



ARCHIVES

Newsletter of the Petroleum History Society

November 2018; Volume XXIX, Number 8

P.H.S. Lunch and Learn Meeting – Wednesday, November 28, 2018

Resource Nationalism in Mexico

by Dr. Amelia Kiddle, Associate Professor of History, University of Calgary

This talk will provide an overview of the history of the Mexican oil industry, from the first big oil strikes of the early 1900's to the present, showing how the tension between foreign investment and resource nationalism have shaped the industry since its inception. Paying particular attention to the Mexican Constitution of 1917, the Oil Expropriation of 1938 and the history of Pemex, the talk will provide the historical context necessary to understanding contemporary changes in the structure of the industry and the symbolic weight they hold in Mexican society.

Please see page 2 of this issue for a brief biography of Dr. Kiddle.

Time: 12 noon, Wednesday, November 28, 2018
Place: Calgary Petroleum Club
319 - 5 Avenue SW, Calgary; Cardium Room (but check marquee).
Dress: Business casual.
Cost: P.H.S. Members and Student Members \$35 and Guests \$40 (most welcome).
Only cash or cheque at the door. Payment can be made in advance by credit card or by e-mail. 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: Micky Gulless at 403-283-9268 or micky@petroleumhistory.ca by noon, Monday, November 26, if not sooner.

Those who register but do not come, or cancel after the deadline, will be invoiced.

Those who do not register by the deadline may not get a seat.

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 Tippet at the address indicated on page 3.

October Speaker biography: Dr. Kiddle received her B.A. from the University of Toronto, her M.A. from the University of Chicago, and her Ph.D. in Latin American history from the University of Arizona (2010). She was a Mellon Postdoctoral Fellow at Wesleyan University in Connecticut before joining the History Department at the University of Calgary, where she is the Coordinator of the Latin American Studies Program. She has published edited volumes on populism in Mexico and on the Latin American response to the Mexican oil expropriation of 1938, and articles in the *Journal of Latin American Studies*, *Mexican Studies*, among others. Her book, *Mexican Relations with Latin America during the Cárdenas Era*, was published by the University of New Mexico Press in 2016. Her current research on resource nationalism in Latin America is supported by an Insight Grant from the Social Science and Humanities Research Council of Canada.

Next Luncheon – mark your calendar: After our November 28 luncheon, we will take a break until the new year when the first luncheon talk will take place on January 30.

Glenbow's Big Move: It was announced on November 15 that the Glenbow Archives would be moving in the new year from their current downtown location to the University of Calgary where the new Glenbow Western Research Centre would be part of the Taylor Family Digital Library. Storage for much of the Glenbow's collections will be at a "high density library" facility in Spy Hill. The Glenbow's archival material is described as 5.5 km of books, reports and journals along with 2 million photographs, 15,000 maps and videos. At the U. of C. campus there will be an "accessible storefront location on the second floor of the Taylor Family Digital Library offering breakout rooms and white gloves for handling especially fragile pieces." P.H.S Director and Glenbow Chief Archivist Doug Cass will be keeping us advised as the move evolves.

Widney Elbow puzzler: A set of formal drinking glasses were recently purchased that bear a decoration saying "Widney Elbow" and including a small drilling rig. The best guess is that these relate to the Widney family, well known in the annals of the oil patch. Roy Widney and his son, Dan Widney, are both in the Canadian Petroleum Hall of Fame. Roy's accomplishments span the 1924-1950 period including activity in Turner Valley while Dan's cover the period 1951 through 2002. What is in question is the significance of "Elbow". Does anyone have an idea?

Barron Building Revival: P.H.S. Treasurer Micky Gulless has noted that the famous downtown Barron Building at 640 – 8 Avenue SW is being converted from offices to a residential complex. This after sitting idle for a number of years with many rumors of its demise. The office-to-condo trend is happening in a number of vacant towers and is an attempt to make use of real estate left empty by the decline of the petroleum industry in Calgary and to a related drop in demand for office space. The building has a historical status and bears a placard on the front describing its history. It was built during the 1950's boom.

