the organization leading him to spearhead and manage innovative projects overseas in Norway, the United Kingdom, and Newfoundland. His success and reputation for fairness and human compassion earned him respect throughout the industry. After his retirement from Exxon/Mobil he continued to consult and was considered a valued resource in his field by many of his colleagues.

Wes was a long-time member of the Petroleum History Society. On May 18, 2006 he presented to us a luncheon talk entitled “Hibernia – Fish, Icebergs and Oil”. The following abstract is from the May 2006 issue of Archives and is about that talk and about Wes’s career to that point:

“The Hibernia Field is located approximately 200 miles east-southeast of St. John’s, on the Grand Banks of Newfoundland. The field was discovered in 1979 by the first exploration well to be drilled by Chevron on the Grand Banks as part of a farm-out agreement with Mobil. Mobil had previously drilled several exploration wells in the area but they had been unsuccessful. Wes described to us how the exploration and development of the field proceeded including the Ocean Ranger sinking, delineation, ownership disputes between the Provincial and Federal Governments, The Atlantic Accord and the ultimate development of the field that led to its [then] current production of over 200,000 barrels per day from the Hibernia gravity-based structure (GBS).”

Extended bio: In 1955 Wes went to work for Mobil Oil as an oil field tank battery operator at Drayton Valley and two years later he was transferred to the Calgary office. It was there that he finished his high school by attending night school at Mount Royal College, and then going on to take engineering at the U. of A. in Edmonton, graduating with distinction and winning the A.P.E.G.G.A. gold medal in Civil Engineering in 1964.

Upon graduation, he went to work for Mobil Oil in Edmonton and was transferred to Calgary as a reservoir engineer in 1966. He soon found himself working at Mobil’s research lab in Dallas

doing advanced research on fluid flow in high pressure and high temperature reservoirs. During his stint at the lab, he participated in the development of Mobil's first compositional reservoir simulator computer model. He then published a technical paper describing his work in the S.P.E. Journal of Technology. He continued to liaise with the Mobil Engineering group in Dallas and within a short time was involved with engineering and installation of offshore production facilities in the Gulf of Mexico. Shortly thereafter he was Mobil's structural engineer during the construction of the SEDCO J semi-submersible drilling rig in Halifax and was in charge of engineering and installation of the first six-well drilling platform offshore Nova Scotia on the beach of Sable Island. In November of 1974, he went to Norway as Structural Engineering Manager for the Statfjord "A" project and in 1976 went to work offshore as Platform Manager. In 1979 he and his family moved to London, England where he was overall manager for the development of the Beryl "B" project.

In 1983, he was transferred to Halifax, Nova Scotia, as Engineering Manager for the development of the offshore Sable gas project and in 1985, was transferred to St. John's, Newfoundland as Area Manager where he led the development plan and engineering team for the Hibernia project. While there, he also led the development team for the Environmental Impact Studies and statement filings as well as the engineering studies for the reservoir depletion plan and construction of the offshore platform for an ice-protected production facility. He was a lead participant in the negotiating team for the Hibernia group of partners in the development of the Hibernia agreements with the two governments and was the lead negotiator for the Canada Benefits and Bull Arm Agreements.

He was an active member of the community, participating in professional, local business, education, charitable and sports associations. He was a member of the advisory committees to the Faculty of Engineering and the Faculty of Business at Memorial University, Chairman of the Board of Governors for C-CORE and served on the C-CORE research advisory committee for six years. He was a member of the Rotary Club, the Y.M.C.A., curling and other sports associations. In 1993, he returned to Calgary as senior advisor to management and elected to take early retirement in 1996. He is the recipient of numerous industry awards, including an Award of Merit from the Canadian Petroleum Association (Chairman of the Frontier Committee), and a Frontier Committee award from C.A.P.P. In 2002, he received an Outstanding Contribution Award from the Newfoundland Ocean Industries Association (N.O.I.A.) in recognition of outstanding and lasting contribution to the establishment and growth of the oil and gas industry in Newfoundland and Labrador. After several years of consulting, he enjoyed full retirement and was active in sports; bowling, skiing, curling and golfing.

Benson, Melvin Edward ("Wapunatew"), First Nations from Beaver Lake Cree Nation, was born in Imperial Mills, Alberta on February 14, 1949 and passed away September 16, 2021. Mel's first job was at the age of ten building fish boxes for five cents a box. He began his career at the Edmonton Friendship Centre, then as an instructor at Grant McEwan University with their inaugural Native Studies Program. He branched into working with the Secretary of State before shifting his career into the oil and gas industry. He had a long career with Imperial Oil before transferring to Exxon with international projects in Chad, Cameroon, Russia and Korea amongst other locations. When Mel returned to Canada, he started up a number of successful oil and gas exploration companies. Upon retirement, Mel joined the Suncor Board of Directors and was the first Indigenous person and longest serving board member on the T.S.X. He was able to assist

Suncor in great strides throughout the First Nations communities for over 21 years. He has served on numerous boards and volunteered unselfishly.

Mel accomplished much through his life and was the recipient of many awards and honours. He was honoured by his National Aboriginal Achievement Award for Business and Commerce and Aboriginal Business Lifetime Achievement Award. His natural leadership, mentorship, resilience, self-determination and generosity, with individuals, family, friends, community and his Nation is something we are all inspired by. He had a passion for capacity building, mentorship and education of our Indigenous Youth, their future. He always led by example. Mel enjoyed the finer things in life including visiting friends and family, laughter, live music, great wine and incredible food. Anyone who knew Mel has a good story and great memories of their time together. He loved the outdoors and was an avid fisherman, hunter, horseman, adventurer and traveler. Mel's favourite saying was "quality is doing it right the first time, to avoid the cost of rework."

Brennan, Brian. Born October 4th, 1943 in Dublin, Ireland and passed away February 21, 2021. Brian composed his own obituary (naturally), somewhat shortened here.

