

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Bill Clemis

INTERVIEWER: Nadine Mackenzie

DATE: July 1984

NM: This is Nadine Mackenzie speaking. Today is July 18th, 1984. I am at the home of Mr. & Mrs. Clemis and their son David is going to talk on behalf of his father.

DC: It is felt that some prologue is necessary so that those reading or listening to this material may have some idea of the contents, as the only sources available to me in this preparation are a not too great memory, plus some old well files. There will be no statistical comparison of numbers, no description of cores or outcrop sections, nor any significant reference to palaeontology. Instead this outline will concentrate largely on my impressions of developments and of events around me as more than 40 years involved, unfolded. My first contact with the oil industry was in the mid 1930's, when several of us boys visited a cable tool rig a few miles west of Lethbridge, where I grew up. I believe the well was operated by Texaco, and as is usual, the story among the neighbouring farmers was that the production had been capped, waiting for some ulterior, later developments. My family had a small farm in the west Lethbridge area and somewhat later, a similar cable tool rig was sputted in the valley of the Old Man River, not far from its junction with the St. Mary's River. Then, as now, as is common with independent operators, they lacked the finances to continue and had left the cook at the rig as a watchman. I used to visit him occasionally, and have no idea of the eventual outcome, but presume they went broke. After graduating from high school came a rather aimless period during which I worked on our farm, as a labourer in a local flour mill and ran custom combines in the late summer and fall. In 1941 Marion Trendholm and I were married. We courted for 4 years, during and after high school, whereupon we immediately moved to Edmonton, where I enrolled in an Arts and Science program at the University of Alberta. She in turn, immediately obtained sales work, which was a major factor in supporting us. Thus I was introduced to stratigraphy, palaeontology and mineralogy. The emphasis at this time, in Alberta, was almost entirely on mining, with considerable stress on coal. At the end of the first year, lacking the connections of some of my colleagues, who obtained summer employment with the Geological Survey of Canada, we returned to Lethbridge, where I again worked in the flour mill and managed to save enough money to help support us through the second year. At this point the Canol project, and the building of the Alaska Highway were in full swing but I was successful in obtaining employment with Imperial Oil Ltd. as a geological assistant. The war time push was on to find new oil in addition to the existing Norman Wells field, to feed the then building Canol line to Alaska because of the Japanese threat in the area. So really, this is where it all began. I was hired by Dr. Ted Link, who following Bosworth, found and developed the Norman Wells field. He knew I was from southern Alberta and used to call me the archdeacon of Crystal???

Springs. The Canol

#034 project was a mixed Canadian, American affair, with some 10 geological field parties employed with personnel of both countries involved. I recall the medical examination, standing along with others, at the mercy of American military doctors. Among those present was Dr. Arthur Noss, a Canadian but a recent PhD graduate from Stanford. I asked him if I could serve on his party. He agreed and that was the beginning of a long friendship. The next step involved waiting all night for a plane to get north, and in the morning boarding a C-something or other, transport plane, with bucket seats along the walls, and plenty of room to rattle around. This was my first plane ride. In due course we landed at Fort Nelson, which at the time consisted of a store and a trading post, which appeared to be sitting on a mud flat. This is the point from which we took off by canoe, on a traverse that eventually took us all the way to Aklavik, in the Mackenzie Delta. More or less concurrently, 9 other parties were organized who conducted surveys along the principal rivers, such as the Arctic Red, the ???, the Great Bear, the Ramparts, the Peal and other streams. And also, uplifting areas of outcrop. The purpose of these was simply to gain some degree of regional knowledge of the Mackenzie Basin. Even the geography was largely unknown at any distance back from the river. Maps showed dotted lines for rivers and lakes, probably heard about from Indian trappers. The Americans undertook to correct the situation to some degree, by flying trimetragong??? photography. Each flight path would take one vertical photograph and one lateral oblique, out each side, spanning a distance of perhaps 50 miles. These distorted pictures were the basis used for many of the surveys. Accordingly, in early May, 4 of us in 2 canoes left Fort Nelson, to traverse the Nelson and subsequent downstream rivers. Transportation was entirely by paddle, without outboard motors. Fortunately the Nelson was not a difficult stream, nor did it provide much in the way of outcrop in soft Cretaceous formations. I recall visiting, along the route, a trapper's cabin, a Dan Maloney, who had beaver skins on open frames drying in his yard. A further port of call was the Hudson's Bay Co. trading post at Nelson Forks, which was white and red, freshly painted and of a new appearance. From this point we entered the Liard River, which was larger and more exciting, quite unlike canoeing in Bowness Park. Fort Liard was passed in due course, and the Liard rapids were run without serious incident, the water being a suitable level. Next we entered more enduring Carboniferous and Devonian formations. These persisted for much of the remainder of our journey. As we approached the mouth of the South Nahanni the river flowed sluggishly through low lying muskeg, quite conducive to large and abundant mosquitos. A one day traverse was made up the South Nahanni River. At the mouth was another trader trapper named George Buddha, a real character. The river banks consisted of Devonian strata the rest of the way to Fort Simpson. There was a green timber, 2 storey hotel with metal cots. One had to provide one's own sleeping bag. I cannot recall whether it was from Fort Simpson or further downstream but at some point we hitched a ride with a tug pushing barges down to Norman Wells. These tugs had been transported, complete with crews, from the Ohio or Mississippi River systems, to help supply the Canol project, which of course, was a plan to build an oil line from Norman Wells to Fairbanks, Alaska. In due course we passed Wrigley and Fort Norman, where bare rock made a spectacular backdrop against the river, and then on to Norman Wells. From Norman Wells, we were assigned to do a traverse of the Carcajou??? River, lying more or less parallel to, and west

