

ARCHIVES

Newsletter of the Petroleum History Society

November 2024; Volume XXXV, Number 5

P.H.S. Luncheon – Wednesday, November 27, 2024

The Future History of Petroleum
By Allan Fogwill



This presentation will explore the world's demand for petroleum in the face of our changing climate.

Please see page 2 for talk abstract and author's biography.

Time: 12 noon, Wednesday, November 27, 2024
Place: Calgary Petroleum Club
319 - 5 Avenue SW, Calgary (Cardium Room)
Dress – business casual.
Cost: P.H.S. Members and Student Members \$40 and Guests \$45 (most welcome).
Only cash or cheque at the door. Payment can be made in advance by Interac or
PayPal transfer to treasurer@petroleumhistory.ca Please advise payment
method with reply.
Lunch: Soup, sandwiches and cookies. Gluten-free? Vegan? Advise with reply.

NOTE: Instructions for registering for the Luncheon

Reply, if you wish to attend, to Treasurer Ian Kirkland via his email
treasurer@petroleumhistory.ca

The deadline for registration is Monday, November 25th at noon.

Please be advised that those who register but do not attend or cancel after the deadline, will be invoiced.

Those who do not register by the deadline may not be accommodated.

These restrictions are related to our obligations to the Petroleum Club in terms of catering and seating.

Luncheon Speaker's Abstract: The Future History of Petroleum

This presentation will explore the world's demand for petroleum in the face of our changing climate. It will show that all energy systems will be needed to tackle the challenges of affordability, sustainability, and reliability. It will argue that the demand for petroleum will need to be met for many decades. This means our petroleum systems must be as low-emitting as possible, as well as affordable and reliable. The presentation will note how the sector is rising to the low-emitting challenges, and it's only a matter of time before upstream oil and gas will be a very low-emitting energy source. Petroleum and other fossil fuels, nuclear and renewables, and storage (electricity and CO₂) are all key elements of an evolving system.

Luncheon Speaker Biography

Allan Fogwill joined Petroleum Technology Alliance Canada (PTAC) in 2021 as its COO. He is an energy sector executive with over 35 years of experience in both the public and private sectors. Allan's background has focused on economic, technological, and market analysis of energy sector issues and energy policy development related to climate change, utility regulation, and energy demand.

Allan has previously worked as president and CEO of the Canadian Energy Research Institute. He has also worked with natural gas distribution companies in BC and Ontario, focusing on integrated resource planning and demand-side management programs. At the Ontario Energy Board, Allan handled market analysis, utility infrastructure approval, and transmission and distribution costs.

Allan has a Master's degree in natural resources management from Simon Fraser University and a Bachelor of Science degree from the University of Saskatchewan. He sits on the advisory boards of the Asia Pacific Energy Research Centre, the Canadian Centre for Energy Information, and the International Institute for Middle East and Balkan Studies. He has also served as the Chair and CEO of the Canadian Energy Efficiency Alliance and the Canadian Gas Research Institute. Allan Fogwill is a 15-year veteran of the Canadian Forces.

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

The Bull Wheel



Next P.H.S. Luncheon Meetings: To be announced in the near future.

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 or Editor Bill McLellan at the email addresses indicated at the top of this page.

Donations and endowments: We would like to ask members to consider adding a small donation to our Society as a part of your estate planning to ensure the preservation of Canadian petroleum history and enable us to promote the contributions made to the Canadian economy by our petroleum industry and by the many dedicated individuals who have been and are involved in it. As you are aware, the P.H.S. does not have charitable status with the Canada Revenue Agency and therefore cannot issue tax receipts – but that does not detract from the worthwhile nature of our endeavors. Thank you for your consideration.

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

International Development: On August 27, 2024, it was announced in Stavanger, Norway that Calgary Mayor, Jyoti Gondek, had been named as the new Vice President of the World Energy Cities Partnership (WECP). This is an international coalition of cities whose economies are directly tied to the energy sector. Eighteen cities are involved with Edmonton being notable for its absence. Calgary may bid on holding an upcoming WECP conference.

Isn't it Ironic: This month the huge UN Climate Change Conference (COP29) is being held in Baku, Azerbaijan following in the footsteps of COP28 that was showcased in Dubai. Baku would seem to be the last place that one would think of for such an event. That city and surrounding region on the Caspian Sea are the locations of some of the earliest petroleum production dating back into the early 1800's, if not before. It was a centre of global production at the end of the 19th century and early 20th century, being a critical petroleum source for business interests that included the Nobel brothers, the Rothschild family, Markus Samuel and Fred Lane of Shell and others. Refined kerosene was shipped in tins from Baku to Batum on the Black Sea coast and from there to the Far East. During Soviet times, intensive development took place, unconstrained by environmental considerations, leading to a colossal mess. It would appear that the industry has cleaned up its act to some degree although the state of reclamation is not clear.

The government of Azerbaijan has benefitted from the industry to the extent that it can sponsor major events like COP.

U. of C. Petroleum Engineering Revival: On May 24, 2024, it was announced that the university was breathing life back into this part of its offerings after having shut down its Bachelor's program in 2021. Apparently, there has been a resurgence of interest driven by a reasonably buoyant industry and economy. Hopefully they don't make this same curriculum-related mistake again.

Museum Uproar: As reported in the Spring 2024 issue of *Alberta History*, the closure and planned demolition of the old Royal Alberta Museum building in Edmonton (102 Avenue and 129 Street) has led to some solid opposition seeking to halt this drive and to support the re-use the venue for research and historic record preservation. The edifice was opened in 1967 as a Canadian centennial project. A leading proponent of this preservation initiative and author of the article is Adrianna Davies who is well known to the P.H.S. as she was one of our key interviewers for the Oil Sands Oral History Project. It seems like the government should reconsider the plan to turn a perfectly functional and historically significant building into a green space.

Alberta Energy Regulator Review: New P.H.S. Board Director Bill Whitelaw (welcome aboard Bill!) pointed out that a strategic review of the A.E.R.'s role and organization entitled "Final Report: Premier's Review of the Alberta Energy Regulator" had been released and was available on-line at: <https://www.alberta.ca/system/files/em-premiers-review-alberta-energy-regulator.pdf>. Given the critical part that this regulator plays in our industry, a read though this document would be worth the time.

On the Lighter Side: A recent obituary for adman Len Sirowitz, published in the *Globe and Mail* on March 16, 2024, highlighted Len's work for Mobil Oil. Mobil saw that stressing road safety was important. One ad that Len helped create was described as "Another TV ad for Mobil showed a couple canoodling in a car as the man drives against the blinding lights of oncoming traffic, eventually leading to a crash. A narrator says: "We at Mobil sell gasoline and oil. We are in favour of driving and love, but not at the same time". Good advice!

Flashback: You will recall the Discovery Channel series "License to Drill" that was produced by Montreal-based Pixcom and was honoured by the P.H.S. with its 2010 Preservation Award. Apparently Pizza73 wants to keep this memory alive as they have featured their Crispy Chicken Wings with Dill Sauce as "License to Dill".

The Man who Shot Dallas: An obituary for David Jacobs, writer and producer, was included in the August 28, 2023 issue of the *Globe and Mail*. Jacobs was behind the creation of the series "Dallas" that first aired in 1978 – which, of course, you all remember. J.R. Ewing was played by Larry Hagman and at the end of the third season he was shot in a cliffhanger episode leading to a prolonged period in which everyone was wondering "Who shot J.R.?". In the article, it was mentioned that when the title "Dallas" was first proposed, there was opposition because of the connection of that city with the assassination of President Kennedy and the perception that people allegedly had that "Houston is an oil city and Dallas is a banking city". But apparently no one wanted to watch a program called "Houston".

Fracking formula: The Red Cross First Aid Manual describes the use of nitroglycerin for the treatment of Angina Pectoris, a heart condition. The manual states that “Nitroglycerin enlarges the blood vessels to make it easier for the heart muscles to get blood”. Apparently, nitroglycerin worked the same way when it was used to stimulate or “shoot” wells to improve deliverability. A cylindrical vessel or “torpedo” containing nitro was lowered down the well and set off with a bar that was released from the surface when the torpedo was adjacent to the zone of interest. So maybe the medical use of nitro could be called “shooting your heart”?