"I once made a living writing the obits of other people. Here I get to write my own. My story began in Dublin, Ireland on Oct. 4, 1943. I received the gift of life and held it close for 77 years. I came to Canada on Remembrance Day 1966. I never forgot that date. And I never forget Feb. 29, 1968, the day I met Zelda Pineau of Hope River, Prince Edward Island. We met at the Black Knight Lounge in Halifax, where I had a piano-playing gig. Playing piano for a living was a dream I'd never been able to fulfil in Ireland. Zelda worked at a Halifax insurance office. She would later find her calling as a teacher just as I found mine as a journalist. We brought out the best in each other. We moved to Smithers after I landed my first reporting job at the weekly Interior News. Zelda had encouraged me to do something with my writing because she liked the letters I sent her while on the road as a musician. I followed her advice and fulfilled another long-held dream: I became a newspaperman. After on-the-job training in Smithers and Prince George I joined the Calgary Herald as a staff writer and stayed there for 25 years. I won a few prizes, including the national Hollobon Award for medical reporting and two golds in the Western Magazine Awards. I also served on national boards, as a regional rep for the Canadian Association of Journalists and as president of the Canadian Theatre Critics Association. My last Herald gig was writing the Tribute obituary column, which set the stage for the twelve books of biography and social history I wrote after leaving the paper. Once I caught the storytelling bug, I was fixated for life. If I wasn't writing to put wine in the cupboard, I was posting to my blog.

A tip of the hat to my friends in music, journalism and book writing, especially my colleagues at The Writers' Union of Canada, who rolled out the red carpet for me after my first book appeared on the shelves. And finally, a bow to the surviving members of the Club of 93, who helped me make it home before night as we raced against the dark. I enjoyed spending an important part of my life with you all. "So, fill to me the parting glass," the old song said. "Good night and joy be with you all."

A number of Brian's books touched upon the history of the petroleum industry. The P.H.S. honoured Brian with its Lifetime Achievement Award for 2016 with the citation "For making numerous contributions to the body of literature concerning the Canadian petroleum industry including many focused on its colourful personalities and significant events".

Brown, Floyd Alfred (Flip). Born October 26, 1928 in Edmonton, Alberta and passed away December 12, 2020. Flip began his career as an Observer, Party Manager for Norwest Seismic Surveys Ltd. in Calgary from 1950 - 1957. He spent part of his time with them in Trinidad. Flip went on to work for Schlumberger as a Case Hole Specialist in the Caribbean Division, stationed in Trinidad from 1957-1974. He then returned to Calgary and began his career in the tracked vehicle business, first with Tracked Vehicle Supply (a division of Canadian Foremost) and from 1998 with Track Industries Ltd. Flip retired from Track Industries in June 2008.

Diamond, Sarah (Beth) Elizabeth. Born September 28, 1954 in Blairmore, Alberta and passed away November 22, 2021. Beth was born to Carol and Rene Diamond - an active community volunteer and a mining engineer, respectively. She was the eldest of four sisters. With the family's move to Calgary, Beth began forging the enduring friendships that were a hallmark of her life. Beth's studied at McMaster University and the University of Calgary, earning B.A. and M.A. degrees in English. Upon graduation, Beth was determined to walk an unconventional path. She was especially grateful for Judi Gunter, her former business partner with whom she co-founded the Diamond-Gunter Group in the late 1980s.

Beth's career included roles in corporate, agency, post-secondary, non-profit and government communications. When the Diamond-Gunter group joined forces with NATIONAL Public Relations in 1997, she became the managing partner of the firm's new Calgary office and later was honoured to hold a board position with the firm's holding company, Res Publica (now Avenir Global). With the talent and reach of NATIONAL's team, Beth was able to help her Alberta clients advocate for their companies and causes across the country and around the world. As the head of the firm's energy practice and with her penchant for creative, collaborative solutions, she helped build the Canadian Centre for Energy Information, the Energy Policy Institute of Canada and the Canadian Oilsands Innovation Alliance, among others. She provided counsel for most major transactions and acquisitions, trusted by C.E.O.s on all sides of any deal for her common sense and uncommon strategic acumen. She led projects and teams that informed Canadians' understanding of critical and changing issues: energy policy, sustainability and evolving discussions around environmental stewardship. Her efforts shaped elements of Canadian public policy that remain timely and relevant today.

Equally important as achieving success for her clients was Beth's commitment to mentoring. With a quiet word, some thoughtful edits, a much-needed laugh or a conversation over coffee, she influenced and inspired. A generation of communicators owes Beth for helping them launch successful careers. She insisted upon - and modelled - professional excellence and personal integrity. Beth valued curiosity. She asked courageous questions. She expected thoughtful answers. Her ideal evening was a salon-style conversation on weighty topics with smart people, leavened with laughter, accompanied by unpretentious food.

Dumett, Clement Wallace Jr. Born December 30, 1927 in Tacoma, Washington and passed away January 10, 2021. Clem first attended school in Seattle and then moved to California with his father, graduating from Whittier Union High School in Whittier, CA. He started his college career at Stanford University, taking a break for a two year stint in the Army. Returning to Stanford to complete his education, Clem graduated in 1951, with a B.Sc. in Petroleum Engineering. He commenced his forty year career with Unocal (formerly Union Oil), starting in the oilfields near Coalinga, CA. Opportunity presented itself to join the growing oil

scene in Alberta, Canada and Clem transferred to Calgary in 1955. Clem's career with Unocal saw him working in the production and exploration areas, culminating as President of Unocal Canada. He was Chairman of the Board of Governors for the Canadian Petroleum Association (1981-82) where he fought tirelessly to stop the implementation of Trudeau's National Energy Program. He served as President of the Calgary Petroleum Club (1985-86) and was Chairman of the 29th Oilmen's Golf Tournament (1979), a member of the Calgary Golf and Country Club, The Petroleum Club and Ranchman's Club. Over the years he was a Director for Unocal Canada, Cansulex Limited, Peace Pipe Line, The Glenbow Institute, Maximum Energy Trust, Talisman Energy and the Kahanoff Foundation.

Ellingson, Arnold (Swede). Born in 1937 in Watson, Saskatchewan and passed away April 17, 2021. Arnold's parents and extended family members farmed in that region until moving to the Elkhorn, Manitoba area in the 1950s where they remained for many years. One year during his mid-teens when the family experienced a devastating crop failure, he and his parents migrated to Regina to find temporary work in the Simpsons (Sears) distribution centre. Some of his fondest memories were from childhood, such as when his grandfather made him homemade pancakes, watching his mother stooking wheat by hand, riding his horse and buggy to school and visiting neighbours. His incredible work ethic was forged during this time and set the course for a productive, meaningful life that set an example for his children, grandchildren and many people who worked with him and considered him a generous mentor. Swede, as he was known to most, worked in the petroleum industry for over 60 years, having started as a 16-year-old drilling rig hand around Virden, Manitoba. This is the time when the nickname, Swede, took root, although his family heritage is fiercely Norwegian.