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of the Mackenzie River. This involved being flown by a float plane to a lake as close as possible to the river on the east side. A considerable portage, over what seemed like a mountain range, was necessary to reach the river. The Carcajou flows through very rugged country, and this was quite interesting. Also of interest to me were flocks of Dahl??? sheep, a white version of the Big Horn. Next back to Norman Wells, where we outfitted out little group and in due course, were again transported by tug downstream past the Ramparts, a very narrow fast moving stretch of the Mackenzie to Fort Good Hope, a neat appearing Hudson's Bay Co. post where the factor had a very impressive vegetable garden. Several side trips were made from Fort Good Hope to areas east of the Mackenzie. We would be flown in to a suitable lake by Norsemen plane with canoes on and parallel to the floats. One such area we visited was Yaleta Lake where Devonian fossils were obtained. Next we prepared to run the remaining length of the Mackenzie River, downstream to Aklavik. This was largely uneventful, except when the winds stirred up the 3 mile length of the river. The occasional side trip was made back from the river in search of outcrops. One such trip of 8-10 miles, back from the river to the west, resulted in us visiting a large lake which we called Marion Lake, after my wife. The name has now become official, to our satisfaction. Continuing on down the river I recall stopping at Little Chicago, where fish were drying on racks and a trapper had 3 very eligible daughters. When we decided to camp for the night, we could generally count on finding a barrel of diesel fuel with which to start a terrific fire on the beach. This and other supplies were scattered along the length of the river. The next important step was Arctic Red River where we stayed with the Mounties. By this time I had developed an alleged skill in preparing bannock or biscuits and I recall spending a whole day preparing a large supple. While there the distributor, a stern wheeler, came by loaded with white fox furs from Banks Island. From Arctic Red, downstream, the channels of the Mackenzie are low, muddy and of little interest. Aklavik also appears to sit on a mud bank, and one can understand the reasons for setting up Inuvik. One side trip westward, was made into the mountains, to the west of the Delta, where a considerable outcrop was observed of lower Cretaceous age. One result was the naming of the Donna River shale, after Art Noss's wife. This formation has become entrenched in geological literature. After a trip by tug to Fort McPherson to pick up another party, we returned to Norman Wells and subsequently back to Edmonton, where I entered my final year in geology. The following spring, 1944, I obtained employment as an assistant geologist with the California Standard Co., for surface mapping in southern Alberta. I was issued a company car and felt the world was my oyster. My party chief was M. B. B. Crockford, from an old time family from the Medicine Hat area. Our project was to map the South Saskatchewan outcrops, from Bow Island to below Medicine Hat, and also the surrounding country, particularly southward to the Cypress Hills. Plane table mapping in the river valley was carried out using mentonite??? beds, shark's teeth beds, coal seams and persistent sandstone members, interspersed with live rattlesnakes and scorpions. At about the mid point of the summer Dr. Crockford's son contracted polio, necessitating his return to Calgary, whereupon I was placed in charge of the 4 man party. I'm confident that our work proceeded satisfactorily but after hours discipline left something to be desired. Later, when Mr.

Crockford returned he and I continued mapping into the fall, particularly southward, to the base of the Cypress Hills. Later I worked on mapping in the Calgary office, and at year end found myself unemployed. However, having a respectable record with Imperial Oil, I was re-employed by them, and in early February 1945, found myself again, in Norman Wells, this time as an instrument man for a seismic crew. The locale of our work was in the Loon Creek area, west of Norman Wells and the Mackenzie River. Personnel included the late Frank Spraggins, later the president of Syncrude, the first large scale heavy oil project in the McMurray area. Also on the crew was A. L. Labby Labarge, later prominent in Imperial Oil's production department. This was a tough project. I replaced an instrument man who'd had it and during the winter, I went through 4 rodmen. We had no thermometer in camp, feeling we would never get our work done if we knew how cold it was. Cats had to be left running 24 hours with heating pots under them. If the vehicle shut down it was inactive until spring. When spring finally did come and the muskeg forced cessation of the operation, I returned to Norman Wells to prepare the forthcoming field geology season. We were a 2 man party with the late Lorne Faulkner as party chief and I, his assistant. Most of our work that summer was confined to the area northeast of Fort Good Hope. We covered numerous streams, including the Loon River, the Tootesita River and Thunder River. Large lakes visited included, Yaltea, Rond, Manual, Rory and Loon Lakes. From the early days of the Hudson's Bay Co. the Indians had used pitch from this general area to waterproof their canoes. It was decided to try to locate the source of this material, so took an Indian from Fort Hope, by Norseman plane to find it. The oil seep was located by plane east of Rond Lake. We landed on the lake with our outfit and after half a day of searching, I finally located the oil seep. On leaving Rond Lake we had a bad accident with our overloaded canoe but managed to salvage enough supplies etc. to work our way out of the country and back to the Mackenzie River. Later in the summer, in the vicinity of the Thunder River, we broke our canoe in half in a very fast, narrow stream. When the canoe got sideways in the current I had some copper wire in my outfit, intending to snare rabbits, and with tree branches, extra canvas and a remarkable glue called, Ambroid???, we were able to continue. The next several days were extremely difficult but we finally reached the Mackenzie where a cache of the Mounted Police provided welcome relief. One of our principal ventures during the summer involved transport by float plane, to a lake on the Carniwoth??? River, which we ran by canoe to its junction with the Anderson River, through extensive shale sections and much varied wildlife. Our rendezvous at the junction with the Anderson River had been pre-selected from a far out stretch on a trimetragong photograph. We hoped it existed. After several days waiting for the plane, during which we were down to flour and syrup, the welcome plane arrived to return us to Norman Wells. We returned to Calgary in October and the winter months were spent on reports and various office work. The next field season, 1946, provided quite a contrast to the above canoe trips. My party chief that year was C. R. Stelck, soon to become Dr. Stelck and a staff member of the University of Alberta. Our area of examination was the foothills and mountains in northeastern B.C., centred on the Nowaway??? River, adjacent to the Alberta border. This was part of a large foothills project, sponsored by several of