New TV series: A new program about the petroleum industry has been announced and will apparently be available on Paramount Plus beginning November 17. It is called “Landman” and is about the Texas oil patch. It is produced by Taylor Sheridan best known for his series “Yellowstone”. According to the synopsis in Wiki, “*Landman is set within the world of oil rigs in West Texas, where “roughnecks and wildcat billionaires are fueling a boom so big it’s reshaping our climate, our economy and our geopolitics”*. Billy Bob Thornton stars as a “crisis executive at an oil company”. Demi Moore and Jon Hamm are also continuing characters. Don’t get your hopes up but it might be worth watching. Couldn’t be any worse than some of the previous depictions of the industry.

Losing their Way: The Petroleum Club seems to have lost focus on what they are about. The Fall issue of their “Club Connections” magazine certainly does feature a high-priced fluid on the cover but unfortunately it is Scotch Whisky and not oil!

A Reminder Regarding the Palliser Hotel’s Photography Exhibition: This free exhibition is open to the public and is currently underway. It commemorates the 110th anniversary of Calgary’s most famous hotel until December 18th, 2024. The current exhibition of photographs, displayed at the hotel’s Mezzanine level is titled: *Be Our Guest, The Guests of Palliser*.

The Chinook County Historical Society is having Harry Sanders present “The 110 Year History of the Palliser Hotel” on Saturday, January 18, 2025, 2:00 pm to 3:30 pm in the Performance Hall in the Central Library.

Annie Murray, of the University of Calgary’s Archives and Special Collections, will be speaking at the Chinook County Historical Society annual Christmas Luncheon, Danish Canadian Club, 727 11 Ave. SW on December 7th. Doors open at 11:00 AM, presentation at 12:15 PM. Annie’s talk will offer a reflection on the life, work, and legacy of Evelyn DeMille (1919-2013) and “Deville Technical Books”. The P.H.S. awarded Evelyn our Preservation Award in 2001. Tickets must be reserved in advance. Contact Sarah Harvey at sarpatharv@gmail.com or by calling (403) 404-8717. The buffet is \$40 for members and \$45 for non-CCHS members.

**Archives is published approximately eight times a year
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Back issues are archived on our website at <http://www.petroleumhistory.ca/>

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The PHS Oil Bibliography – by Doug Cass

The oil bibliography on the Petroleum History Society Website [www.petroleumhistory.ca] is intended to be a tool for researchers and interested people to locate material about the Canadian petroleum industry in all of its aspects. It lists books, periodical articles, theses, unpublished documents on the web and occasionally newspaper articles. There are 8 sections including books & theses, articles, biographical references, fiction & poetry, humour, audiovisual material and reviews of any of these categories. There is also an author listing that provides brief biographical information about the creators of the content.

The bibliography on the PHS website originated when I took a reading course on the Canadian Petroleum industry in 1980 with Professor Tony Rasporich at the University of Calgary. I had to compile a list of possible items to read in preparation for writing a master's thesis at the University of Calgary that was eventually completed in 1985. [Investment in the Alberta Petroleum Industry: 1912-1930]

Throughout my career with the Glenbow Library & Archives and involvement with the Petroleum History Society I gradually added titles that I discovered. At Glenbow I was responsible for collecting personal papers, corporate archives and the files of non-profit groups to build the collections of the Museum. Books and articles about the industry were of great assistance in determining which people, companies and societies that I should approach with an offer to preserve their archives.

In the early years there were no relatively comprehensive websites that compiled bibliographical information and/or digital copies of publications like Google Books, Google Scholar, Library & Archives Canada, Internet Archives, etc., which are the major sources of data in the 2020s. University Libraries were among the first institutions to include published and unpublished items in their online catalogues, including theses produced by those universities. Many items were identified using those catalogues.

Sometime around 2002 the PHS decided to include the bibliography on its website and it has been a resource now for over 20 years. The awards committee of the Society has used the information in the bibliography to compile the annual nominations for awards, particularly in the book and article categories.

Due to copyright laws a large proportion of the books and articles included in the list are not available online, although Google Books, Library & Archives Canada, and Internet Archive do have some complete or partially digitized content on their sites. Universities have been working diligently for years to upload those produced by their students – unfortunately the University of Calgary has not done a major retrospective scanning project so many theses before about 1990, including mine, are not yet available in a digital format. More than 250 of the theses listed in the bibliography were done at the U of C.

I am always on the hunt for additional material so please let me know if you know of new items.

Editor's Note: Doug Cass is one of the founding members of the Petroleum History Society and a long-serving member of our Board of Directors.

The following paper was submitted to Archives by the author, Dustin Brodner. It is an abbreviated version of his oral presentation to the Petroleum History Society at our October 2nd Luncheon Meeting at the Petroleum Club. Part 2 of this paper will be published in our next issue of Archives.

Royalite No. 4 “Wonder Well” Technical History

100/12-07-020-02W5/02

By Dustin Brodner

Presented to the Petroleum History Society on October 2, 2024

Forward

October 15, 2024, is the 100th anniversary of the discovery of commercial petroleum in the Paleozoic Mississippian limestone in Alberta. Royalite No. 4, in a field just north of the Turner Valley townsite, was the well in which the discovery occurred. The Calgary Herald called it the “Wonder Well”. This discovery was a very important chapter for the Province of Alberta. The story needed to be researched and told.

About a year ago, Earl Martin had asked if the Turner Valley Oilfield Society would commemorate the 100th anniversary of Royalite No. 4. My fellow historic Interpreter and I highlighted this fact out to visitors at the Historic Turner Valley Gas Plant during the 2024 season.

In early 2024, Clint Tippet, David Finch and I began researching for a presentation to the Petroleum History Institute Symposium in Canmore. On May 21, 2024, David Finch did a well-received presentation entitled *Answers to Fantastic “Wonder Well” Tales* to the attendees. We decided to do another presentation to the Petroleum History Society closer to the anniversary date. This time, I was asked to present the technical details and historical significance of Royalite No. 4. This paper is a collection of the technical data that I presented on October 2, 1924

Standard Oil’s influence in Western Canada

Imperial Oil was a 100% Canadian owned Company incorporated in 1880 by a consolidation of 16 Independent Canadian oil refiners in Southern Ontario. The Independents consolidated their operations primarily to protect their Canadian oil interests from being swallowed by the economic powerhouse that was J.D. Rockefeller’s Standard Oil in the United States. In 1898 after fiercely competing with Standard Oil, Imperial Oil was desperate for capital and sold a majority share of Imperial Oil to Standard. ExxonMobil, Standard Oil’s successor, still owns a majority share (69.6%) of Imperial Oil.

In 1920, the Calgary Petroleum Products absorption plant on the banks of the Sheep River burned to the ground. After tough 6 years of naphtha production, CPP was almost bankrupt. The CPP management decided on refinancing the company at a meeting on December 24, 1920. An agreement was made with the Imperial Oil Company whereby Imperial oil would financially support CPP, but a new, jointly owned company would be created to operate the properties of Calgary Petroleum Products. The reorganized Calgary Petroleum Products was rebranded as the Royalite Oil Company Ltd. and was incorporated as a Dominion Company on

January 18, 1921. The name Royalite was an Imperial Oil trade name for their illumination kerosene distilled back in Eastern Canada.

Before the creation of Royalite in 1921, Standard Oil had been exploring Western Canada in search of oil via their Canadian arm Imperial Oil via their exploration subsidiary, The Northwest Company. The Northwest Company was created by Standard Oil in 1917 and Alexander M. McQueen, former manager of the Fairbanks Group in Petrolia, was elected as Imperial Oil's director to handle the new exploration company. Imperial Oil held 28% and Standard Oil held 72% of the stock in The Northwest Company. By 1919 Imperial Oil controlled most of the stock and directed exploration operations from its offices in the Tegler building in Edmonton.

By this time the Standard Oil, through its Canadian subsidiaries, had a strong foothold in the Canadian West and were actively exploring for potential oil reservoirs. On one hand this was an invasion of the economic sovereignty of Canada and the British Commonwealth. On the other hand, it was an opportunity for exploration and industrial growth that benefitted Canada. The control of much of the Canadian Petroleum Industry by American Standard Oil is well documented in several books and was a pivotal point in Canadian Petroleum History as covered in detail in David Finch's presentation, *Answers to Fantastic "Wonder Well" Tales*.