Forthcoming Imperialism: P.H.S. Director Doug Cass has alerted us to a petroleum-related book that is scheduled to be released by the University of Calgary Press in April 2019. It is "*Imperial Standard – Imperial Oil, Exxon, and the Canadian Oil Industry from 1880*" by Dr. Graham D. Taylor. Graham spoke to us a couple of years ago about Imperial Oil's South American subsidiary International Petroleum. His research was built, in part, on the records of Imperial Oil, including their photograph collection, that were donated to and are curated by the Glenbow Archives. In retrospect that farsighted donation, including funds to underwrite their proper cataloguing and preservation, are a model that other companies should be encouraged to emulate. It will be interesting to see whether the book deals with other Imperial subsidiaries such as Royalite and Northwest.

Chevron: A recently-discovered gem is "*Exploring our Past. Discovering our Future. Chevron Canada 75 years – a photographic history of Chevron Canada 1938-2013*". At only 43 pages, this large format volume is just the same a great historical overview – and a worthy companion to the more comprehensive "*Earning our Stripes*" book by Max Foran that Chevron Canada sponsored for their 50th anniversary in 1988. Copies might be available through Chevron's Public Affairs group although this has not been confirmed.

Christmas books: Several new volumes may be of interest if you want to buy a gift for yourself! They include: 1. "*Anthropocene*" by E. Burtynsky, E. Baichwal and N. de Pencier, published by AGO/Goose Lane, 251 p., \$35.00. As per other Burtynsky books, this provides many photographs of the impacts of mankind on the natural environment. Small format. 2. "*Pipe Dreams – the Fight for Canada's Energy Future*" by J. Poitras. Published by Viking, 318 p., \$34.00. An overview of many of the recent pipeline-related controversies. 3. "*The World in a Grain – The Story of Sands and How it Transformed Civilization*" by V. Beiser. Published by Riverhead Books, 294 p. \$37.00. For all of you construction and fracking fans.

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 Tippett.

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Medicine Hat's American Hotel #1 well in the news again

P.H.S. Treasurer Micky Gulless has provided us with the following article with the byline: "P.H.S. member David Hargrave alerted us that the American Hotel #1 well, drilled around 1890, was in the news again. In October 2018, the City of Medicine Hat demolished the Hitch'n Post Saloon, the latest incarnation of the American Hotel - the downtown building behind which this well is located. Long-time P.H.S. members may remember this well from an article by Micky in the May 1989 Archives newsletter, reprinted here below."



Business Street, Medicine Hat, 1887. Image NA-2003-16 courtesy of Glenbow Archives. Accompanying notes indicate that as of 1970 this was South Railway Street. From Left to right: Cosmopolitan Hotel (built 1886 by William Casey), Cousins and Scratchard (general store), Mikado Saloon, Mrs. Small (dressmaker), unknown, L.B. Cochran (dry goods and groceries), George McCuaig (wholesale and retail merchant), City Bakery, **American Hotel**, shoe repair shop and Messrs. Hargrave and Sissons General Store.

A Tale of Two Abandonments

Once upon a time, an enterprising Medicine Hat resident drilled a well for a private supply of natural gas. This was a common occurrence in the early days of Medicine Hat and it is speculated that the owner of the American Hotel drilled this particular well around the turn of the century. When the well was no longer needed, it was abandoned and forgotten - for a while, until it began to leak. Decades later the well had to be re-abandoned - twice - and the stories of these two abandonments illustrate our change in attitudes towards natural gas safety and to the role of the Conservation Board in such matters.

The most recent re-abandonment took place in the summer of 1972. Tony Chow was preparing to demolish a lean-to at the rear of his property, in order to expand his Canada Cafe in the heart of downtown Medicine Hat. A mysterious vent pipe was discovered in the lean-to and a city Gas Superintendent got off-scale readings on the first sniff of his explosimeter. No gas line leaks were discovered, but the ground under the lean-to was

saturated with natural gas and eventually the city found the old gas well, just six feet from the back door of the cafe.

The Energy Resources Conservation Board was notified in late July and mobilized immediately. Brian McFarlane, Senior Technician went to Medicine Hat on July 22, 1972 to supervise exposing the old well. The well was leaking 400 cubic feet of natural gas a day into the urban atmosphere from badly corroded casing. Funds for the operation were quickly made available to the ERCB through an Order in Council from the Minister of Mines and Minerals, which was in place by August 15. The old well could not be re-entered because it had three strings of casing cemented to surface with the smallest being only three inches in diameter, a good abandonment attempt. The crew tried to wash over the outer casing to reach the producing formation, but at 40 feet the bit ran into steel, thought to be an old cable tool drilling bit. So a new well had to be drilled, in a tiny space of about 3000 square feet amid the downtown buildings. The cafe kitchen and power poles were removed and, by August 30, 1972, a 70-foot trailer-mounted drilling rig was in place. Under these unusual conditions, it took until September 22 - nearly a month - to drill a 760 foot well and cement off the producing formations.