#174 the major oil companies, including, along with Imperial, Mobil, Gulf and Shell. It was called the Northern Foothills Agreement and each company was assigned an area for mapping. The area was very rugged and characterized by numerous varied shale and sand formations of Cretaceous age. Dr. Stelck was an avid fossil collector and many and heavy were the specimens I carried back to camp. We were serviced by a pack string of about 20 horses, 2 packers and a cook, all from the Beaver Lodge area of Alberta. On the completion of our summer's work Dr. Stelck had to return to Stanford University, to complete material for his doctor's degree. This meant that I was responsible for preparing our report on the summer's findings. This was something of an opportunity for me. In the spring of 1947 I was assigned my own field party. We were to map the Peace River, from Fort St. John, to Peace River town, and in addition, study the large area north of Peace River to the Clear Hills. I had a 3 man party consisting of an instrument man, an assistant and myself. We first attempted to traverse the Peace River, commencing at a newly constructed bridge near Fort St. John. As is usual in June, the river was high and fast, with much driftwood coming down the current. I had the rod in a 12' Peterborough canoe and paddles, while the other 2 had a 17' square stern Chestnut, equipped with approximately a 5 horsepower outboard motor. All proceeded well until we reached the B. C.-Alberta border on June 6th, where a significant bend in the river occurs. At this point the other 2 stopped to take a reading on the rod I was holding on the opposite bank. There they decided that by moving slightly further downstream they would get a better future shot ahead. Accordingly, they got back in their canoe to move it slightly. Unfortunately the motor would not start and they were swept under an overhanging spruce log or sweeper. There my assistant, Ronald Macdonald, was struck by the sweeper and subsequently drowned. He had been a strong young man and an excellent swimmer, whereas the instrument man, who could barely swim, clung to the overturned canoe and eventually succeeded in getting to shore. Within a day or two of this terrible event, a party member also drowned on the North Saskatchewan River in a party headed by Dr. C. H. Crickmay. In due course, I received 2 new assistants, the former instrument man being pretty much unfit for further work of this kind. It was decided to defer the Peace River traverse until later when water levels were lower and we were to work the uplands, north of the river from Fort St. John to Clear Hills. This work involved hiring a pack string of some 20 horses and 2 packers from an outfitter north of Fort St. John. This operator had made very satisfactory returns by outfitting the surveys for the Alaska Highway. Before leaving the immediate area traverses were made of parts of the Beaton and Doad??? River valleys, where good outcrops were exposed. Following this we set out with a pack string eastward, and crossed the Alberta-B.C. border, about over the best part of the latter discovered Boundary Field. The principal work accomplished during this portion involved the examination of outcrops around the Clear Hills, where a ??? quartzite conglomerate was noted similar to that on the crest of the Cyprus Hills. Similar outcrops were visited along the Clear River, where the Cardium or Bad Heart, was encountered. The elevation of which first suggested a broad, structural feature when compared with the same beds south of the Peace River. This to my knowledge, was the first evidence of the Peace River High. In the later summer we returned the outfit to Fort St. John, and again,

#229 recommenced our plane table survey of the Peace River. Again, this was with 3 people in 2 canoes. One of the assistants having returned to university, we engaged the services of a little half-breed who had some experience in river travel. In the vicinity of Royce, in the big bend of the Peace River, semi-continuous Dunvegan sandstone beds provided suitable evidence for structural mapping. Anomalous structural relationships had earlier been mapped by Dr. Crickmay, and these were again mapped. Nothing else unusual was observed, although continuous plane table mapping was carried out to Peace River town. A survey of the Whitemud Creek north of the town again revealed what appeared to be a structural anomaly. In October, when the ice was forming on the Peace River, we returned to Calgary. During the winter, when the report was prepared, I had the temerity to postulate a large, broad, structural feature centred on the Royce area. Later, as drilling in the area was undertaken, this was proven to be so. The spring of 1948 again found me heading a field party of 4 men. This time our assignment was the Smoky River and its western tributaries, the Caquaw, Cutbank, and Wapiti Rivers. The first step involved transporting 2-17' canoes, motors and all supplies from Entrance, in the foothills west of Edson, to the headwaters of the Smoky River, a distance of about 70 miles. Only a narrow hunters and forestry trail existed between the 2 points. This was accomplished with a travois type arrangement, with the canoes on long poles between 2 horses. In due course, we successfully reached the headwaters of the Smoky River and set out on the river. Foothills area outcrops on this and other rivers were characterized by huge coal seams, up to 12' or more in thickness, which later no doubt, led to coal developments at Grande Cache. I do not recall the plane table traverse of the Smoky River as being particularly eventful, except for the occasional rapids. In one case, watching the second canoe slowly sink beneath the waves, while its occupants continued to furiously paddle. Considerable time was devoted to locating benchmarks, from which to tie our surveys, established by Dominion surveyors in the early 1900's. Some structural irregularities were noted, in prominent sandstone beds near the junction of the Caquaw and Smoky Rivers. This particular survey terminated at Watina, and thereafter, we employed a pack string from Beaver Lodge, to provide transport and supplies for access to the Wapiti, Cutbank, and Caquaw Rivers. We also attempted to utilize portable, collapsable canoes but these were generally unsatisfactory. However, in general, we accomplished our objectives, and as usual, returned to Calgary in the fall for report preparation and staff functions. Through 1949 I did not go into the field again, but had various office and related functions. I was introduced to aerial photography, including the mapping of formations in the foothills and mountains and with ??? regulated stereoscope, attempted to measure dips and ??? structure. Some preliminary attention was also devoted to fracture analysis. Because of this activity, I was selected as Imperial's representative to a Jersey Standard seminar on aerial photography, held in Denver. Delegates were also there from Carter Oil Co. and Humble Oil Co. This was my first venture into the international scene. I was quite impressed with the work of Humble Oil's Dr. Fish, and I believe, I made some contribution also. A considerable time later, Imperial launched a program of applying fracture analysis to a huge number of photographs of the Alberta plains. I was in charge of this, but doubt that it ever made any significant contribution to oil finding. It was