Why Data was difficult to find on Royalite No. 4

Over the last 100 years there has been stories and lore written about Royalite No. 4, but technical details were lacking. In 1922, when the well was spudded, there was a very limited regulatory environment in Alberta. Resources in the Province of Alberta prior to 1930 were managed by the federal government in Ottawa. These limited regulations were administered by the N.W.T and Yukon branch of Department of the Interior. This department had jurisdiction on Crown lands only.

Royalite No. 4 was drilled by the Northwest Company. The well is situated on Canadian Pacific Railway (CPR) land. The CPR owned the mineral rights on section 7 township 20 range 2 W5 meridian. Because this was CPR land and not Crown land, the Northwest Company was not obliged to furnish the Department of the Interior with well data, geological samples or production data ... so they didn't. In all probability, this is why the present-day Alberta Energy Regulator (AER) does not have drilling data on the well. Researching the technical aspects required other information sources such as newspaper archives, published history books, industry publications, oral histories and recorded memoirs.

The Southern Alberta Gas Scene in 1922

Natural gas was supplied to the Calgary Natural Gas Company (the municipal utility company) by Canadian Western Natural Gas Company (CWNG) from the Bow Island gas field. The gas



reached Calgary through the 16-inch diameter CWNG main pipeline starting on July 17, 1912. The 16-inch main pipeline was laid along the CPR Right of Way and serviced Lethbridge and several other communities along the railway.

By 1920, the Bow Island gas field was depleting and only capable of delivering a maximum rate of 7 mm sft³/d into the pipeline. Calgary's peak winter consumption was 12 – 14 million sft³/d not including the other communities along the main pipeline. So, in 1921, CNWG was forced to buy more gas to make up their shortfall. CWNG had resisted purchasing gas from Calgary Petroleum Products (CPP) and their successor company, Royalite in the past but now they had little choice. CWNG built a 6-inch feeder pipeline from the Royalite absorption plant in Turner Valley to the 16-inch CWNG pipeline just south of Okotoks. The Royalite company installed 6 Clark inlet compressors at their Turner Valley absorption plant to push the gas through the plant and into the CNWG main line. Prior to this, Royalite was simply recovering the naphtha from the Cretaceous gas and fueling the local homes and businesses with the residue gas. All excess residue gas was wasted in a flare. Royalite had no available market for its residue gas. Royalite's 3 wells produced as follows:

Royalite No.1	2.5 mm sft ³ /d
Royalite No.2	2.0 mm sft ³ /d
Royalite No.3	1.0 mm sft ³ /d

Royalite's total residue gas production was 5.5 million sft³/d but was increased to 7 million sft³/d by installing inlet compression. Combined with Bow Island's 7 mm ft³/d, CNWG was able to keep Calgary warm through the peak consumption in the winter of 1921. The Royalite Cretaceous gas contained small concentrations (~ 100 ppm) of H₂S and foul smelling mercaptans, which, although diluted by the dry Bow Island gas, still concerned consumers in Calgary. None the less, Calgary residents were kept warm through the winter of 1921 /1922.



Photo 1 - Royalite Company Manager, John. H. McLeod was determined to supply Calgary with Natural Gas (Source: Glenbow Archives)



*Photo 2 - Construction of gas pipeline from Turner Valley
(Source: Glenbow Archives)*

What lies deeper?

In the spring of 1922, Royalite had plans to deepen an existing well to determine if there was crude oil at a deeper depth and map out the deeper strata. It appears that there was a question if actual crude oil could be lurking at deeper depths. Deeper than the wet gas that had been produced in Turner Valley thus far. Perhaps instead of just natural gas liquids (which then they referred to as oil), there was actual black gold - crude oil like so many other fields in the United States. When CPP No. 1 (AKA Dingman No. 1 or Royalite No. 1) was drilled, it was with the hope of striking oil to fuel Henry Ford's latest offering. The horseless carriage was quickly gaining popularity in Canada. In 1903 there was only 178 cars in Canada. By 1910 there was 6000 and by 1920 there was 250,000. In Alberta, most of the crude oil necessary for the manufacture of gasoline came from the Cutbank Field of Montana.

The Royalite No. 3 well had been partially drilled by Royalite's predecessor, Calgary Petroleum Products (CPP). In mid 1920, at only 1200 feet, CPP lost the drilling tools in the well and CPP was low on operating capital. So, CPP and ceased operations on Royalite No. 3. When Royalite took over, the lost drilling tools were recovered in July of 1921 and the well was drilled down to the Cretaceous sands. The well was reported to be producing 1 – 2 million sft³/d.

**PLAN TO PROVE
WORTH OF FIELD
AT BLACK DIAMOND**

Royalite Company Will Sink
Dingman No. 3 to 5,000
Feet

To prove conclusively whether oil exists in the Dingman field in real commercial quantities, the **Royalite** Oil Company, a subsidiary of the Imperial, will sink the Dingman well No. 3 down to the unprecedented depth of 5,000 feet, states information received from Black Diamond. This will be the deepest well ever drilled in Canada, but it will prove beyond a doubt whether this field holds out the promise that has been expected of it; as the Dingman No. 3 has always been regarded as being situated on one of the best structures of the field. At the present moment the No. 3 is down about 3,000 feet, having been drilled about 2,000 feet since it was taken over by the **Royalite**.

On March 29, 1922, Royalite reported to the Calgary Herald that the well would continue drilling to 5000 feet as a "deep test". On June 6, 1923, Royalite Company Manager, John H. McLeod reported to the Calgary Herald that Royalite No.3 had reached 2830 feet and experienced a casing failure. For this reason, Royalite decided to cease drilling operations on No. 3 and produce it as a Cretaceous well like wells No .1 and No. 2. So, the Royalite No. 3 "deep test" was unsuccessful at reaching the intended 5000 feet.

Royalite No. 4

On September 7, 1922, Royalite No. 4 was spudded with a "stocky" cable tool rig that was reportedly "designed to drill deep". Note that the Royalite No. 3 was being deepened at the same time the No. 4 well was being drilled. The Royalite No. 4 well was drilled by Imperial Oil's exploration subsidiary known as the Northwest Company headed by manager, Tronson Draper. Imperial Oil's Drilling Superintendent in charge of the well was A.F. Applegate. The head driller was Clarence Snyder, and his assistant driller was William Sydney Bagley – both were experienced cable tool drillers.



Photo 3 - Royalite No. 4 Cable Tool Drilling Rig (Source: Glenbow Archives)



Photo 4 - Royalite No. 4 Cable Drilling Tool Rig. (Source: Glenbow Archives}



Photo 5 - Royalite No. 4 Head Driller Clarence Snyder right, with W.S. Herron and Bob Wilkinson (Source: Glenbow Archives)

Who really selected the location?

This was one of the key items we wanted to determine in our research. This history has been arcane and illusive, but we were able to determine the individual via the Calgary Herald and some other documents. The Royalite No. 4 location was selected by Imperial Oil consultant, George B. Sammons. He selected the location because it was expected to intersect the apex of the anticlinal structure. George B. Sammons was an American Engineer and Geologist originally from Kansas City. He consulted to Imperial Oil on many projects. He rented an apartment temporarily in Toronto but was an American citizen. He had been involved with operations in Peru and other foreign places. Interestingly he was also later, in 1926, in charge of drilling the McLeod No. 2 site in Turner Valley.



Photo 6 - George B. Sammons 1922 (Source: Glenbow Archives)

Some shallow success during drilling

On June 11, 1923, Royalite manager, John H. McLeod, reported to the Calgary Herald that Royalite No. 4 had gas shows of 1 million sft³/d at 1435 – 1500 feet (Lower Cretaceous, Blairmore). He then stated, “the gas was cased off, and the well is being drilled for **oil**”.

On September 9, 1923, Northwest Company manager, Tronson Draper, reported that the Royalite No. 4 well had produced 2 barrels of oil in a 24-hour bailer test. The oil was from 2591 – 2597 feet (Lower Cretaceous, Blairmore). The oil was simply recovered in the bailer. There was no description of the oil gravity or color. He stated that “Drilling is being proceeded with, but the results of the test did not warrant further testing of the oil showing at that depth”. The oil interval was now behind the 8 5/8” casing.