By the time he retired in 2015, he had witnessed no less than six oil boom-and-bust cycles. He loved his work and never stopped being fascinated by this industry and, as an avid reader of the daily news, business overall. He started his career in the 1950s in southwest Manitoba and followed the cycles west. His first was to Estevan, Saskatchewan in the 1960s where in 1966, he began working for Haliburton which he always said was his education to prepare him for a career in the oil patch. In the early 1970's the migration continued westwards to Brooks, Alberta. From his early days working on the drilling rigs to establishing successful local divisions for leading midstream service companies, such as Site Oil Tools and Cardium-Weatherford, to consulting on downhole tool installations during his later years, there was always one constant: Swede made lifelong relationships everywhere he worked. He valued the stories they had in common or built together, and easily reconnected with friends as if no time had passed between their visits.

Farries, John (Keith). Born July 9, 1930 in Cardston, Alberta and passed away January 24, 2021. Keith spent his early years growing up on the family farm near High River. He excelled at academics and in his last year of high school graduated at the top of his class in the school district. He then went to the University of Oklahoma where he earned a degree in Petroleum Engineering. Keith began his distinguished professional career at what is now Amoco and worked in Drayton Valley. He worked for a number of companies in progressively senior roles before striking out on his own in 1970 with the establishment of Farries Engineering Ltd., that later became Farries Engineering (1977) Ltd. While always based in Calgary, work took Keith to the U.S., Russia and Israel. In addition to running Farries Engineering he also was President of Westridge Petroleum Ltd. from 1986 to 2001. He was well known for always acting with professionalism and integrity. Later in his career he was called upon many times to act as an

expert witness in cases involving the oil and gas industry. As one of Keith's business associates and good friends recently said, "I would call Keith the ultimate engineer's engineer in the Canadian oilpatch."

Gies, Robert (Bob) Maitland. Born May 18, 1933, in Hamilton, Ontario and passed away February 17, 2022. Bob grew up in the Hamilton area where he met his wife, Ruth. Bob and Ruth were married on September 22, 1956, during Bob's fourth year at the University of Toronto, where he was studying Geological Engineering. Upon graduation, Bob chose a job as exploitation engineer with Shell Canada, where he could focus on applied technology in his field, and the couple moved out west. They moved frequently in the early years, at first packing all their belongings into their little Volkswagen Beetle. Work took them to spots in Alberta, Saskatchewan, Texas and back again, finally settling in Calgary for good in 1970. After 20 years at Shell Canada, Bob made a strategic move to a small upstart oil and gas company named Canadian Hunter in 1977. Bob enjoyed 14 years at Canadian Hunter, publishing several articles on his own research and supporting and encouraging others' technical development and research. He started his own consulting company in 1992 which he continued to operate well into his "retirement". Bob was instrumental in many significant oil and gas reservoirs discoveries throughout Alberta, Saskatchewan, and British Columbia. He loved geology and would be more than happy to give impromptu lectures to anyone that would be willing to listen.

Editor comment: I don't think that I ever met Bob but I certainly know his name and of some of his work both at Shell and at Canadian Hunter. I was assigned to the Mackenzie Delta on several occasions and his various geological reports from the 1970's were critical to our understanding of that area. It was the cancellation of the Mackenzie Valley pipeline in the late 1970's as a result of the Berger Inquiry that led to Bob's decision to leave Shell and join Canadian Hunter. The Delta was going "on ice" just as the Deep Basin play that Hunter was spearheading was starting to move forward in leaps and bounds. There was a whole crowd of Shell people that were "poached" by Hunter at that time – Hunter recognized strong professionals and Shell was a happy hunting ground for them. In addition, as many said, it was a very easy transition because all they had to do was to walk across the Plus 15!

Goodwin, Duncan William. Born January 4, 1929 in Calgary, Alberta and passed away December 26, 2021. Duncan grew up in Calgary. He excelled at gymnastics, swimming and he bicycled everywhere: to and from school as well as delivering newspapers and groceries. Sometimes he took the trolley to Bowness Park to swim in the lagoon. Duncan was an avid reader, often reading by flashlight under the covers late into the night. As a teenager, his independent streak led him to hop a freight train leaving Calgary to pick fruit in the Okanagan and hang around the pool hall he honed his game to "pool shark" status.

After a year of Engineering at U.B.C., Duncan began his career as a "computer" on a seismic crew, working his way up to geophysical interpreter and party chief. This required him to travel all across the prairies and northern Canada. His young family grew by four kids, all living in a small trailer in order to move around to different rural work sites. In 1960, they moved into their newly built home in Calgary, just in time for the children to start school. Travel sometimes took him away from the family, and Duncan wanted more time off in the summer to enjoy family camping trips. He decided on a mid-life career change to become a high school English teacher. While still working full-time, Duncan enrolled at the University of Alberta, Calgary Campus (now U. of C.), and graduated with a B.Ed. in 1967. Before he could start teaching though, the oil

industry made him an offer he couldn't refuse! Duncan continued working in geophysics and eventually entered a successful consulting partnership with Lundberg and Goodwin. He was able to retire early to pursue his hobbies of golf, travel, and winemaking.

Heathcott, Robert Vernon. Born October 17, 1928 in Calgary, Alberta and passed away December 24, 2020. Bob grew up in the Mission district and attended Holy Angel and St. Mary's Schools. Bob played hockey in the Calgary Buffalo organization, the Junior "A" Wetaskiwin Canadians and football for the West End Tornados. He finished his high school education at St. Michaels College in Toronto while continuing to play football and Junior "A" Hockey. Upon graduation, Bob attended the University of Michigan on a Hockey Scholarship where "Happy" earned his B.Sc. in Geology as well as winning two N.C.A.A. Championships and was twice named All American. Bob finished off his playing career with the C.P.R. Beavers of the Alberta Senior league. In 1952, Bob returned to Calgary and began his tenure in the Western Canadian oil patch. In the early years he worked for Sun Oil and Scurry Rainbow Oils amongst others. In 1968, Bob struck out on his own with the incorporation of Heather Oil Ltd. which is still an active operating company today. Much of Heather's early business was conducted from the West End Legion which was frequented by many of Bob's heroes.