#295 something like Creekology???, once you know the field is there, you can spot it. Also during this period it was the duty of Stan Harding, later with J. C. Sproule, and myself, to prepare a weekly triplicate report to Mr. Eric Harvie, who owned a considerable number of freehold leases in the currently drilling Redwater field. He was wintering in Florida and giving Imperial the silent treatment, while he decided whether to let Imperial operate or take it over himself. Needless to say, Imperial were doing everything possible to retain the operation but eventually, to no avail. I was sent for a week to observe the Redwater program, with a view to learning something of the drilling and production side of the business. The geologist in charge was Rod Morris, now deceased, and he was extremely busy. He had as many as 4 wells, all drilling at the same time and the only way to control the operation was to instruct the drillers not to change bits as they approached the Leduc reef. On encountering the reef, they would grind to a halt and then he could visit the well, make formation pits, and arrange for drill stem testing, coring or whatever. The success of seismic surveys in the discovery of Leduc and Redwater had elevated the geophysical department to a position of supremacy in the exploration department and had relegated those in geology to a very subordinate position. Nevertheless, field parties were placed in the field in 1949 and I was the one nominally in charge of them. But admittedly, my position was very tenuous, with so many old-timers around. Seismic surveys have been less successful near Leduc, in the Acheson-Stony Plain area because of unusual gravel and glacial drift. California Standard had had success in determining Acheson by the use of core drill survey, showing drape over the reef in the shallow beds. Imperial also conducted such a survey in the Stony Plain area, of which I was in charge, along with the above mentioned photo survey and liaison with field parties. This core drill survey met with success in outlining several shelf trends.

NM: This is the end of the tape.

Tape 1 Side 2

DC: In the spring of 1950 morale was very low among geologists and eventually I resigned from the company to join a new entrant into the scene, namely Petrofina of Belgium.

NM: This is the end of the first reading by David Clemis.

Tape 2 Side 1

NM: This is Nadine Mackenzie speaking. This is the second reading by David Clemis.

DC: From here on this narrative cannot be divided into individual years, as with the above. A period of 12 years with Petrofina, like all human activity, had its highs and lows, which I will attempt to outline hereafter. I joined Fina in June of 1950. Trajan Nitesku??? had been assigned here and on his way west, had hired a bilingual secretary in Montreal. Mr. Nitesku, an engineer, had had long service with Petrofina in Romania, and later, when the Russians took over, for a period with Standard of New Jersey. He and his wife had escaped the country by swimming the Danube and he was then imprisoned for several months in Yugoslavia. Eventually, he reached Belgium and initiated this new venture in

#013 western Canada. He'd been proceeded here in what one might call, a reconnaissance trip by the effervescent Belgian geologist named George Braman???. Mr. Braman had come under the influence of Pacific Petroleum and others and had committed for participation in about half a dozen projects in Alberta. One of these resulted in a small oil discovery, in the Viking formation, in the Castor area. This was Fina bulkwork, province #1, 320-38-12 west, 4th meridian. This was followed by 2 more wells. One was completed as a shut in gas well and one was abandoned. Subsequently however, additional productive wells were obtained. During this period, I hired a geologist, D. W. Wilson, fresh from the University of Alberta, but with some drilling experience. He must have been amazed at my instructions at coring and testing, for at this point I was totally inexperienced in drilling programs. Also during this period, we participated in another central Alberta well, Albercan Western Prairie Fina Goose Lake #1, in 13-28-41-12 west 4. This well was abandoned but is of considerable significance in this tale. Several other wells at widely scattered locations were drilled in Alberta, in partnership with Pacific Petroleum and others. None had results of any real interest, except at Redwater. In association with Royalite Co. Ltd. we acquired an interest in 2 reservations, in the Spirit River-Beaver Lodge area, of the Peace River country. These were controlled by a company headed by Joseph Hershorn, who later was prominent as a patron of the arts in New York. Fina was named operator and I proceeded to arrange for a slim hole, or core, drill program, through an old Turner Valley-Black Diamond operator, Fred Cortmeyer. This program was conducted in the fall of 1951 and consisted of about a dozen or more holes, widely spaced, across the 2 reservations. Hole depths were perhaps, 100' on the average. Haliburton was engaged to run electric logs of the holes, for structural correlation. Electric logs were extremely primitive at this time and correlation was very difficult. Sometimes alternative interpretations were possible. Also in the month of November, when most of the program took place, temperatures dropped to 30 degrees below Fahrenheit. I remember using a Fargo pick-up for supervision and was pleasantly surprised when it would start. In 1952, drilling commenced in the area. 2 successful gas wells, from Cardite??? and Motscuan???, were drilled almost simultaneously. Unfortunately these were followed by 3 dry holes in attempts to outline the structure. Subsequently however, we developed a number of wells here. This activity was of some significance for it marked our first real exploration success. It also had some importance for it marked the discovery of the Gordondale gas field. The CSPG production Gas Fields of Alberta, published in 1969, lists this field as discovered by Western Decalta and others, as of 1963. But by that date Fina and associates had a series of gas wells, a gas gathering system, and a plant built and were probably marketing the gas to West Coast Transmission. Also in this year, Fina and partners were successful in purchasing a Crown lease in the Stettler field area, the successful drilling of which resulted in a new small segment of D-3 production. Another event, ultimately of major influence for the company, took place about this time. We had been advised of the arrival of senior directors from Brussels and in preparation for them, I had worked on mapping at home, nights, often until 3 a.m. I attempted to map on a regional basis, an isopatch??? of the Eyrton??? shale, which is in part correlative with the D-3 reef when present. This work