Winter is coming and Calgary’s Gas Supply is low again

On September 23, 1923, the Calgary Herald reported that gas supply was low again for the 1923 – 1924 winter season. Calgary’s peak consumption rate was forecasted to be 12 – 14 million sft³/d. Supply had diminished over the previous year with the Bow Island field now only capable of supplying 6 million sft³/d. Royalite’s Turner Valley wells too had been depleted and could only deliver at 5 million sft³/d and only once 4 additional inlet compressors were installed. CWNG had a new well at Barwell (West of Taber) supplying 1.5 million sft³/d for an aggregate total of only 12.5 mm sft³/d. Also, the CWNG main line required ~10-15% additional gas to supply the needs of Lethbridge and other towns along the main line.

Royalite No. 4 saves the day

The next day, on September 24, 1923, it was reported that Royalite No. 4 had struck a huge gas flow at 2890 feet. This flow was from the Lower Cretaceous, Home sandstone (as was Royalite No. 1 and No. 2). At the wellhead, Royalite No. 4 could deliver 7 million sft³/d which equated to 4.5 million sft³/d into the pipeline after absorption processing and line friction. This additional

production saved the day for CWNG in the 1923 / 1924 winter season. The rig was shut down during this time and Royalite No. 4 was tied into the inlet compressors and produced throughout the winter.

The inlet compressors drew hard on the Royalite wells all winter. So hard that the 4 Royalite wells often produced at or near a vacuum at surface. By the spring of 1924, Royalite No. 4 was reported as being “depleted”.

Drilling Deeper

On April 16, 1924, Tronson Draper was asked if there were plans to continue to deepen Royalite No. 4 and he reportedly smiled and stated, “it’s rumor”.

Many books over the years have identified various individuals that had lobbied Imperial’s management to drill deeper. However, it would appear to the author that it was Royalite’s plan all along. They set out to drill deeper and explore all the strata in the anticline for the purpose of finding oil. As noted already, Royalite No. 3 was the original deep test candidate however mechanical issues thwarted that effort. Royalite No. 4 had intersected gas at shallower depths, but each time Royalite and Northwest Company officials stated that it was now behind pipe because the goal was to find oil in deeper strata. Indeed, it was convenient that the well had struck gas in the Home Sandstone when it did, and it provided a winter supply for Calgary, however it was not Royalite’s intention to delineate the Lower Cretaceous wet gas production of Royalite No. 1, No. 2 and No.3. Royalite’s intention was to drill a deep test to determine “once and for all” if crude oil existed in the structure below the gas.

Unfortunately, this “deep test” at Royalite No. 4 would not have intersected the oil column due to its relative position on the anticlinal structure. The early geological interpretation of the structure implied simple anticline which was not entirely correct. We now understand that the anticline is a feature above an over thrust section running along a sole fault. Crude oil would elude drillers for another 12 years until Turner Valley Royalties No.1 is drilled in 1936 just North of Longview.

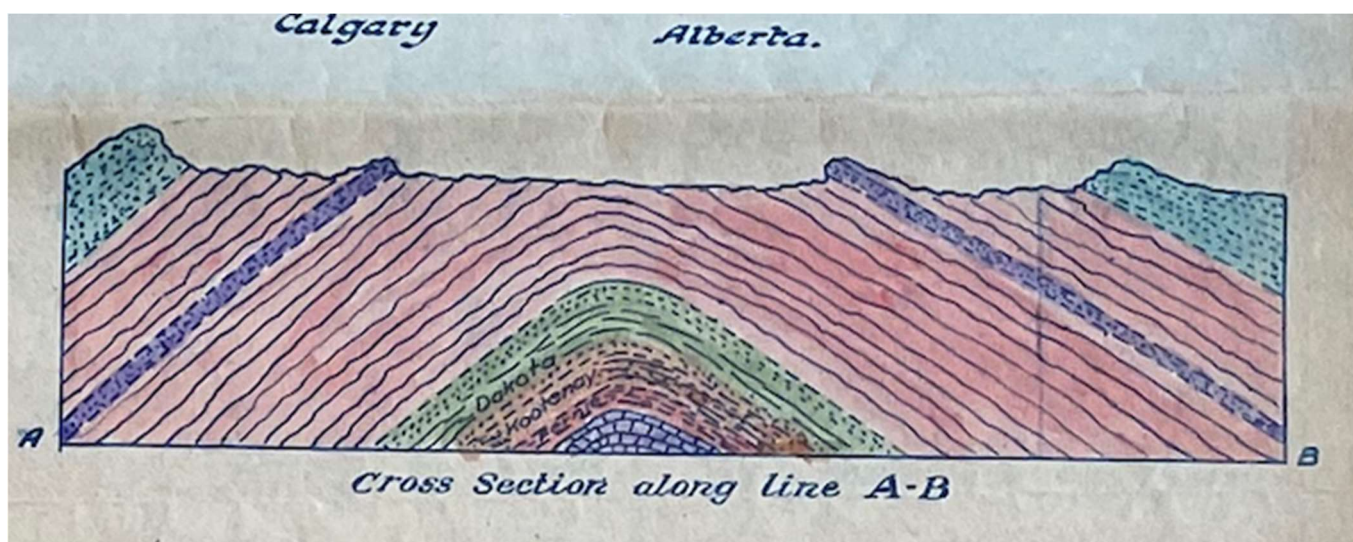


Photo 7 - Early Anticlinal Interpretation (Source: Geologist, Russel V. Johnson for Stellar Oils Limited)

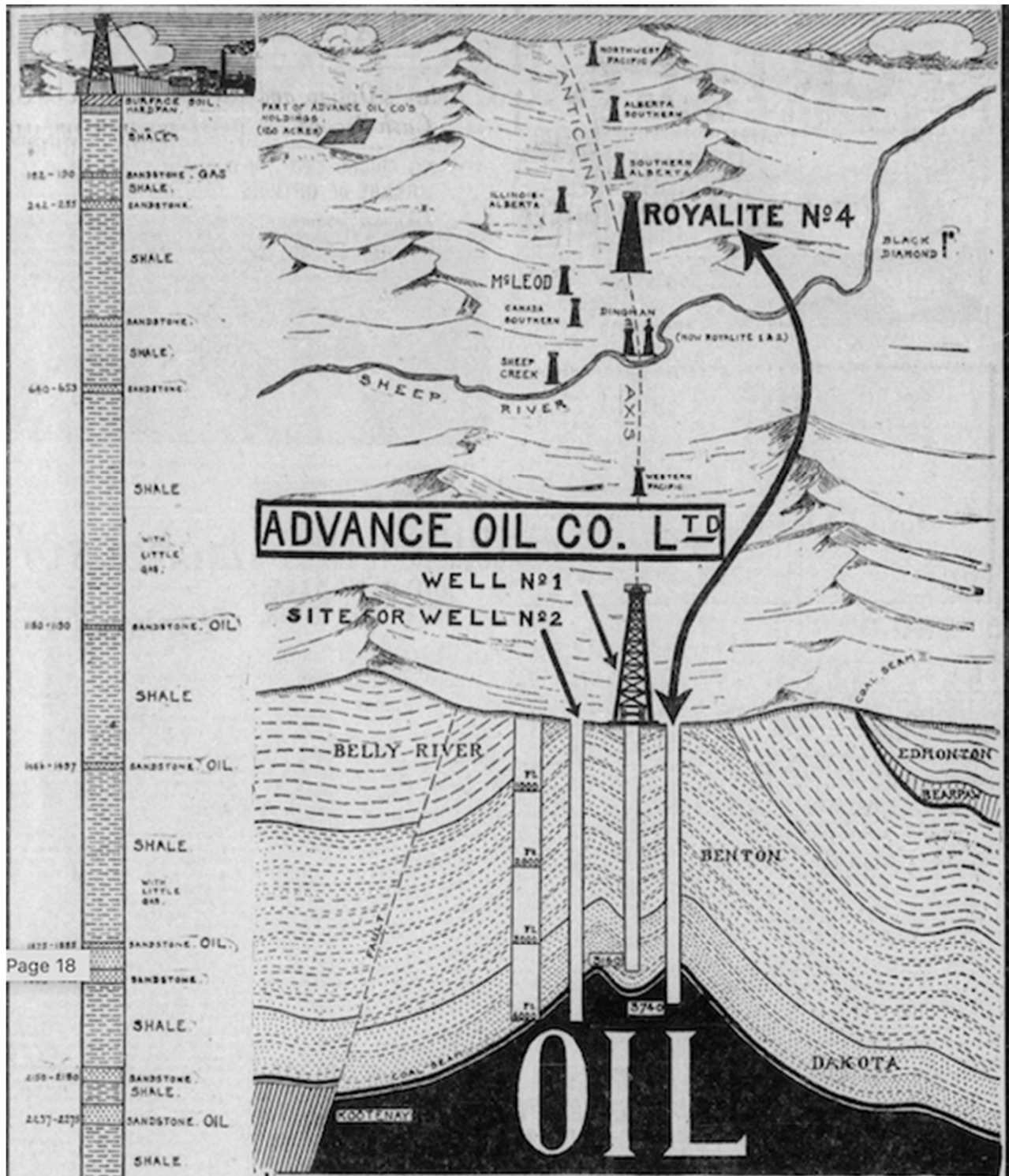


Photo 8 – Early Geology Interpretation used for Stock Promotion
 (Source: Calgary Herald Archives)