Hutton, Andrew (Neil) Neilson. Born May 28, 1934 in Strathaven, Scotland and passed away December 23, 2020. Neil was an adventurer, scientist, and lover of animals. Neil's first grand adventure away from his home in Scotland was as a field geologist in northern Ghana, where he worked in the bush. After completing his doctorate in Geology at the University of Glasgow in 1966 Neil and his young family decided to emigrate from Scotland to Canada. Arriving in Calgary, Neil continued his career with Texaco Exploration Canada where his technical and leadership qualities resulted in a rapid rise in management. Neil left Texaco as assistant chief geologist in 1979 to cofound Petrel Consultants Ltd. a geophysical / geological consulting firm. During his career, Neil contributed to Canadian Society of Petroleum Geologists on the executive and as President for 1982. His work was recognized by the award of Honourary Membership for distinguished services to the society. Neil continued to consult independently until the call of the outdoors and travelling proved too compelling.

Keith, Robert Lawrence (Bob). Born October 29, 1938 in Calgary, Alberta and passed away January 11, 2021. Bob grew up in Turner Valley until the age of fourteen years, when his family moved to Coleville, Saskatchewan. He lived there for two years and then returned to Calgary where he finished school. Bob went on, at the age of eighteen, to join the Navy and serve his country for five and a half years after which he returned to Calgary. Bob was a talented carpenter and contractor having spent forty years in the construction industry, the majority as the owner of Royal-Lite Builders. Bob was known for his mischievous sense of humour; he was a storyteller and one never knew when he was telling the truth! At a moment's notice, he was always game to head into his garage to bring to life any crazy idea that his family suggested.

I couldn't resist including this one although Bob wasn't really an oilpatch guy. The punchline is that "You can take the boy out of Turner Valley but you can't take Turner Valley out of the boy". Why else would he call his company "Royal-Lite"?

Lehew, Rogers H. Born in 1928 in East Texas and passed away on March 16, 2021. He was born the youngest of three in a small rural oilfield community. When Rogers was still young,

the town was rocked by an explosion at the local school caused by a gas leak which killed over 310 students and teachers, including his sister. In the aftermath, Rogers learned the value of close friendships, a tight-knit community and the opportunities provided by education.

As a former coach and General Manager of the Calgary Stampeders (1960-1974) and former Vice-President of the Detroit Lions (1974-1977), Rogers' public accomplishments were significant and lasting. His place on the Calgary Stampeders Wall of Fame as a Builder, and in the University of Tulsa Hall of Fame as a player and coach, are testaments to his skills and dedication. His lasting Stampeders legacies include the conception and adoption of the white horse symbol, the development of the Quick Six Touchdown Horse, and (most important to him) the development of the President's Ring award presented annually to the Stampedeer chosen by the players for both on and off-field excellence. It is difficult to find another person who was so pivotal in the development of football culture in southern Alberta.

In his post-football years, Rogers' dedication to his friends and impact on his community continued when he became Vice-President of Can-Tex Drilling, and later as the President of the D'Arcy Ranch Golf Course. Throughout his life Rogers maintained an active role in the community as a charter member and past president of the North Hill Rotary Club, Chairmen of the 39th Oilmen's Golf Tournament, board member of the Calgary Petroleum Club, and a long-time member of the Calgary Golf and Country Club. Rogers also was a founding supporter and board member of EducationMatters and founded the Leheh/Wyman Fund in support of extra-curricular school programs. Throughout his life he continued to be an avid golfer, hunter and connoisseur of good margaritas.

The event referred to at the beginning of Roger's obituary was the explosion on March 18, 1937 at a school in New London, Texas, south of Kilgore in the East Texas Field. According to the American Oil and Gas Historical Society the tragedy was caused by the build-up of unscented natural gas beneath the building that was ignited by a wood shop electric sander. The background is that the modern school had been built earlier in the 1930's at a cost of \$1 million (a lot at that time) and had been supplied from its inception with gas purchased from the Union Gas Company. In early 1937 the school board apparently cancelled that contract to save money and instead tapped into a pipeline carrying residue (casinghead or solution) gas operated by the Parade Gasoline Company – an unauthorized but commonplace practice at the time. Walter Cronkite was one of the first reporters on the scene. The tragedy has been the subject of several books that are available through Amazon.

Lougheed, Jeanne Estelle. Born October 27, 1928 in Forestburg, Alberta and passed away December 27, 2020. Jeanne grew up in Camrose and Edmonton, Alberta. Jeanne excelled in her Fine Arts degree program at the University of Alberta and was active in voice and theatre. She soon caught the eye of Peter Lougheed, also U. of A. student, who had a love for sports. A date at the U. of A. "Tuck Shop" began their courtship. It was through Jeanne's eyes that Peter came to appreciate the world of music, ballet, opera, and theatre - although she couldn't quite teach him to sing in key. Peter taught Jeanne to appreciate sports, but she never attempted the spiral toss. Jeanne Rogers wed Peter Lougheed in Edmonton in 1952. Jeanne supported Peter's business and legal career and later his pursuit in politics. In 1971 Peter became the first Progressive Conservative Premier in Alberta's history. Jeanne took on a public role, supporting many causes throughout the province, particularly in arts and culture. With the loving nudge of Jeanne, Peter's new government created the first Ministry of Culture and later the Alberta Foundation for the Arts.

Jeanne was an active supporter of the Edmonton and Calgary Symphony Orchestras, the Alberta Ballet, and especially the Banff Centre of the Arts. She supported the establishment of the Banff Television Festival, now the Banff World Media Festival. She was an active supporter of the National Ballet of Canada. During the establishment of Kananaskis Country, Jeanne, along with other key supporters, advocated that Alberta's newest mountain recreation area should be accessible to those with physical and developmental disabilities, leading to the establishment of the William Watson Lodge. The Lodge to this day provides barrier-free access to the majesty of the Canadian Rockies. After Peter Lougheed left public life in 1985 Jeanne continued to play an active role in many areas. She was a Director of the Canada Council of the Arts, served as a member of numerous corporate boards, and supported many civic and national organizations.