#058 had of course, outlined the thinning of the shale along the Leduc-Woodbend trend, south, southwestward to township 41, range 2, west of 5th meridian. However, the Baillie-Raven well, drilled in 13-37-4, west of 5th, was somewhat anomalous. There was obviously a thick shale basin to the west of the Leduc-Woodbend trend but the Baillie-Raven well indicated a somewhat Eyrton shale, which with minor evidence, suggested a west side to the basin, with the implication that a marginal reef trend might be present, with a north-northwest alignment. The Petrofina directors arrived in due course, accompanied by the previously mentioned geologist, George Braman. In the course of our meetings Mr. Braman pushed for the acquiring of more exploratory lands and eventually it was agreed to do so. I persuaded them, by my sketchy mapping, that probably the best available locale for future exploration lay in the Whitecourt-Edson area. Accordingly Mr. Braman and I proceeded to Edmonton and filed on 1,100,000 acres of Crown reservation lands. I learned later that we beat Gulf to this acreage by 3 days. When, and even before, ground conditions permitted, we commenced a reconnaissance seismic survey on these lands. The tract was so huge and the survey progress so slow, that at the end of the first winter, we had an extremely loose network of control, with no significant results. I recall that this program cost \$140,000, which with our limited budget, caused people's faces to blanch when it was mentioned. Petrofina was essentially a producing, marketing company, very engineer oriented, with little taste for the exploration phase. Accordingly it was decided, with the limited funds available, to take in partners. Although I was very directly involved in the ensuing negotiations I cannot remember the terms under which we took in Hudson Bay Oil and Gas, and Staniland, later Amoco, each with 1/3 interest. Thus, a three way partnership was created, with Fina named as operator for drilling, to the chagrin of Staniland, and HBOG operating for the extensive seismic work which was planned. Such work, during 1953, provided evidence of a significant Devonian trend in the east and northeast portion of the reservation block. Another development of significance to the company, was participation in the Nalmaal??? field, early in 1952. The drilling of the first well was arranged by Dr. Arthur Noss, through Scurry Oil and an independent operator from Wetaskiwin. A group from Cleveland were also involved, but they decided not to participate in the well. Accordingly I picked up their interest, on the behalf of Fina. A dual zone, D-2 and D-3 zone discovery resulted and there was much celebration at the well site, including considerable whiskey and smoked turkeys, brought in from Wetaskiwin. The time would have been much better spent in acquiring adjacent freehold leases for later development. In any case, our group eventually had 5 wells, 4 of which were dual zone producers. By this time as well, as exploration manager, I had become a director of the company and was #2 in charge. I was probably the highest paid interpreter in town for Mr. Nitesku, who while fluent in Romanian and French, was just becoming competent in English. Also apparently, I was considered a hard task master and no doubt, was fairly abrasive. This may be evidenced by the fact that, at the Christmas party in 1953, the staff gave me a whip as a present. As a small boy in Raymond I had learned to crack a much larger one so I spent part of the evening destroying balloons with my present. At the same party, I received an engraved Omega watch from the company. Looking back, this might been an omen for an early

retirement. During 1954 extensive seismic work continued along with the drilling of the Whitecourt

#108 group's first well on the block. This was Fina-Staniland-Hudson's Bay-Sundance #1529, in 1st subdivision, 15th section, 29 township, 55 west of the 5th meridian. The location was long the deep-seated seismic trend which had been outlined. This well found 998' sections of D-3 reef and although water laden, it proved the significance for possible reef production of a huge area of west central Alberta. The Albertan, now the Sun, stated "a dry hole north of Edson may be the most significant find in Alberta this yer, opening virgin territory as prime D-3 hunting ground". Our group also was very excited about the possibilities for a sufficient seismic control to suggest the area of maximum interest. This work was refined during the 1954-'55 winter and a follow-up location was selected for the second well. At this point we experienced a further visit from the senior directors from Belgium. They were again, very concerned about the high exploration costs, and after much deliberation we were instructed to try to reduce our interest in the block even further. Mr. Nitesku and I were aghast at this development and protested but to no avail. Accordingly we approached our partners, Hudson's Bay Oil and Gas and Staniland, both of whom were quite willing to absorb a larger interest. Although I was intimately involved in these negotiations, I cannot remember the price we obtained for the 16 2/3 interest. I do recall that we recovered a sufficient sum to recover the money that had been spent in western Canada, by Fina, at that date. To continue with this particular project, the Fina-Staniland-Hudson's Bay Windfall well, was spudded in February 1955 in 12-36-59-15 west of the 5th meridian. In June drill stem testing indicated the discovery of an important oil and gas well. As a result activity in this area occupied much of our attention and finances for the next several years. Other activity during this period included drilling in the Greencourt area with encouragement but indifferent results. Also, in association with Royalite and West Canadian Oils, we acquired some leases at Crown sales at Yorkum. These resulted in some satisfactory development. On a more personal basis, early in 1955, I was sent by Petrofina, Belgium, to evaluate an independent oil company based in Dallas. This enabled me to visit production and facilities in western Louisiana and throughout southern and western Texas. Much of the production was of the stripper variety, although they did have some income from scurry reef production. In any event, on my advice, Petrofina turned the deal down. Next, a perk of considerable importance came my way. I was advised that Petrofina would send me to the 4th World Petroleum Congress in Rome. In early May Marion and I left on a 6 weeks adventure to Europe that I doubt could be duplicated today. We spent time in London and Windsor, then on to Brussels, from which point I visited the refinery at Antwerp. Marion visited the Rubens Gallery there. We were driven everywhere, including the site of the Battle of Waterloo and were treated royally. From the Congress in Rome, we took tours to Peresia???, Orgetto??? and Assisi and also to Naples, Capri and Sorrento. Next we flew to Nice and from there found a nice hotel in the French Riviera, midway between Monte Carlo and Cannes, where we spent a delightful time. Subsequently we took the blue train from Nice to Paris. Again, Petrofina personnel took care of everything. After several days we embarked on the French liner, Liberte, for New York. While in mid ocean I received

a wire from Mr. Nitesku and Bruce Bailey, our chief geologist. They advised me that the Windfall well had been successful and suggested that we find out if there was any good champagne on board, which there