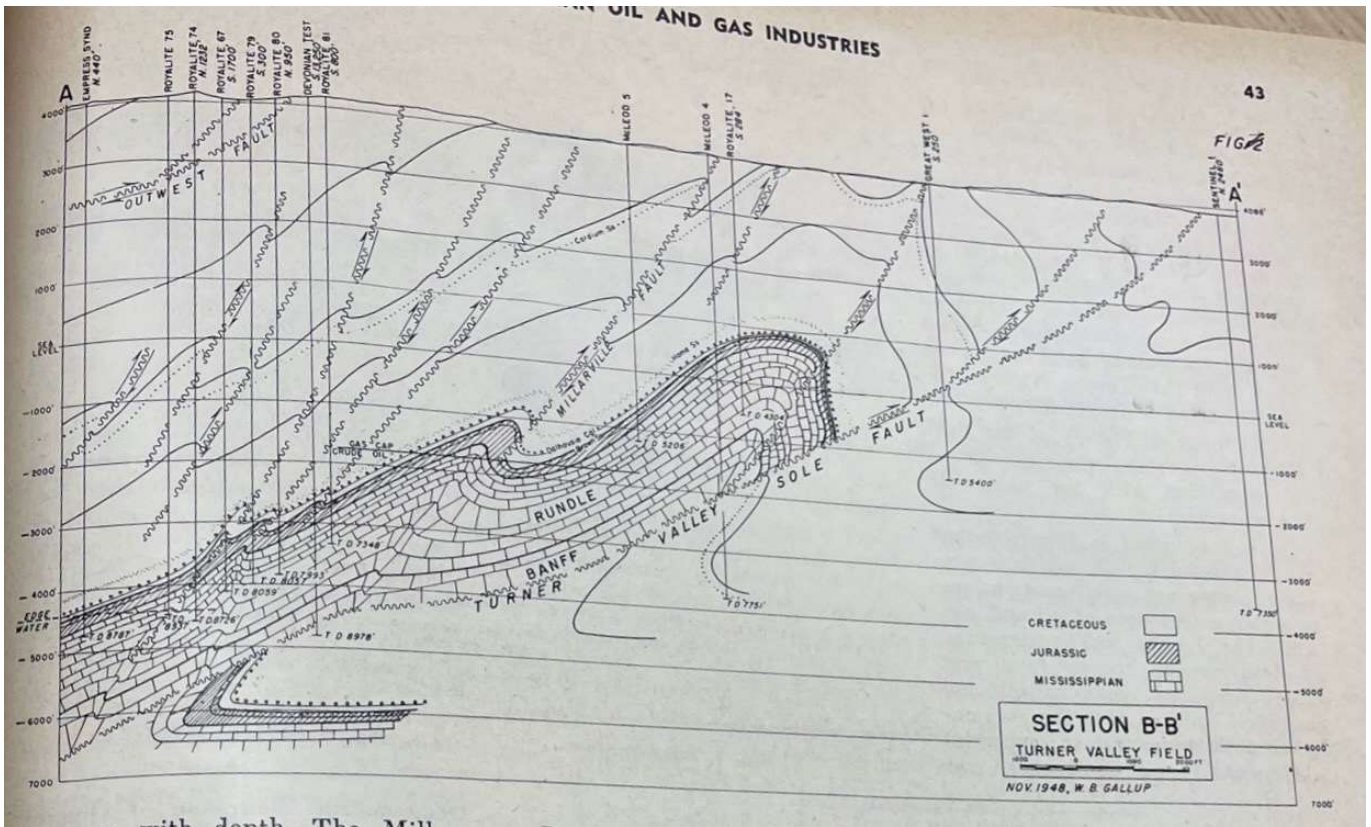


Photo 9 - Modern Geological Interpretation
 (Source: Abstract presented to A.A.P.G. in Sept. 1950 by Royalite Geologist W. B. Gallup)

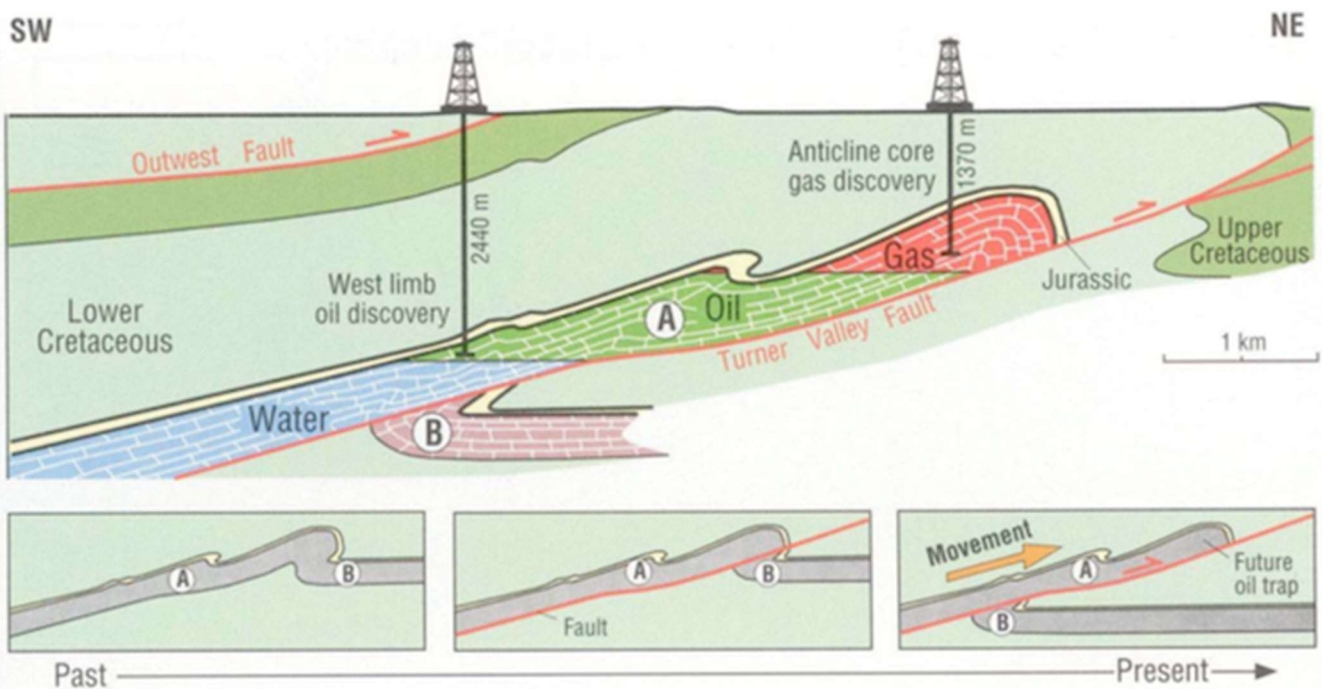


Photo 10 - Shows Modern Interpretation with Structural Development
 (Source: Mussieux and Nelson, 1998)

On June 24, 1924, drilling resumed on Royalite No. 4 from the 2890-foot depth at the Home sandstone. At 3430 feet the bit encountered the top of the Paleozoic Mississippian Limestone. This limestone was very hard which resulted in a slow drilling penetration rate compared to the sands above.

On September 10, 1924, it was reported in the Calgary Herald that Royalite No. 4 had struck 1.5 million sft³/d of gas in the limestone between 3495 and 3510 feet (65 - 80 feet into the limestone). The drilling was further slowed due to the rapidly expanding gas in the open hole. This rapidly expanding gas created a strange condition due to the extreme cooling within the wellbore as the gas expanded. Tools were freezing at the bottom of the well, a unique phenomenon that occurs when there is no fluid in the well to prevent the gas entering the wellbore. Sidebar - This was one reason subsequent wells into the limestone were drilled using rotary drilling with mud columns.