The cost was \$93,000, which was expensive for a 760 foot well, plus \$45,000 for restoration of the cafe kitchen. It was expected that the gas in the soil would continue to seep into the atmosphere after the abandonment so vents were installed in the basement of the cafe and the well was monitored for several months.

In 1972 the history of the well, which was being called American Hotel No. 1, was a mystery. However, the Board had abandoned this well before. In 1980, the Board found an old file in their records on the previous abandonment attempt.

The earliest item in the ERCB file is a newspaper clipping from May 31, 1935 which tells of a mysterious explosion on May 30 that broke glass and caused a small fire in stores on Third Street. The explosion seemed to originate in the rear part of the premises, where we now know this well to be, but the cause was never ascertained. Then on June 28, 1943, Mr. R. Beitz, a foreman with Medicine Hat's gas and water department, was checking gas lines when he discovered leaking gas. He notified the Board and an old well, covered with wooden cribbing and soil, was located. Although the well was leaking gas into a heavily populated area, it took over a year before the well was abandoned. Much of the file is correspondence concerning who owned the well, who was responsible for initiating abandonment operations, who should pay for it and who should conduct the abandonment.

The Board maintained that the owner of the land was responsible for the well, under the Oil and Gas Wells Act. The land owner, Mr. Abraham E. Altmayer, had passed away in 1918 in New York State, leaving several beneficiaries residing in the United States. In Medicine Hat, the estate was represented by a local lawyer who said the owners had held the lands for 30 years and never even knew the well existed. He suggested that the Board take title to the mineral rights and undertake the abandonment themselves. The Board rejected that proposal. The city of Medicine Hat also wanted the Board to take responsibility. Months passed, with the well continuing to leak, while the minerals title was checked to see who owned the gas (it was the surface owner as the lands had been sold prior to Alberta becoming a province), the assets of the estate were checked, the

lawyer for the estate was repeatedly asked to undertake abandonment and warm spring weather was awaited.

Finally the Board took possession of the well to abandon it and an agreement was reached with the city's gas department, whereby the city would supply men and equipment to work under the direction and responsibility of the Board. On August 25, 1944, over a year after the leak was discovered, Mr. Goodall of the Board was in Medicine Hat to supervise the closing off of the well, then called the Altmayer Estate well. Robert Beitz, of the city, determined that gas was coming up three inch casing and out of a split 40 feet below the surface in the outer four inch casing, which was capped. During this abandonment, the well was pressure cemented to 560 feet, and around the six inch conductor pipe in the cellar which was topped with a valve. The entire two-week operation cost \$1118.84 which was billed to the estate's lawyer, and was paid off in three instalments by May 1945.

This abandonment seems to have been successful for some time, but in 1949 a plumber found gas leaks in a basement at the site. On June 7, 1949 Mr. R. H. King from the Board was in Medicine Hat checking the well at the request Mr. Beitz once again. This time there were no delays and the well was immediately excavated and exposed. Mr. King wrote to an engineer at the Board that he was positive that the well was not leaking. He felt that the gas was leaking out of the saturated earth around the well, as the sand had not been vented after the 1944 abandonment. Mr. Beitz, of the city, suggested that the sand be vented, the excavation filled with bricks and covered with wooden boards, then concreted over, leaving the vent pipe open with a stack up to the top of the building. It appears that the city undertook this work at its own expense, and it seems to have solved the problem for the next twenty years.

For more information on the 1972 abandonment, see an article entitled "*Discovery of old leaking gas well brings new drilling in Medicine Hat*" in the October 2, 1972 issue of Oilweek. I [Micky] would like to thank the Energy Resources Conservation Board for allowing me to study their interesting files on this old well.

After the 1972 re-abandonment, the City of Medicine Hat undertook annual gas monitoring. Then in 1990 gas was detected leaking through the soil and monitoring increased to monthly.