#165 was. Throughout the remainder of the year, seismic activity was increased, as was drilling in the Windfall area and also, in the Silver Creek area, in the immediate north, across the Athabasca River. One much less credible development took place at this time which should also be described. In 1950, Fina had retained leases surrounding the previously mentioned Albercan-Fina-Goose Lake well. Now, due to present and future anticipated expenditures, and largely at my instigation, these leases were dropped. John Rudolph of Banff Oil had patiently waited for this to happen and immediately purchased the leases. Banff's subsequent drilling resulted in the discovery and development of the Bell Shale Lake oilfield. Meanwhile, our activity continued at a high level in the Whitecourt block. During the next 2 years important discoveries were made on the Whitecourt block, with fields of varying sizes, such as Pine Creek, Beaver Creek and Marlborough. Generally, the results were largely gas reservoirs. During this period I tried hard to devote some of the limited available budgets to other exploratory activity, in Alberta and elsewhere. The results were meagre. One such far out venture involved an extensive report on the Mackenzie Delta area. In part, comparing it to the Mississippi Delta. A proposal for land was submitted to British Petroleums as a possible partner, but no action was taken. I'm convinced that throughout a 2 or 3 year period in the latter half of the 1950's, we had the best staff in town for any company our size. This staff was gradually eroded because of lack of activity anywhere but Whitecourt. And more importantly, by the inability to obtain proper salary increases because they would have conflicted with salaries of others who were employed through mergers. Let me cite the following examples, Dr. M. E. Hriskivic, a Canadian with a PhD from Chicago. He later became a director of Aquitaine and served on the distinguished lecture tour of the American Association of Petroleum Geologists. Bruce Bailey, Fina's chief geologist later, became the manager of Canadian Reserve Oil and Gas. George Hobson, a geophysicist with Fina later became a prominent figure with the federal Department of Mines and Minerals. To continue with this period, as mentioned above, we had a 3 way partnership with Fina, Hudson's Bay and Staniland. We also formed a 4 way group, consisting of C&E Corp., Canadian Superior, Canadian Oil and Gas Ltd. and Fina. The purpose of this group was to pick up reservations or leases of mutual interest, which did not conflict with the activities of any of the partners. This was moderately successful, without undue financial strain on any of the partners. One far reaching development of this group was the work of George Robertson, a geologist with Canadian Oil Co., who in my opinion, turned up the first geological clues leading to the later discovery of the multiple fields in the Rainbow Lake area. Also, during this period, before acquisitions became as popular as they were in the late 70's and early 80's, Fina embarked on such a program. The first one involved Calvin Consolidated, a Max Bell company managed by Frank Fornier, formerly of Imperial Oil. I was immediately involved in the acreage evaluation, with the engineering people handling Calvin's production. The second such venture was Western Leaseholds, owned outright by Eric Harvie. Here again, there was a very extensive acreage evaluation. After acquisition of

Western Leaseholds, I was sent to attend the Banff School of Advanced Management, a Harvard offshoot. There were some 50 or 60 young executives from across Canada in attendance. In 1960 Fina and acquired stats, moved into the new building at 736 - 8th Ave. S.W. At this time, this was

#225 the best built building in town and it may still be. The period that followed was very difficult, partly of my own doing. The company developed a trend entirely away from exploration and since this was everything to me, I became somewhat disenchanted. I did not like what was happening with personnel, and although I was completely supported by Mr. Nitesku, other influential elements tended to prevail. As a result, after living with this situation for about a year I resigned from the company in February 1962. The first thing Marion and I did was take a holiday to the Bahamas along with another couple from Commonwealth Drilling. We stayed principally in Nassau and the highlight of the trip for me was the fishing trip we took. I caught a dolphin, the fish, not the mammal and numerous yellowtails and tuna-like creatures. On the way home we stopped over in New York, where I approached a couple of companies. One was Oasis Petroleum, a branch of Continental Oil Co., as was Hudson's Bay Oil and Gas in Canada. I'd had good relations with Hudson's Bay and was offered a job in Libya, in which I was interested until I found out there was a different salary scale for Americans, compared to others, the latter considerably lower. I also visited Ultramar, a British company, who'd had a subsidiary in Calgary, with whom we'd had considerable business activity. They offered me a limited contract to do consulting work, which eventually paid for the whole trip. I was to present geological prospects, which I might uncover, to them and their file facilities were made available to me. The best prospects of this time were from BA, later Gulf, who held a large number of CPR leases throughout central Alberta. The CPR had given them a deadline to either drill or surrender the leases so farm outs from BA were available. Some of them provided very good prospects. But I was never able to persuade the Ultramar subsidiary to take any of them. Later some of them resulted in good production. Next followed 10 years in the wilderness. I learned how Moses must have felt. While I was presented with no tablets, I had good and bad times. Activity consisted of obtaining prospects from some companies and presenting them to others. This activity is really the work of landmen, but they often lacked the incentive I had. Usually for a drilling prospect, I would require say, \$5,000 cash and a 1 or 2% royalty in any production obtained. In this hand to mouth existence, I was joined by Gordon Macmillan, who had been my instrument man in the field in 1946. He had since graduated in geology from Michigan University, having attended there on a hockey scholarship. Our relationship lasted about 4 years. I would find the prospects and work up the terms and he would deal with the geology and economics. He was also useful in persuading people who did not wish to live up to their obligations. In other words, he was a good enforcer. We arranged and sold productive deals at Ongra??? in Saskatchewan, Leduc, Woodbend, Wood River, Dischu??? Lake and others. Later, on my own it was either a condition of feast or famine. Sometimes I was forced to sell royalties to keep going. This was an exciting time. I enjoyed developing plays and making deals. It was a very open, free business environment. Deals were made over the phone and sealed with handshakes. I was never

big on paperwork. It was once claimed that I would walk into the office with an enormous deal written on a cigarette package. Towards the end of this period I did some work for Western Minerals, a relative of the company Fina had acquired, where apparently I still had a good reputation. This involved one major project in the James Bay area of Ontario. Throughout this period we