Details of Peter Lougheed's long and event-filled career are available through Wikipedia. Given how important his role was in Alberta during the 1970's and 1980's, the complementary role that Jeanne Lougheed played is an important though often overlooked aspect of those times.

Lovecky, Joseph Edward. Born June 23, 1936 and passed away July 1, 2021.

Joe was born in Flin Flon, Manitoba. From an early age, Joe was a very hard worker, assisting his father in a trucking business with the North American Lumber Company. He attended Flin Flon Collegiate, graduating in 1954, and went on to obtain a chemical engineering degree from the University of Saskatchewan in 1958. From these early beginnings, Joe had a long and successful career with British American Oil and its successor, Gulf Canada, including a ten-year assignment in Kuwait (1972-82). During his Kuwait assignment, Joe was assigned to London, England, by the Kuwait Oil Co. as the project manager for a major gas project. This huge undertaking was successfully completed in 1976. Upon his return to Kuwait, he was appointed general manager of the overall project and existing L.P.G. facilities, a position he held until being reassigned to Gulf Canada in Calgary. During his career, he was a mentor to many Gulf employees and helped further their successful careers within Gulf and other oil companies in Calgary. He brought an incredible work ethic and conscientiousness in all his work. Joe stayed active in retirement as a consultant for Glencoe Resources, a position he enjoyed and maintained for several years.

Milner, Stanley A. Born in Calgary, Alberta and passed away April 21, 2021. Stan grew up in Turner Valley, the youngest of four brothers. He attended the University of Alberta where he earned an engineering degree while working in the oil and gas business. He went on to form Chieftain Development in 1964 and Chieftain International in 1988. Stan enjoyed his time on the Boards of Directors of several Canadian and U.S. companies including Alberta Energy Company Ltd., Banister Continental, Canadian Imperial Bank of Commerce, Canadian Pacific Limited, Delhi International Oil Corporation, Southern Union Company, Supron Energy Corporation, Wardair, Inc. and Woodward Stores Limited.

Throughout his career, Stan remained dedicated to Edmonton. He was the Chair of the Edmonton Public Library Board of Trustees from 1963 to 1968 and during that time spearheaded the construction of the main library as a project to celebrate Canada's 1967 Centennial. His years of work on behalf of the Edmonton Public Library were recognized when the downtown Library was named in his honour in 1996. In so designating the building, the Library's Board of Trustees stated it was acknowledging Stan's years of dedicated service to

promote libraries and lifelong learning. Over the years Stan remained committed to the Library. He served as Honorary Chair of the Library's first capital fundraising campaign, "Foundations of Learning". The campaign enabled the building of three new libraries in Edmonton. In 1999, Stan agreed to chair a campaign to raise funds for major interior renovations to the Library named in his honour. The renovations to the Children's Library are a result of a generous donation made to honour the memory of his daughter Shelley Milner.

Stan received numerous awards and honours including the Order of Canada (OC), the Alberta Order of Excellence (AOE), Meritorious Service Medal (MSM), Canadian Forces Decoration (CD), an Honorary Doctor of Laws from the University of Alberta (LL.D), 125th Anniversary of the Confederation of Canada Medal, the Queen Elizabeth II Golden Jubilee Medal, a Canadian Business Leader Award from the University of Alberta and the Northern Lights Award of Distinction - Edmonton Chamber of Commerce. He was inducted into both the Canadian Petroleum Hall of Fame and the Business Hall of Fame - Junior Achievement of Northern Alberta.

Moore, Barry Kells. Born June 23, 1927 in Winnipeg, Manitoba and passed away December 28, 2021. Barry grew up in depression-era Winnipeg in a loving family, eventually making his way to the beckoning opportunities of the promised land of Alberta. It was in Alberta that Barry forged his illustrious and rewarding career in the oil industry, starting as a roughneck in the 1940s, and ending, after 36 years of dedicated service, as a senior geologist - a living legend at Mobil Oil Canada.

Pelletier, John Charles. Born February 15, 1934 in Ottawa, Ontario and passed away November 28, 2020. John grew up on the hard streets of depression-era Montreal and learned from an early age to punch above his weight class, a necessity given his (claimed) 5' 4" frame, his 120 lb. (wet) weight and his propensity for poorly controlled sarcastic commentary. He left Montreal in the 1950's for the open skies and wider opportunities of the West. An incredibly smart man, John learned the science of geophysics on the job, earning a role as a "Computer" on a seismic crew thanks to his ability to compute the depth and velocity of seismic signals using a slide rule. He was among the first people to explore Canada's arctic waters commercially, recording marine seismic through the Northwest Passage on a survey ship in the early 1970's. His 1975 survey of the passage aboard the Canadian-flagged M.V. Theta has been included as supporting evidence to Canada's claim of sovereignty over these Arctic waters. Ultimately, John retired as a Senior Geophysicist at PanCanadian Petroleum where he oversaw geophysical exploration of the entire Western Canadian Plains region. John was always active in the community. He volunteered as a projectionist at his sons' elementary school, showing films on the gymnasium wall at a time when doing so was nearly as complicated as adjusting the valves of a V-8 engine. He was gregarious to a fault. He couldn't buy a tank of gas or a loaf of bread without engaging the clerk in some absurdly involved conversation, much to the chagrin of those left waiting in his car until they were inevitably regaled with the life story of the erstwhile stranger he'd just met.

Peterson, Robert Byron. Born 1937 and passed away January 21, 2021. Robert grew up in Saskatchewan and was awarded a scholarship to Queen's University in Kingston, Ontario where he earned his B.Sc. (1959) and his M.Sc. (1961). He joined Imperial Oil in 1960 and remained with the company until his retirement in 2002. His career took him to many locations in Canada and the United States ending in Toronto as the Chairman and C.E.O. of the company.

As a youth sports coach, mentor and eventual head of one of Canada's most prominent companies, Robert delivered a constant message of leadership, ethics, governance and social responsibility. He was known for his ambition fed by his enduring preparation and thoughtfulness. Among several distinctions, he served on the boards of the Royal Bank of Canada and the Conference Board of Canada. He was a 2003 Inductee into the Canadian Petroleum Hall of Fame.