By this time, the Imperial geologists did not support continued drilling in the limestone. Their experience to this point was that petroleum would not exist in limestone porosity in the Southern plains. Several of the Northwest Company's exploratory wells on the plains yielded only salt water when drilled into the limestone. This limestone region was thought to be "sterile of hydrocarbons". Imperial Oil's geologists were, at this point, recommending to Imperial Oil's management to abandon the well.

Royalite plant manager, Sam Coultis, spoke out against abandoning the well. "Who else, he argued, was going to test the limestone interval at Turner Valley if Royalite didn't?" *The author finds this plausible because Sam Coultis had a vested interest in keeping gas supply available to his plant. It would make sense he would want to support exploration for new supplies of gas.*

According to the Calgary Herald, Northwest Manager, Tronson Draper, was authorized to "quit drilling when he was ready". Apparently, he was not ready, and he instructed driller Clarence Snyder to "drill a little deeper".

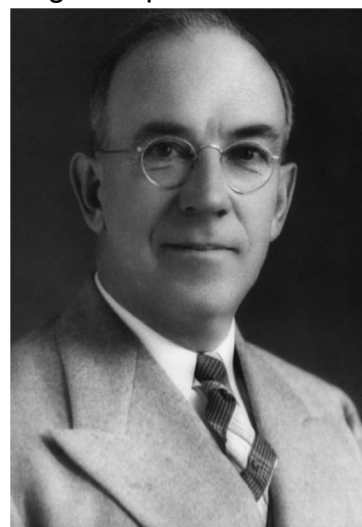


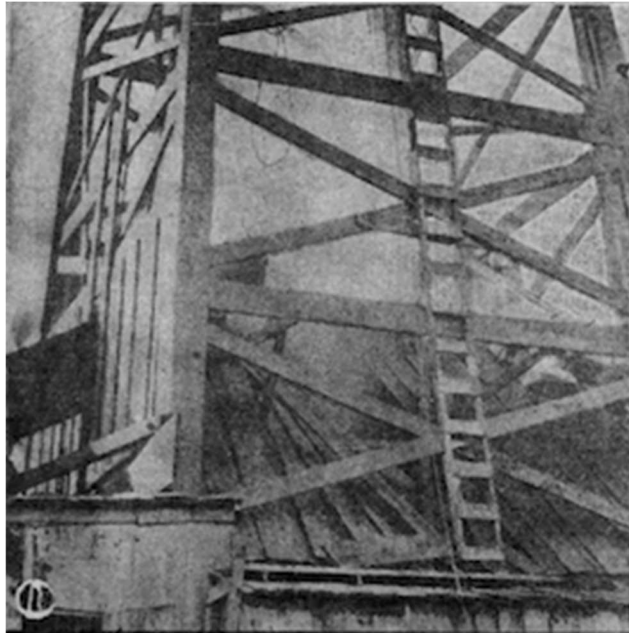
Photo 11 - Royalite Chemical Engineer and Plant Manager Sam Coultis. (Source: Glenbow Archives)

Huge Discovery

The crew drilled another 10 feet to 3740 feet (310 feet into the limestone) and the well came in on at 5 pm Tuesday October 14, 1924. It was reported in the sample record that "This last 30 feet drilled much more easily than above." This suggests that the bit was penetrating fast through 30 feet of dolomitic limestone and once the permeable, gas filled porosity was encountered, the well came in very suddenly. It was also reported that when the bit pierced into the gas filled limestone porosity, it sounded like a gun shot at surface. The gas entered the wellbore so fast that the ~ 2-ton cable tool drill string was blown up hole and jammed when re-entering the bottom of the 6-inch casing at 3450 feet. The 1-inch diameter drill cable parted and was blown out of the well like twine. It tore off a portion of the derrick roof. All the ironwork on the rig was covered in frost due to the rapidly expanding gas at surface. Head driller, Clarence Snyder, had fine metal debris blasted into his face. He reportedly spent 6 months convalescing in hospital having particles removed from his eyes. He recovered from the ordeal and went on to a long-respected career in the Alberta drilling industry.



*Photo 12 - Shows 20 million sft³/d gas flowing.
(Source: W.J. Oliver fonds at Glenbow Archives)*



*Photo 13 - Gas exiting the derrick roof which was torn apart by the drill line.
(Source: W.J. Oliver photograph from Calgary Herald Archives)*

The well was now flowing uncontrolled past the tools and out the 6-inch casing stub at an estimated 19 million sft³/d. A valve was ordered, and the well was left wide open to atmosphere. It was noted that the gas had a very pungent sulphurous smell, more so than had been experienced in the Cretaceous wells. Although H₂S was common yet and there was no personal protective equipment, one must assume that the crew knew how to work around it because nobody perished. Perhaps by working in on the windward side of the uncontrolled well was a lifesaving measure.

On October 15, 1924, although not well reported, the gas flow died off substantially, probably due to the downhole freezing or hydrating conditions causing a restriction at the bottom of the well. The crew was able to fill the 6-inch casing to surface with fresh water for well control. Then

they ran a second string with fishing tools to attempt recovery of the lost drilling tools. They engaged the fishing tools on the twisted drill line that was left above the lost drill tools. Unfortunately, when the line was tugged on the ice plug must have ruptured and the well flowed out “a pillar of water higher than the rig” followed by an enormous flow of gas. As a result, the second tool string was also blown-up hole, jammed and the cable snapped. There was now two tool strings lodged deep in the well that the gas flowed past furiously.

The unbridled roar of the well could be heard for miles and attracted several spectators. Imperial Oil Drilling Superintendent, A.F. Applegate, stated to the Calgary Herald “this was the biggest wet gas well in Canada”. Tronson Draper was more reserved and did not want to speculate on the success of the well until more measurement had been done. At Imperial there was a general unwillingness to release potentially inaccurate information that could cause improper stock exchange frenzies.

On October 16, 1924, it was reported that a 2000 PSI gate valve was installed on the 6-inch casing, but it was left wide open because the drilling personnel were anchoring the casings at surface. The well would remain flowing until the casings were secured to allow for a “rock pressure test”. A “rock pressure test” is simply a shut-in surface pressure buildup test to record the maximum measured surface pressure. This report also demonstrated that the crew were very aware of what could happen if the pressure built up excessively because they were anchoring the casings. Similar big wells in the United States had blown casing out such as what happened in the Caney Kansas disaster of 1906. Royalite Plant Manager, Sam Coultis, took samples of the gas at this time for an absorption test and measured the gas temperature at surface to be -22° F (-30°). A closer look at the historic photos also reveals that below the gate valve was a fill/flow tee with a side valve – a detail that is never mentioned. With the well flowing wide open, the drillers had hoped that the tools downhole would clear themselves - meaning dislodge and flow the tools out of the well. This never happened and both strings are still in the well to this day.

Disaster Strikes

On Saturday October 18, 1924, the gate valve was finally closed for the “rock pressure test”. The crew witnessed the surface pressure rise rapidly. Within minutes the pressure was at 1150 PSI and increasing - a surface pressure that had never been seen in Turner Valley before. At this time the crew cautiously left the rig floor and watched from a safe distance. After 20 minutes, the 6- and 8-inch casings slowly rose up through the cellar to the top of the derrick’s crown. Then an enormous release of gas occurred. When this occurred the surface pressure was reduced, and the 6- and 8-inch casings came back down with a crash.

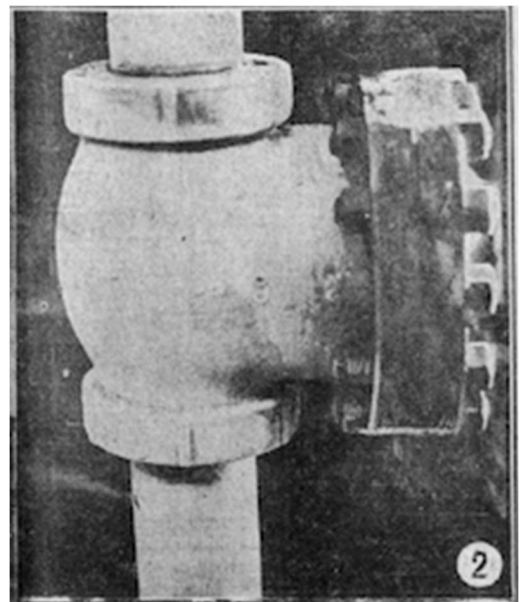


Photo 14 - Valve installed onto the 6 inch casing. Note handling joint above.