#292 didn't really suffer. Most of the family attended Expo in 1967 and further holidayed on Prince Edward Island. In 1969 we all spent 3 weeks in Hawaii. This was a period of either feast or famine, during which I sold off most of the royalty I had accumulated. At this general period, like many small operators, I took a look at mining, as well as oil and gas. Copper was the big objective and rumour had it that all one had to do was locate a deposit in B.C. and the Japanese would buy you out at a handsome price. In this regard a geophysical contracting firm called Geofax, was formed consisting of Stan and George Morritson??? and myself. They both had extensive geophysical backgrounds, particularly in seismic work and I had a little money, some contacts, and hopefully promotional ability. We acquired 2 sets of induced polarization equipment, we undertook contracting work for established companies and some not so well established. Things went reasonably well for a couple of years and at times, we had as many as 6 student employees. Eventually the federal government passed legislation which curtailed mining activity and we were reduced 2 employees, despite government ads urging one to hire a student. This work took us to many localities in B.C., Saskatchewan and to one project on the Copper Mine River in the Northwest Territories. The demise of this venture can be linked to the fact that several small operators who we worked for, could not or would not pay their bills. We belatedly found business in B.C., especially in mining, quite different from the oil business. Eventually the equipment was sold and we all reverted to what we knew better. During 1969 an event took place which had a marked effect on developments over the next 10 years. A former Fina geologists, who later worked for Pinnacle Petroleum, largely Japanese financed at that time, developed a subsurface theory concerning a reef front in west central Alberta in the Cheddarville??? area, north of Rocky Mountain House. This front had been well established by subsurface mapping, but a dry hole by Imperial Oil Ltd. had helped to delimit it even further. Due to my former association with Imperial Oil, it was arranged that this geologist, Mike Taychik??? and I would go to Edmonton and try to arrange a farm out with Pinnacle.

NM: This is the end of the tape.

Tape 2 Side 2

DC: In this we were successful and with the aid of some available seismic control a well was sputted in township 37, 7 west of the 5th meridian. Depth to the reef was approximately 10,000-11,000'. Partners in the venture were Mobil Oil, Canadian Occidental, with a minor interest held by Alminex, a local independent. For arranging the deal and supplying the background information Taychik and I received a 4% overriding royalty, convertible later to a working interest. The well eventually reached almost total depth and we watched Pinnacle stock anxiously hoping for a substantial capital gain, should it be

successful. On a dismal day in November the stock suddenly began to fall and we feared the worst. Actually the results were less than hoped for but were somewhat successful. A 50' oil and gas column was encountered and with our 5% royalty, this became the basis for later developments. Taychik and I each formed our own private companies which were later merged to form Enteris??? Oil and Gas Ltd. J. C. Sproule, a prominent consulting firm,

#015 appraised our Cheddarville property at \$275,000. During this period there was some activity in offshore drilling in the Mediterranean. Home Oil were drilling a well off the island of Malta and there was considerable interest in obtaining exploration permits. As an independent consultant, in association with Campbell Todd, who had formerly worked for me at Fina, I went to Malta. He had since established important contacts and formed his own company. I spent 2 weeks there, during which I had several meetings with government representatives and obtained all the regulatory material. We never did acquire permits in that area, largely due to the backing out of one of the potential partners at the last minute. Following this venture Mr. Taychik and I decided to form a single company, merging our 5% into an undivided interest at Cheddarville, as the initial basis. We attempted to arrange start-up finds from friends and relatives or whoever was interested. We were able to raise, mostly through my contacts, only about half of our initial objective. Yet this was enough to launch Enteris Oil and Gas. One of our first ventures was an exploratory well west of Sylvan Lake, in central Alberta. Available seismic had indicated a deep seated anomaly, thought to be Devonian reef and our hope was for something like the Innisfail field, in the same general area. With ourselves the operator we took in 2 partners on a 1/3 basis each. Igor Klasika??? Resources Ltd. and Quasar Petroleum. Unfortunately, as is often the case, the well did not confirm the seismic picture and a dry hole resulted. However the electric logs indicated the presence of a possible hydrocarbon bearing sand at the Viking level. Subsequent drilling over the next couple of years confirmed an oil and Gas reservoir and with the latter construction of a Gas gathering plant, this helped our early production income at a most crucial time in the growth of the company. During July 1972 most of the smaller independent oil companies became completely disenchanted with government regulation and royalty structure, particularly in Saskatchewan. As a result it was possible to buy some of their interests. From Clark Oil of Houston we were able to purchase an interest in the Viewfield field, in southeastern Saskatchewan, located at township 7&8, range 8, west of the 2nd meridian. This project contained 11 producing wells plus a separate segment with several wells called Eagle Lake. These purchases were largely financed by the Royal Bank. Subsequently we sold the Eagle Lake property at a considerable profit, to the Sun Oil Co. In 1973, again strapped for cash, we reluctantly decided to go public with the company and arrangements were made with a brokerage firm, Annette, Mackay, to offer shares to the public. The original shareholders in the private company had paid considerably less for these new public issued shares. The formation of a public company and the sales of shares resulted in enough cash being raised for further activity. In order to obtain public interest in the issues it had been necessary to develop a specific drilling program, which had to appear attractive. Accordingly I had gone back to the people I knew at Western