In 2002, the American Hotel #1 well was part of the inventory of wells handed over to the Orphan Well Association (OWA) which now has title to the well. Since 2005, they have been monitoring and managing the continuing gas leak with a Soil Gas Management System. This consists of shallow extraction wells, 2 m below ground, connected to a vacuum unit to collect and vent the gas. They are taking advantage of the improved access to install an enhanced Soil Gas Management System. They think there is a very low probability that they will be able to repair the leak and abandon the well. So American Hotel #1 may be in the news again one day in the future.

Thanks to David Hargrave for the heads-up and to Natalie Gibbs of JuneWarren Nickle for providing a scan of the 1972 Oilweek article.

REMINISCENCES OF GEOLOGICAL FIELD WORK IN THE 1950'S

By Don Yont, Petroleum Geologist

P.H.S. Member Don Yont is a petroleum geologist who got his first petroleum industry field experience in northern Canada in the 1950's. Don has taken the time to compile his memories of this part of his career into a comprehensive document including numerous photographs. Due to space constraints we are only including the first part of his story here but will follow up with additional chapters in future editions. We will also try to add the full document to the P.H.S. website including the photos. Many thanks to Don for this initiative and for allowing us to reproduce his report here. Let this be an example to all of us with stories to tell.

Summer Job 1957 – California Standard Field Party, NWT & NEBC

By the spring of 1957 I had completed my third year of Engineering at the U. of S. and had elected to pursue a path to obtain a degree in Geological Engineering. The previous summer's job at the Anglo Rouyn mine had given me some idea of what a career in the mining industry would be like so I was hoping to get a summer job in the oil industry to help me decide if a career as a petroleum geologist might be the better choice. Several oil companies from Calgary had sent interviewers to talk to geology students about considering a career in the oil industry by taking a summer job to gain experience. I was fortunate to be interviewed by California Standard and was offered a summer job on a geological field party in the Northwest Territories.

1.) Initiation - California Standard's Calgary Office

I arrived at the CPR station in Calgary in early May and took a taxi to the Wales Hotel where I was to stay for a week or so before heading north to the field. This was my first time ever in Calgary and I recall having difficulty getting oriented because in Saskatoon the river ran north-south while in Calgary it ran east-west. It seemed to me that north in Calgary should be east even though I knew that was not so. Calgary was a considerably larger city than Saskatoon and had taller buildings such as the Palliser Hotel but public transportation was similar as electric trolley buses were used in both cities. The most impressive thing about Calgary was the view of the Rocky Mountains to the west of the city. I recall my first trip to Banff and becoming increasingly in awe of the majesty of the Rockies as we headed towards them. The line of jagged peaks to the west seemed to change into this huge grey wall of rock that loomed larger and more foreboding as we approached the Front Ranges. As we approached Banff and were surrounded by all the mountain peaks, the beauty of the Rockies was most inspiring. Being able to see the Three Sisters, Mt. Rundle and all of the famous mountains of the Banff area was quite the thrill. I have little recollection of my first day in Cal. Std.'s offices in Calgary which I recall were located in the same building as the Wales Hotel but on the upper floors. I was to find out the next year that the Royal Hotel across the street to the east of the Wales Hotel was where Texaco's offices were located so it was apparently common in those days for hotels to lease out some of their floors as office space. Upon arrival at Cal Std's office, I was introduced to Fred Lines the Chief Geologist and Mike Stanton a Senior Geologist with the company. I was informed that although I was hired as a summer student, my 4 months of temporary employment with Cal Std. would be included in my record of years of service with the Company, should I be hired on permanently after graduation. I was then informed that although I would be still be spending the summer doing field work in the NWT, the plans had changed somewhat. The original plan was for me to accompany a Geology Professor from the University of Manitoba (Bill Brisbin?) on a canoe trip down the Mackenzie River from Norman Wells to Inuvik, examining the