Picherack, Michael Paul. Born July 15, 1946 in Kingston, Ontario and passed away January 12, 2021. Paul graduated from Queen's University in his home town of Kingston, Ontario in 1969 with a Bachelor's of Science in Chemical Engineering. Upon graduation, he started his career with Gulf Canada, where he had a very successful twenty-year career with numerous professional accomplishments. Paul made many friends and mentored young engineers during his time at Gulf.

In 1992 Paul moved to Moose Jaw, Saskatchewan, where he was Refinery Manager at Wascana Energy for six years. Paul took the position of Plant Manager with CS Resources in 1997, where he gained his initial experience with S.A.G.D., a technique for producing bitumen with steam. He became an early expert in the field, publishing articles in industry peer reviewed journals. When CS Resources was acquired by PanCanadian, Paul became Manager, Thermal Operations and Team Leader for debugging, operation and development of the Senlac S.A.G.D. Thermal Project. By December 2003, he was Manager Facilities/Engineering at MEG Energy. Paul played a major role in the development, commissioning and operation of the production plant at Christina Lake and made many close and valued friends. Paul was very proud of his career that spanned forty-three years as a professional engineer in the oil industry.

Family was of paramount importance to Paul. He taught them about commitment, hard work and honour but mostly, about Star Wars. He was a man of great wit and many interests and talents. His favorite hobby was building historically accurate model sailing ships. He also enjoyed building and collecting historical miniature artillery. Most would know Paul as a bibliophile; he was a voracious reader and collector of dense and unique tomes.

Rabey, Westley Noel. Born April 18, 1922 in Moosomin, Saskatchewan and passed away June 21, 2021. Wes grew up in Manila, Ontario, where his father had a gas and service station. He participated early, learning about hard work and dedication, driving cars by eleven and taking over responsibility at sixteen while his father was hospitalized. He graduated in 1944 from University of Toronto Applied Science and Engineering with an honours degree in Mining Engineering. He also received officer training in the Army Engineers.

In 1945 Wes joined Imperial Oil and began his illustrious career in the oil and gas industry, going to the U.S. to do seismic work and train in geophysics. Back in Canada in 1946, as Imperial Oil "Chief Computer" he was the first to map Leduc, the geological structure that led to the largest oil boom in Alberta history. He also discovered an anomaly which he thought was the most promising structure that he had seen on the prairies, which after much persuasion was developed and known as Redwater. In 1950 he started the first of many companies and performed the first seismic participation survey ever done. In 1958 Wes moved to England to manage the international operations of Geoprosco Ltd. He returned to Canada and in 1966 started Sigma Explorations Ltd., a company that provided participation surveys for the exploration industry and, for the first time, brokerage services for seismic data. Sigma is still in

business today. He also started PetroVentures and RayQuest Holdings. As President of the Canadian Society of Exploration Geophysicists, he participated with the Provincial Government in setting policy for the Alberta oil and gas industry. In 1998 he was inducted into the Canadian Petroleum Hall of Fame for his original contributions to the seismic industry. Wes was a pioneer in the oil and gas business and created new seismic surveying techniques for application in the Arctic. He participated in many ventures, mentoring and promoting many new companies and entrepreneurs. Wes was an original thinker, an enthusiastic and positive participant and leader. He often said that he had no regrets, and that he woke each morning eager to see what the day had in store.

Wes was a member of The Glencoe Club, the Earl Grey Golf Club and the Petroleum Club for over fifty years. He was a curler, a fisherman, a scratch golfer and a very good bridge player. He was unbeatable at crib. He enjoyed all of these activities well into his nineties. He regularly attended the Oilman's Golf Tournament and the Doodlebug Tournament. He loved to sing and dance. He was always planning something, getting people involved, making things better.

Seaman, Byron (BJ) James. Born September 7, 1923 in Rouleau, Saskatchewan and passed away April 24, 2021. While growing up BJ and his brothers worked on their father's road construction business. It was their mother's wish for her children to earn a university education, so the family moved to Saskatoon where in 1945 he graduated from the University of Saskatchewan with a Bachelor of Science in Mechanical Engineering. Family values, hard work and entrepreneurial ambitions were instilled in BJ early on by his mother and father. Soon after graduating, he moved to Alberta in pursuit of promising opportunities which resulted in the start of a booming oil and gas industry. Amongst Alberta's most successful businessmen and pioneers of the industry, he and his brothers, Daryl (Doc) and Donald (Don) Seaman formed Seaman Engineering and Drilling, later changing its name to Bow Valley Industries.

BJ's other contributions to the industry included membership in numerous professional organizations, such as advisory councils on science and technologies, and various Government committees. BJ had significant accomplishments throughout his life resulting in many honors. These include recipient of the Governor General's Medal, induction into the Alberta Sports Hall of Fame, and an award for outstanding contributions to society from the Association of Professional Engineers, Geologists and Geophysicists of Alberta. In 1992, BJ received an honorary Doctor of Science degree from the University of Saskatchewan and was named one of the College's most Distinguished Graduates. BJ was an original Calgary Flames owner and a devoted fan who followed the team passionately during his remarkable thirty years of ownership. His enthusiasm for athletics carried into his personal pursuits. Along with his brother Doc and good friend Harley Hotchkiss, they created grassroots programs such as Project 75, now called the Seaman-Hotchkiss Hockey Foundation.

Taylor, Gordon Cosmos. Born October 13, 1934 in Prince Albert, Saskatchewan and passed away April 13, 2021. Gord was a well-known geologist who worked for many years at the Geological Survey of Canada's Institute of Sedimentary and Petroleum Geology in Calgary. His early technical focus was on the regional mapping, stratigraphy and structural geology of the Foothills and Front Ranges of the northern part of the Canadian Rocky Mountains in British Columbia and Alberta. Later in his career he was involved in the numerical assessment of resource potential for basins across Canada, both onshore and offshore.