Minerals and, after much negotiation, was able to obtain 3 separate farm outs from them, in different areas of Alberta. These, along with our gradually improving production position were a show piece for the public offering. All three were drilled in association with others and the eventual results were hardly satisfactory, resulting in one uneconomic Gas well. Through the remaining years, until 1979, when the company was sold, we followed much of the same pattern. Attempting to get into low risk drilling situations in association with partners,

#061 particularly in Alberta. As a result we obtained oil and Gas production in the following areas, in addition to Viewfield and Sylvan Lake. 1 well at Nevis, 3 wells at Stoddard, B.C., 3 gas wells at Manyberries, 2 wells at Drumheller, 4 wells at Viewing Lake, 2 gas wells at Cherhill in western Alberta. I also developed a Viking prospect at Nisku, shallower than the existing Gillwood pool. This was successfully drilled after the company was sold. In addition we attempted participation in several foreign ventures. Among these was a 7 well program in Indiana. This was a disaster, due entirely to poor operation supervision. We also acquired a 5% interest in 46,000 acres in South Dakota but no significant developments took place. I attended a geological convention in New Orleans and at its conclusion, decided to attempt to participate in southwest Texas. Accordingly, I visited Corpus Christi on the Gulf Coast and knocked on doors and looked at prospects, until I found one that seemed satisfactory. I also checked out the operator through the bank and learned that he was solvent and had a good record. We committed to participate in a couple of wells which were related to coastal faulting. Without seismic the subsurface is very difficult to interpret and our results of drilling were not favourable. I arranged for, and we participated in, in about 3 more such wells over a year or two and the results were always the same. This finished me with coastal faulting prospects. However, we did have success in a Gas venture near Serita, in southwest Texas. Other activity at this time included a month long attempt to coax production from an early drilled Cambrian test in southern Ontario. We belatedly gave up on this venture. Also we had a beautiful circus anticline in Columbia come to our attention through some of the people in Cleveland. We attempted to sell interest in drilling in this structure in Calgary but we were unsuccessful at the last minute because of fracturing at the surface. Another activity about this time involved a partial evaluation of the Suffield block north of Medicine Hat, in southeastern Alberta. The federal government had relinquished the mineral rights to Alberta and there was much speculation as to how these would be handled. I spent a great deal of time studying the existing geology adjacent to the block, and particularly the economics of Gas development along the northern boundary. I used up reams of paper calculating varied economic runouts. Pocket calculators were not widely used at that time. This project was initially handled by the former Deputy Minister for the Social Credit government, Herbert Somerville. Unfortunately he had little clout in the existing Conservative government so my efforts were in vain. I had hoped to be able to swing a drilling deal on the northern edge of the block, or substantial bank loans were readily available at this time. However, other arrangements were made with larger operators. My wife and I also made another trip to Europe, visiting Malta where Home Oil was drilling. I had in mind that Malta would make an excellent place to build drilling

rigs for the British Navy had recently vacated the area and there were excellent machine shop facilities and trained personnel. We also visited Greece, and obtained their offshore regulations and travelled to the north of Greece, where some success had been obtained in offshore drilling. Next we travelled to Denmark, where again, I visited with government officials and obtained reservation regulations and considerable mapping of Greenland, which has some overlapping basins that may be of interest. After these events I began to feel tired of the constraints of a public company and of partnership arrangements and became anxious to sell out. Possibly my age

#111 had something to do with this. By this time the company had a book value of over a million dollars and gross production sales of almost the same amount. We had a good ratio of debt to equity and there was outside interest in the company. After a year of negotiating with Gulch Resources, managed by Ray Hugo, and the difficult turning aside of other possible takeovers, we finally struck a deal with Gulch. The hassle with lawyers and accountants was unbelievable but we finally closed in May of 1979. A satisfactory price per outstanding share, which later resulted in capital gains problems for the early shareholders, over which considerable bleeding took place. Thus was concluded my association with Enteris and with a public company. Later, Enteris was merged into Gulch Resources. In August of 1979 I made another of my several trips to southwest Texas. By now I had acquaintances with a number of operators I could call on. This resulted in my being made aware of a part interest in a stratigraphic prospect, not related to coastal faulting, in ??? County, north of the city of Laredo. This prospect appeared very attractive to me and I came back to Calgary where I sold a part interest to Pangea??? Petroleum Ltd., keeping a 3% interest, for which I was to pay 1% for myself. This turned out to be quite successful. Our initial 3 wells were all oil producers but with a relatively high gas-oil ratio. At this point my interest appraised at nearly half a million dollars and I certainly should have sold out at that point. This field, called Stumberg??? produced from a relatively thin sand, at about 22,000' in depth. The gas-oil ratio was high and continued to climb. There was no possibility of unitizing the field because of the extremely diverse ownership. Eventually, about a dozen wells were drilled by our group and others. However, with the nature of the reservoir, at no possibility of initiating secondary recovery, now 5 years later, my share of income is very substantially reduced. I've been largely inactive since 1980 with no particular desire to become involved, especially after the National Energy Policy came into effect. As is widely known, activity dropped immediately, with about half of the available drilling rigs moving to the United States, where there was still some freedom of action and realistic prices to producers. All of which brings me to the conclusion that I lived and worked during a most fortunate period during the involvement of human activity in this old world. There hasn't been much in my life and career that I would change. I have participated at various levels and responsibilities in about 10 oil or gas fields in Alberta and 2 in Texas. I have enjoyed my work and thus have been particularly fortunate. The above makes me most thankful that I lived in the preceding period where personal initiative meant something. We have raised a fine family of 4 children, all of whom are now maturing and doing their own thing. This, along with my lifelong activity in the oil industry, is a very satisfactory result. I still

have several far out prospects, outside of Alberta, that I would like to see further evaluated, at least with some initial seismic work. Also, I have several Alberta prospects in my files, awaiting for my improved health and requiring updating with current well information. Had my health been better, I probably would have expanded this submission. I have attempted to avoid detail throughout, but hope it will be of some interest to those who follow.

NM: Thank you David.

DC: You're very welcome.