outcrops along the river enroute. The Manitoba Professor was unable to make the trip, so Alf Lenz, a Cal. Std. geologist on permanent staff, was assigned to be his replacement. In addition, Hank Polrolniczak (surname changed later to Martin), a newly graduated geologist from Queen's University who had just been hired by Cal Std, was to join us on the expedition as well. Before heading north for the summer we spent a week or so in Cal Std's library reading reports, including those of the Geological Survey of Canada (GSC), concerning the geology of the NWT along the Mackenzie River. During his time I got to know Alf and Hank better and discovered that Alf knew my brother Bill and his wife Nita as they once attended the same Lutheran Church in St. Albert. We also met Bill Nixon in the library, who had just finished his third year Geology at Queen's and was also hired as a summer student with Cal Std. I do remember that the Cal Std librarian was a very nice and friendly lady and did everything to make us feel welcome in Calgary working for her company. Mike Stanton, a senior geologist with Cal Std reviewed the geology of the Devonian of the NWT with me and in particular that of the Kee Scarp Formation which was the producing horizon at the Norman Wells oilfield. I remember observing that on Mike Stanton's maps the Kee Scarp outcrops along the Ramparts of the Mackenzie were indicated by a prominent mauve colour. I was to learn in subsequent years working for Texaco, that mauve was the oil industry's standard colour for indicating reef developments on maps and cross-sections as well as for dolomite rock on stratigraphic logs. Before heading north I purchased my first 35 mm Camera so I could record my adventures on color slides like my Uncle Chuck Bily did during his posting to Peru in South America. I think the camera I purchased was a Leica brand. I do recall that before taking pictures I had to use a light meter and manually adjust the f-stop, set the distance, have the correct setting for the ASA of the film etc. There were two types of 35 mm film commonly used in those days namely Kodachrome and Anscochrome. The purchase price of the Kodachrome film included processing so the exposed film roll was mailed to Kodachrome and the finished slides came back in about a week. The Anscochrome film purchase price did not include processing so the exposed roll of film had to be taken to a local camera shop for processing. During the processing of one of my rolls of Anscochrome film, faulty chemicals were used so the images on the slides had a greenish cast to them altering the true colors. The camera shop apologized for the error and gave me a free roll of film to compensate for their mistake which was of little consolation but nothing else could be done to fix the problem at that point.

2.) Mackenzie River by Canoe - Norman Wells - Fort Good Hope Area – NWT

We were finally ready to head north to start the field season and I was impressed to learn that Cal Std had their own aircraft, consisting of an Avro Anson on wheels and a de Havilland Beaver on floats. We boarded the Anson in Calgary and flew to Norman Wells, NWT with refueling stops in Edmonton and Fort Nelson, BC enroute. After landing at the Norman Wells airport, we unloaded our camping supplies including tents, sleeping bags, etc. as well as our personal gear such as clothing and toiletries packed in a duffle bag and also in backpacks. Cal Std had made prior arrangements with Imperial Oil (IOL) for us to stay in the IOL bunkhouses near the oil refinery for a few days before we started our canoe trip down the Mackenzie River. We also ate our meals in the Imperial Oil mess located in the same company barracks. The Norman Wells Oil Field was discovered by Imperial Oil in 1920 and a crude refinery was built shortly thereafter which closed in 1925 due to lack of demand. The refinery was reactivated in 1932 and a new refinery built in 1939 when the demand for petroleum products increased due to the discovery of pitchblende at Great Bear Lake and gold deposits at Yellowknife. In 1957 Norman Wells was still basically a company town consisting of the refinery, storage tanks, warehouses, maintenance shops and living quarters for the employees. When we arrived in

Norman Wells around the end of May the weather was reasonably warm and although spring breakup of the Mackenzie River had occurred, there were still large blocks of ice along parts of the shoreline and around the main dock at Norman Wells. The Mackenzie River was very busy already though as it was the main artery for transport of all types of goods and supplies for the north to all settlements along the river from Yellowknife to Inuvik. Tugs pushing loaded barges were seen each day moving goods both upstream and downstream past Norman Wells. Much of the refined product from the Norman Wells refinery was shipped in barrels loaded onto barges and transported both upstream and downstream in this manner. Soon after we arrived in Norman Wells, I recall helping Alf Lenz drag a 21 foot green-colored freighter canoe out from under one of the Imperial Oil bunkhouses where it must have been stored the previous year by other Cal Std personnel. We had a few days to spend in Norman Wells before the Cal Std Beaver arrived with food supplies and other equipment for the trip down river, so Alf led us on several day trips in the canoe to various points of interest up and down the mighty Mackenzie River. We had a small 10 horsepower outboard motor attached to the canoe as the current in that river is powerful and we would have gotten nowhere if all we had were paddles. I recall one day traveling to Bear Island in the middle of the river just west of Norman Wells. During World War II the Canol Pipeline was built to transport oil from the Norman Wells Field westward across the mountains to a refinery in Whitehorse. Camp Canol on Bear Island was the site of one of the main construction headquarters for the project with bunkhouses for the personnel as well as warehouses stocked with supplies and equipment. We explored inside some of these old abandoned warehouses and discovered electrical generators, toilet bowls etc., which were still packed in their original wooden crates and appeared to still be in good condition. The Canol pipeline was completed in 1944 but shut down in 1945 after the end of the war. Apparently jeeps, trucks and other equipment were also abandoned along the pipeline route across the mountains to Whitehorse.