Turgeon, Donald Laurent. Don was born on the Angus Farm near Kincaid, Saskatchewan on May 29, 1935 and passed away on April 25, 2021. Don joined the Regina Leader Post in 1953 as apprentice printer. He received his Journeyman ticket five years later. In 1963 Don and family moved to Calgary where he continued his career at the Alberta Telephone Directory department and Alberta Government Telephone (AGT) - Yellow Pages, a company that later became Telus. At the time of his retirement Don held the position of Vice President Production and Advertising Services. Don had a passion for his woodworking hobby and spent endless hours building children's furniture and cabins.

Don is survived by his loving wife Helen. They met in 1952 in Regina and were married for almost 67 years. Helen was a long-time member of the Board of Directors of the Petroleum History Society, a driving force behind the Desk and Derrick organization and a 2000 inductee into the Canadian Petroleum Hall of Fame. Don accompanied Helen to many of functions including those of the P.H.S. and the C.P.H.F. Our condolences, previously expressed as well, to Helen on her loss.

Varga, Imre (Emery). Born May 12, 1930 in Vásárosmiske, Hungary and passed away January 15, 2022. Imre was the youngest of five children whose parents valued and demonstrated a hard-working, family-loving ethic. The backdrop of WWII that literally played out in his village and the local district impacted Imre's formative years. After graduating from high school with honours, he obtained his Bachelor of Science degree in Petroleum Engineering (1954) from the University of Miskolc - Sopron. Following his undergraduate training, Imre worked as an engineer in Budapest at the Head Office of the Mineshaft Building Construction Trust Company. In the evenings, he took classes at the university working towards his Master's Degree in Mechanical Engineering. Unfortunately he was not able to complete it as the Hungarian Uprising broke out in October 1956.

With a strong passion and pride in his homeland country, Imre actively participated in The Uprising. He was elected Chairman of the Revolutionary Labour Council at his workplace. In the late fall of 1956, Imre was faced with the most difficult choice of his life and, by necessity, escaped from Hungary and travelled to Austria, where, by fate, he met up in Vienna with other former Sopron University colleagues. Through a sponsored relationship between the Mining Engineering faculties at the Sopron University with the University of Toronto, Imre made his way to Toronto via Montreal, arriving in early 1957. Shortly afterwards, he met Margaret, and a few months later they married. They then moved to Calgary hoping for a better chance to utilize his petroleum engineering background.

After finding work as a drilling roughneck and then a draftsman, Imre was successful in demonstrating his technical proficiency of his education. In 1960, he became registered as a Professional Engineer with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (A.P.E.G.G.A.). As a petroleum engineer at Texaco Canada Limited, he worked for nearly 30 years in various technical, operations, business venture and management roles of increasing complexity and responsibility. He was a natural problem solver that, when coupled with his education, made for very interesting, and often elegant and practical solutions. One of his fondest memories was his experience as the lead project manager on a deep-water drilling venture off the coast of Newfoundland which included a deep-water dive to the ocean floor to check out the blow out preventer system, while marveling at the numerous fish species of all colors and sizes. After Texaco he spent five years at the Alberta regulator,

then the Energy Utilities Board, supporting the Drilling and Production Department. While there, Imre was placed on a special assignment from 1990 to 1993, participating in an international committee to review, update and rewrite the Hungarian Mining, Oil and Gas Laws and Regulations. For this work, Imre received the Officer's Cross of the Order of Merit from the Government of Hungary with the acknowledgement of the Government of Canada.

Between 1994 and 2010, Imre worked as a Petroleum Engineering Consultant on various local and international projects. He developed both keen professional and personal relationships while working with his First Nations clients, providing technical and educational sessions. After an extensive and rewarding professional career, Imre finally retired at the age of 80.

Following his arrival in Calgary in the late 1950s, Imre became one of the leaders in the Hungarian community in Alberta. He was instrumental in the development of the current St. Elizabeth of Hungary Church in Calgary. Imre enjoyed getting together with business associates and friends at the Petroleum Club. He also enjoyed travel. With his family, he drove gravel roads to northern Alberta oil and gas drilling sites, highways through mountain passes to the West Coast, across Canada to Montreal for Expo 67 as well as south to Spokane for Expo 74.

Imre was a long-time member of the Petroleum History Society. On October 24, 2006 he presented to us a luncheon talk entitled "Hungary's Loss, Canada's Gain" on the subject of the contributions that individuals who fled from Hungary had played in Canada's development.

OTHERS OF NOTE:

Middleton, Gerald Viner. Gerry was born in England in 1931 and passed away in 2021. He earned his Ph.D. in Geology from Imperial College in 1954 by studying Devonian rocks in Devon. He then emigrated from the U.K. to Canada and gained employment with Chevron in Calgary. In 1955 he moved to McMaster University in Hamilton, Ontario where he remained for the rest of his career. His initial research on carbonate rocks was supported by Shell Oil where he interacted with many of the prominent research scientists of the day. After a short time he drifted into research related to clastic rocks – sandstones in particular - and it was there that he made his mark. The details of his contributions are beyond the scope of this note but they involved mechanisms for the transport of sandstones into deep water as deduced from field observations and novel model experiments involving flumes. With the potential of shallow water deposits increasingly exhausted, such deep water deposits (or turbidites and associated sediments) have become increasingly important, for example in the Gulf of Mexico. Gerry's early works are the ancestors of our current understanding of those important reservoirs. A comprehensive obituary of Gerry's professional life and accomplishments was written by Drs. Bob Dalrymple and Janok Bhattacharaya and was published in the January 2022 issue of the Canadian Society of Petroleum Geologists's *Reservoir* magazine (pp. 14-16).

Gerry also had a historical bend. I met him at the meeting of the UNESCO-related International History of Geology (INHIGEO) symposium that was hosted in Calgary in 2009. Gerry presented a paper on the history of geological research in the Shell organization. He was also into architectural history and had spent considerable time in his retirement studying and publishing on the buildings of the Hamilton region.

Schindler, David. Dr. David Schindler, Killam Memorial Chair and professor of ecology at the University of Alberta from 1989 to 2013 passed away on March 4, 2021 at the age of 80. He was a passionate scientist who specialized in the study of fresh water ecosystems including phosphates, acid rain, climate change, UV radiation and transboundary pollutants. This brought him into conflict with several industries in Alberta, specifically the pulp and paper sector and the oil sands. It was his belief that the contamination of surficial and ground waters was the cause of abnormal levels of cancers in those who relied upon them, in particular First Nations downstream of Ft. McMurray.