The reason that the 6- and 8-inch casings both moved together was because they were integrally attached by a flanged sealing device. There were several designs and makers of these devices. In Turner Valley the most common and most utilized was a “Santa Fe coupling” made by Regan Forge and Engineering from California. It was an early wellhead component that allowed annular pressure integrity and pressure control at surface. They were used on deeper casing strings and any that had to contain productive intervals. Fun fact – these devices were colloquially referred to as “Bradenheads” because that was an original model designed by Glenn T. Braden in about 1905.

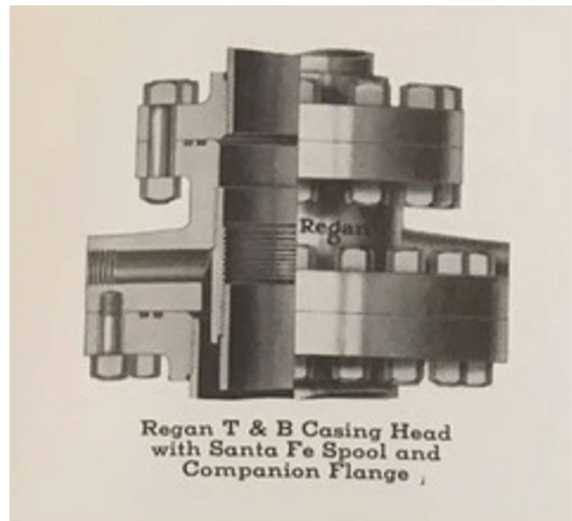


Photo 15 - Regan style casing integral connection with Santa Fe Couplings. (Source: 1930 Composite Catalog of Kew and Standard Oilfield and Pipeline Equipment)

Readers may recognize the name “Bradenhead” because it is still used as a remedial cementing technique – a technique that requires annular circulation control.

It was reported again that the gas flow had diminished somewhat - presumably from downhole freezing. It was also reported that the 6-inch casing never completely fell to surface. This was an incorrect report as both casing strings did return to surface. The author has reviewed the several historic photographs of the well and the gate valve is at working height on the rig floor with a full 6-inch x 25 foot, open ended, casing joint above it. This is a “handling joint” and would have been threaded to the gate valve prior to installation and probably was supported by the casing elevators. The “handling joint” was used to position the valve over the huge flow of gas. Also, the “handling joint” would divert the gas to flow through the derrick roof and not fill the floor area with “sulphuretted gas” (H₂S). The limestone gas contained elevated levels of H₂S (~3-5%). That level of H₂S had not been experienced in Turner Valley wells before as the Cretaceous gas contains only 60-100 ppm H₂S.

The rig crew spent several days tunnelling towards the well cellar. The tunnel was intended to protect the workers as they approached the wellhead and to provide fresh breathing air. By this time, the well’s flow had again slowed down but on October 21 the well again released an enormous volume of gas. But by October 24, 1924, the flow was almost completely cut off again. The author believes that this cyclic flow phenomenon was likely caused by downhole freezing or hydrating. Once frozen-off, the gas flow would stop which allowed thawing to occur when the downhole gradient temperature re-heated the wellbore. Once thawed, the huge flow would start again.

On November 4, 1924, the gas was still obstructed by casing tools and freezing conditions. The gas pressure built up and forced some gas out the 8-inch x 10-inch annulus. Tronson Draper reported that the crew had inspected the cellar by this time and the “Bradenhead” (wellhead fittings already described) that connected the lower casings had been damaged, presumably from the casing dropping reportedly “with a crash!”

In the next issue of Archives, Dustin discusses what happened when the well went “From the Frypan into the Fire” and more!

REMEMBRANCES

(with thanks to the Calgary Herald)

It's been a while since we've said farewell to some of the people who have been integral to the growth and success of the Canadian oil patch. We have some catching up to do so let's start with passings that occurred in 2023 and few earlier. In the March 2024 issue David Finch commemorated the life and contributions of journalist Gordon Jaremko (P.H.S. Lifetime Achievement Award 2000) who passed away on November 28, 2023.

ALSTON, John M. Born May 15, 1928 and passed away December 3, 2023. John was born in Welwyn Garden City, U.K. When he was five years old, he emigrated to New Brunswick, Canada with his mother. He grew up in Sussex, New Brunswick, and Edgetts Landing, near Moncton. John attended the University of New Brunswick, where he obtained his degree majoring in Geology. John and his wife moved to Calgary where they raised twelve children. He worked in the Alberta oil patch for twenty years and then moved into hard rock mining exploration, creating numerous junior exploration companies from the 1970s into the 1990s. John had a sharp, inquisitive mind and an insatiable quest for knowledge, particularly in history, economics, politics, and world affairs. His incorrigible sense of humour and eternal optimism carried him through numerous challenges in his personal life and in business.

BOHME, Calvin George. Born February 28, 1928 and passed away June 27, 2023. Calvin was born in Vermillion, Alberta, as one of five children. He grew up near Vermillion, where he had the typical small-town experiences of the day. These included chopping blocks of frozen sauerkraut from the barrels in the winter, and spending Sundays as an altar boy travelling to all the nearby towns with the priest for multiple masses. Prior to any higher education, Calvin worked as a "roughneck" in the early Alberta oil industry, including spending nine months on the infamous Atlantic #3 well blowout near Leduc in 1948. Calvin found his way to university after an accident where he injured his leg and couldn't work, pursuing an Engineering degree in one of the first Petroleum Engineering classes at the University of Alberta. He graduated in 1957 and initially used his new degree to teach at SAIT. Calvin eventually entered the oil industry proper, working for such well-known companies as Hudson's Bay Oil and Gas, Dome Petroleum and Petro-Canada.

Calvin's early work took the family to numerous locations including Texas, Prince Edward Island, Calgary, and Edmonton. His wife liked to remind him later in life of the thirteen times they had to move homes in the first seven years of their marriage. The family eventually settled in Calgary for good in the early 1970s. Once their children were a bit older, Calvin began to work in more exotic locations such as Pakistan, Indonesia, and Bolivia, with his wife often joining him for brief or long stints.

Despite all the exotic travel, Cal's favourite place, no question, was his farm near Rocky Mountain House, Alberta, which he purchased in 1978. There he could enjoy his many hobbies, especially woodworking, and he took enormous effort and pride in turning the old barn into a woodworking area and constantly upgrading the farm itself (with one small glitch where a bear decided to hibernate in the barn throughout an entire winter season!). His word-working included such exotic items as guitars, walking sticks, spectacular wooden bowls, and an altar for one of the local churches.

CLARK, Alan Raymond. Born October 3, 1940 and passed away September 29, 2023.

Alan was born in Cabri, Saskatchewan, grew up on a farm and attended a local one room country school. He finished his high school in Hazlet and worked summers in the Arctic while obtaining his Master's degree in Geological Engineering from the University of Saskatchewan. Al worked as a professional geologist in Calgary for many years for both large, multinational companies and small, junior startups. His expertise and leadership led to the discovery and development of many oil fields.

Al had many interests and hobbies. He appreciated beauty in nature and was always keen to explore all kinds of landscapes. Al enjoyed time at his cabin on Burnstick Lake with friends and family. He was an avid traveler and enjoyed adventures all over the world. Al was a generous volunteer, joining boards and committees to help the groups he cared for succeed. His hobbies included boating, building and woodworking, skiing, photography, music, theater, and fishing. He was an avid reader of historical fiction and non-fiction.

CLARK, David Alexander. Born in 1934 and passed away in on November 28, 2023. David was born in Aberdeen, Scotland and spent his early years in India, attending St. Paul's School in Darjeeling, before returning to Aberdeen to complete his education at Robert Gordons College and the University of Aberdeen, where he graduated with a B.Sc. in 1957. During his university years, he joined the Air Squadron as a volunteer reservist, developing a long-time love of flying. He emigrated to Canada in 1957, working in the Exploration Department of Mobil Oil in Calgary as an oil geologist until his retirement in 1996. During his career he had two overseas assignments, one in Libya in the early 1960s, and the other in Indonesia in the 1990s.