The Kee Scarp reefs that form the reservoir in the Norman Wells oilfield outcrop in the Discovery Range a few miles north of the Norman Wells town-site so we were most interested in visiting this location. The nearest access to these outcrops was up Bosworth Creek which empties into the Mackenzie River just north of Norman Wells. It was in fact oil seeps along this creek, confirmed by geologist Dr. T.O. Bosworth in 1914, that piqued Imperial Oil's interest in the area and eventually led to the discovery of the Norman Wells oil pool in 1920. During our hike up Bosworth Creek, I don't recall us seeing any oil seeps but I assume that we must have been aware of their occurrence. I do recall that the hike to these outcrops up Bosworth Creek was quite strenuous because we had to fight our way through thick alder willow growths which grew along the banks of this stream. The hordes of mosquitos were the other problem as they were everywhere and in spite of using insect repellent and covering our face with netting, they would still get in our mouths which was most irritating. When we finally reached the outcrop it was well worth the effort as we were able to examine the very same rock type that formed the Norman Wells oil reservoir, which was most interesting. When the Cal Std Beaver finally arrived at Norman Wells with our provisions, we loaded up the canoe with our groceries, fuel and camping equipment. We all climbed aboard and quickly noted that the canoe was overloaded with water up to the gunwales. Alf said there was no way all three of us and the supplies could travel down river in that canoe. He decided that I should stay behind in Norman Wells while he and Hank travelled down river and set up camp in the Fort Good Hope area. I don't remember staying alone in Norman Wells so I assume the Beaver pilot and I just stayed overnight in Norman Wells and the next morning he flew me to the camp near Ft. Good Hope. When I arrived at the camp I was surprised that there was a young Indian lad staying at the camp who Alf had apparently hired from Ft. Good Hope to serve as a guide and help out with cooking and

other camp chores. He had his own canoe so was also able to assist with camp moves. I don't remember his name but do recall that he also played the violin and entertained us with his music each evening. The campsite near Ft. Good Hope was chosen because of its proximity to the Ramparts of the Mackenzie, where a deep canyon has been created by the river cutting down through the outcropping Kee Scarp limestones. The Mackenzie River narrows considerably through the canyon so the current is much stronger making it more difficult to navigate the river by canoe especially when travelling upstream. I recall one day a driving rainstorm came up as we were travelling through the Ramparts back to basecamp and it seemed to take forever to make any headway against the strong winds and currents.



During our stay at the Ft. Good Hope camp site we studied the outcrops of the Kee Scarp limestones along the Ramparts in as much detail as we could so that we could compare them to the exposures of the same unit on Bosworth Creek. We also travelled up the Mackenzie River to the Sans Sault Rapids where we spent considerable time examining Devonian outcrops on nearby East Mountain. One day we also ventured farther upstream beyond the San Sault Rapids to investigate the outcrops on Carcajou Ridge. I remember that it was quite a long arduous climb to the summit of East Mountain but the spectacular view from the top made the effort worthwhile. It was also a good spot to eat lunch. It was on East Mountain that I learned that it is much easier to climb up a steep cliff on a mountain than to climb down one as it is more difficult to see one's footholds on the way down. It was a lesson I was able to put to good use in the following summers of field work in the mountains. We did visit the village of Ft. Good Hope one day as I have photos of the Catholic Church there. My slide collection includes a photo of the midnight sun at Ft. Good Hope so this would have been one of my first experiences in witnessing this phenomenon. After we had finished our work in the Ft. Good Hope area, Alf Lenz decided that it would best for me to leave this field party because even with the help of the Indian guide and his canoe, moving the camp and supplies for three geologists down river was still impractical. The next time the Beaver arrived at the base camp, I packed up my gear, bade farewell to my fellow geologists and headed off with the Beaver pilot so that I could contact other Cal Std field parties working in the region and see if they could use my help. It was the last time I would see the mighty Mackenzie River that summer.

(to be continued)