A memorial tribute to David was published in the July/August 2021 issue of *Alberta Views* magazine (p. 24). It was written by Andrew Nikiforuk and originally appeared in *The Tyee* magazine's March 9, 2021 issue. Andrew called him "a force of nature for nature".

MORE NEWS

Other significant milestones:

2020 - OPEC – 60th Anniversary.

2022 - Bennett-Jones – legal firm – 100th anniversary. See BennettJones.com/100years

2022 - Alberta Geological Survey (and predecessors) – 100th Anniversary.

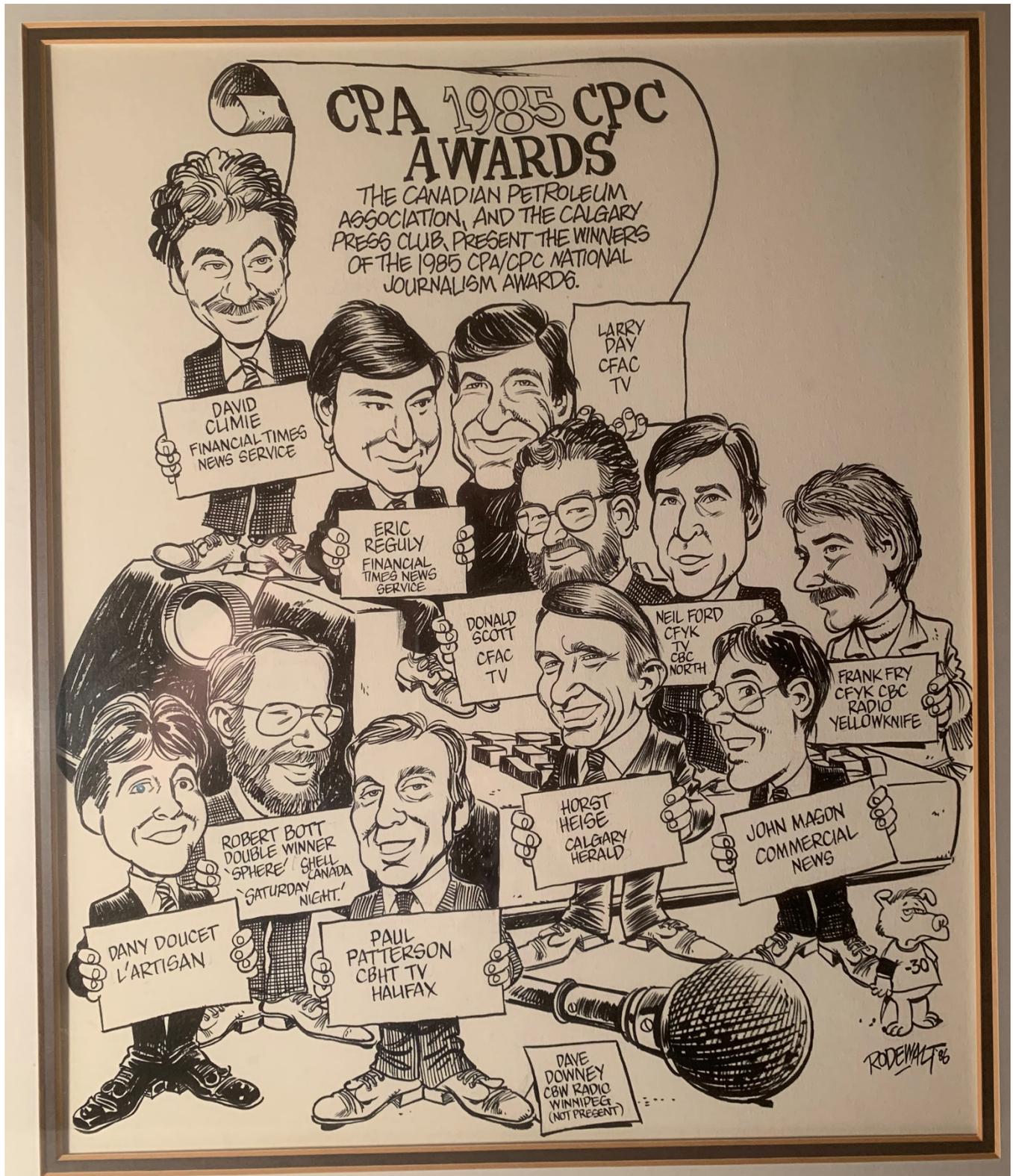
2022 - British Columbia Oil and Gas Commission – 20th Anniversary.

2022 - Ocean Ranger sinking, Grand Banks (February 15) – 40th Anniversary.

2022 (upcoming, April 14) - Titanic sinking, Offshore Newfoundland – 110th Anniversary.

Seismic Status: There is a move afoot in the academic world by researchers to get their hands on petroleum industry seismic lines. Their pitch line goes something like "since the petroleum industry is dying, why don't you just give us your seismic lines?". Seismic brokers would be rolling around in their graves. Industry seismic is a significant financial asset that can be bought and sold and is often used as leverage for doing business deals. Our industry is not dying so this "smash and grab" for a part of our world seems somewhat outrageous. The only aspect of it that may have some merit is for lines that were shot a long time ago in areas that are now permanently off limits to E&P, for example national parks and marine protected areas.

Witness protection: In May 2021 it was announced that the Canadian Association of Oilwell Drilling Contractors (C.A.O.D.C.) has changed its name to the Canadian Association of Energy Contractors (C.A.O.E.C.). The association was originally established in 1949. The change reflects a migration of industry activity into more than just petroleum-related activities. In a related sector, the U.S.-based Petroleum Equipment and Services Association (P.E.S.A.) and the Association of Energy Service Companies (A.E.S.C.) have merged to form the Energy Workforce and Technology Council (presumably the E.W.T.C.). This wave of industry rejigging can be confusing but appears to have been driven by the boom and bust (or bust and boom) situation that we are always in.



Excellence in Journalism 1985. This commemorative cartoon by famed cartoonist Vince Rodewalt features Canada's top journalistic performers as recognized by the Canadian Petroleum Association and the Calgary Press Club. Is it any wonder that our very own Bob Bott is amongst this illustrious crew?