ELLIOTT, Robert H.J. Born October 31, 1927 and passed away November 10, 2022. Bob was born in Camrose, Alberta. Living close to Camrose put Bob in a unique position of growing up in both urban and rural environments, each having a major influence in shaping his life interests. Bob was equally capable in a boardroom wearing a suit and tie to present geological prospects to executive management; or alone in the barn helping introduce life to a newborn calf... sometimes while wearing that same suit and tie. After graduating high school in Camrose at the top of his class, Bob enrolled in 1946 in the Geology faculty of the University of Alberta to pursue a Bachelor of Science degree. He earned that degree with Honours in 1949 and continued his post-secondary education at the Colorado School of Mines, where he graduated with a Master's degree in Geology and Geological Engineering. Bob's lifelong adventure began in a pack-horse camp, mapping formations in the remote mountain passes around Jasper, Alberta. Until his retirement in 1985 he spent a rewarding career with Imperial Oil, Consolidated Mic Mac Oils Ltd., Hudson's Bay Oil and Gas and Canadian Homestead.

A farm boy at heart, Bob bought land at Cochrane Lake. In 1972 the family moved to an acreage in Bears paw that was an ideal place for Bob, with a view of the mountains, a short commute to the office and offering plenty of the simple life that he always appreciated the most. Bob was an avid curler, a recreational golfer and enjoyed both snow and water skiing, playing and watching hockey. Bob possessed a remarkable intellect, an incredible memory and was a voracious reader.

P.H.S. Vice-President Bill McLellan recalls working for Bob at HBOG as a summer student, sitting wells and mapping the Halfway sandstone play in NE British Columbia, and later as a fledgling exploration geologist. According to Bill "He was a great guy and working for him was always enjoyable".

GREEN, Richard Patrick (not that Rick Green). Born January 28, 1956 and passed away November 27, 2023. Rick was born in Lloydminster, Saskatchewan although he was determined to call himself an Albertan and said it was only a fluke that the hospital was on the Saskatchewan side of the city. At an early age the family moved to New Brunswick where he grew up. After obtaining his Business Administration degree from U.N.B., he came west to Calgary where he started in the financial services industry. He was transferred to Fort McMurray with RBC, later moving to Edmonton to work in the accounting office for an oil and gas equipment supplier. That company was purchased by Turbo Resources and Rick was transferred to Calgary. He obtained his R.I.A. (now C.P.A.) designation and moved into the Treasury Department of Turbo. This period of employment was probably the most challenging and satisfying of his career. Rick later had his own accounting practice, was an auditor with C.R.A. and then employed by Canadian Hibernia Holding Corp.

GRESKOE, Paul. Born December 14, 1939 and passed away March 12, 2023. Paul was born in Winnipeg and enjoyed a very diverse career as a journalist, author and publisher. He is best known in the petroleum history world as the co-author of a number of significant books including "The Money Rustlers: Self-Made Millionaires in the New West" with David Cruise (1985), "Hat Trick: A Life in the Hockey Rink, Oil Patch and Community" with Harley Hotchkiss (2009), "Secret Riches – adventures of an unreformed oilman" with John Masters (2004) and "Northern Tigers: building ethical Canadian corporate champions: a memoir and a manifesto" with Dick Haskayne (2007). In a revealing quote from his son, it was said that "as a "newsman to the end" Paul was cremated with a copy of the *Globe and Mail* tucked under one arm".

The P.H.S. awarded Paul its Lifetime Achievement Award for 2011 with the citation "For excellence in research, documentation and communication related to the history of the Canadian petroleum industry".

MACDONALD, Gordon Donald. Born March 29, 1937 and passed away August 22, 2023. Gordon was born on the family farm at Mankota, Saskatchewan. He received his education while living on the farm and at an early age launched his career in the booming oil industry as a 'roughneck' in Oxbow, Saskatchewan. During this time Gordon gained extensive experience in the oil industry learning from the ground up. Gordon was employed as field operator for Unocal Canada. He worked closely with the operations staff and, having an inquisitive nature, he tried to learn everything he could. He came to know how the operations of an oil and gas company functioned. After his tenure with Unocal, Gordon moved on to become the Vice President of Bird Oil Ltd. and entered into partnership with Glen Bird in his first foray to independence, Eagle Oilfield Sales and Fabricating out of Devon, Alberta. By the mid-seventies he owned and had built his own oil company in Calgary. The desirability of the companies he created from scratch is reflected by the fact they would be sold to outside interests. Gordon always maintained that "he" was the oil company, and the buyers merely got the name of the company and its assets. In the mid-1980's, during a downturn in the Alberta economy he bought houses in Calgary and established the foundations of his real estate enterprise. He then re-established himself in the industry, calling his new company Eagle Hydrocarbons. He built Eagle Hydrocarbons up from scratch to where, by 2007, it had production throughout Alberta and parts of Saskatchewan, with a staff of a couple of dozen.

ROBERTSON, Bryan. Born June 1, 1940 and passed away March 5, 2021. Bryan was born in Pincher Creek and was raised for a time in Willow Valley attending, on horseback, the one room North Fork School a couple of miles down the road from their home. The family also lived in

Lundbreck, Bellevue and Behrens at different times. In the fall of 1959 Bryan and his father drove to SAIT in Calgary to register him in a finishing carpentry class. That class was full, but they were offering a brand-new course in Petroleum Technology in which he enrolled. After graduation, Bryan took a job with the Energy Resources Conservation Board, making lifelong friends. Bryan then took a position with Elf Oil, the French National Oil Company and became their Arctic Operations Manager. In 1981, he bought Narwhal Arctic Services. Narwhal managed the airport and the hotel at Resolute Bay, supported the town and handled logistics for the mining and drilling companies. Bryan also consulted in Arctic ventures in Russia, Greenland and Finland. His company, Amarillo Holdings, took part in projects offshore in Labrador, Newfoundland and northern Europe. Another subsidiary, Champion Oilfield Rentals, offered leased and rented heavy equipment in order to complement the support of the Arctic frontier explorations. Bryan began ranching in 1986 and following the sale of the Arctic company in 1991, he settled into the ranching community - taking part in Rocky Mountain Forest Range Assoc. and North Fork Livestock Association. He registered water rights for the ranch and grazing associations. Bryan briefly dabbled in the fickle ostrich market, then went on to residential property development in Bellevue.

SHERWIN, Donald Fletcher. Born May 16, 1931 and passed away November 29, 2023. Don was born in Guelph, Ontario. In 1940, the family moved to St. Catharine's, Ontario, where Don attended high school. He then studied at the University of Toronto, where he graduated in 1953 with a degree in Geological Engineering. For the next 35 years, Don pursued a career as a petroleum geologist, assuming positions of increasing responsibility, first in the Alberta oil patch with Chevron Canada; later with the federal government Department of Energy, Mines and Resources in Ottawa, in the regulation and evaluation of industry offshore and northern oil and gas exploration programs; and finally with the Canada-Newfoundland/Labrador Offshore Petroleum Board in St. John's.

In 1988, Don retired to Ottawa and, in late 1989, moved to the Perth area west of Ottawa, where he built a new home on Bennett Lake. Don's hobbies, other than traveling and hiking, included volunteer work and quiet philanthropy, genealogy, canoeing, camping, cottaging, sailing, skiing, singing, and dancing.

SUNDSTROM, V. Glenn. Born March 12, 1928 and passed away October 15, 2023. Glenn was born in Bengough, Saskatchewan and spent most of his early years in Kennedy. He dreamt of becoming a doctor, but medical schools were giving priority to returning war veterans, so Glenn moved to Kipling to work in the bank. This is where he met Margaret and they married in 1950. An opportunity with Imperial Oil sent them to Regina and this began Glenn's long and rewarding career in the oil industry. He spoke fondly of living in St. John's, Winnipeg, and Montreal, before settling in Calgary in 1968, where he worked for Pacific Petroleum as General Sales Manager and then Petro-Canada as Group Vice President of the Downstream Division. In 1982, after rising to the position of President of Petro-Canada Products Limited, he retired and started a successful consulting business, Sundstrom Enterprises Ltd., with clients including PanCanadian Petroleum and Turbo where he served as President.

Glenn was proud of the volunteer work he did including Chairman of the Alberta Cancer Board, 1988 XV Olympic Winter Games as Venue Chair for McMahon Stadium, Olympic Oval and Father David Bauer Olympic Arena. He was a longtime member of the Calgary Petroleum Club. Glenn was especially interested in history and politics and enjoyed traveling or working in other countries.