

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Arnie Nielsen

INTERVIEWER: Nadine Mackenzie

DATE: 1984

NM: This is Nadine Mackenzie speaking. I am interviewing Mr. Arne Nielsen. Mr. Nielsen, thank you for having accepted to participate in our project. When and where were you born?

AN: I was born on July 7th, 1925, a long time ago now, in the town of Standard, Alberta, a small farming town 50 miles east of Calgary.

NM: Were your parents farmers?

AN: Yes, they were farmers.

NM: Your name is Scandinavian.

AN: My mother and father were both immigrants from Denmark.

NM: When did they come to Canada?

AN: About 1905.

NM: Do you know why, why did they leave. . . ?

AN: My father was at that point, a young man of 17 and he did not feel that there were great opportunities in Denmark for him so he decided to emigrate.

NM: Where did you go to school then?

AN: I took all my public and high school at Standard. The high school was a 4 room high school at the time, they now have a very large high school there. And I went to the University of Alberta and graduated from the University of Alberta in 1949 with a Bachelor's degree in geology and in 1950 with a Master's degree in geology.

NM: Why did you choose geology?

AN: I chose geology I guess, I always was scientifically oriented so it was natural for me to gravitate into one of the sciences. My father's farm was, unfortunately for him, located on top of what turned out to be a terminal moraine???. It's a glacial deposit that has been dragged and dropped there by glaciers and there was a great variety of rocks on his farm which he kept digging up with his cultivator and his plow. My father was a naturalist and he was very interested in these rocks and very curious as to why one rock looked differently from another one and also how rocks were formed and so on. And so when I elected a career, or I elected not a career per se at the time, but elected a course of study at the university I picked geology.

#026 NM: Did you have any summer jobs while at university?

AN: Yes, I worked for 3 summers with the Geological Survey of Canada as a student geologist. Two of them were in the band lands along the Coppermine River in the Northwest Territories and the 3rd summer was with also the Geological Survey and it was in the foothills north of Jasper near what is now the town of Grande Cache. There was no

town there then of course, it was all virgin country. My 4th summer's work, in between university sessions, was with Imperial Oil and I was a well site geologist in what was then the developing Leduc oil field. As you know Leduc was discovered in 1947. My last summer's work was in 1949, so it was 2 years after and Leduc was still expanding and I was doing well site geology for Imperial there.

NM: And then you went for an MA in geology?

AN: I went for my Master's, it actually was an M.Sc. it was, at the University of Alberta. I completed that in 1950 and went to work immediately upon graduation.

NM: Which company did you work for?

AN: I went to work with Mobil Oil Canada. In those days it was called Socony Vacuum Exploration Company. I started work there on May 1st, 1950 right here in Calgary.

NM: Do you remember people you worked with at the time?

AN: Oh yes, I do. The staff at the time was quite small, I would guess a total of less than 50 I believe. It was primarily an exploration staff, mostly geologists, geophysicists. I believe there were maybe 3 or 4 engineers and there was a few, a very limited number of accounting people, about 3 or 4. That was Mobil at that time here in Canada because Mobil started also here in the late 40's with a very small exploration office and they did not find their first oil here, commercial oil, until 1952. So at the time I joined them in 1950 they had no oil and we were simply doing geological work, surface work and we were drilling a very limited number of wells. So it was strictly an exploration group. But some of the people you asked me about, the person that hired me and the person that I came to know very well over the years was a gentleman by the name of Dr. Joseph Spivac. He had a PhD, a geologist, he himself came out of the Geological Survey of Canada and he hired me and was my mentor I think for many, many years. I worked for him in a variety of capacities over the years. He was a very fine geologist as well as a very fine person. Unfortunately Dr. Spivac passed on here not very many years ago, just a few days after he took retirement from Mobil Oil. Others certainly that I recall and that I worked closely with and still know, one is Don Axford. Don was already on staff there at Mobil, was one of their more active geologists. I got to know Don very soon, very quickly and Don and I have worked together at Mobil in various capacities for many, many years, in various assignments. And of course I still know Don. We both have left Mobil and of course, I'm getting back there again. Then there were others, there were 2 other very well known geologists, both were doctors, a Dr. Willis Wright, who was a very eminent field geologist for Mobil and did an awful lot of surface geological work out through northeastern British Columbia, the Northwest Territories and I actually, I gave him his retirement plaque years later. And Dr. Wright passed on just about 2 or 3 years ago, at the age of 75, after having been retired from Mobil for some 10 years. And another eminent geologist, Dr. Goodman, who was a very scientific type of geologist and did a lot of what you might call, geological research for Mobil back in the early days, the late 40's and the early 50's. Dr. Goodman has been retired many years now and is still living here in Calgary, in retirement. So those are some of the people that I would feel were the ones that others would know about as well as myself. The head man for Mobil here at the time was a Dr. Corbett. Of the group I've mentioned he is the only one that was an American.

The others were all Canadians. Dr. Corbett also was a geologist, had been sent up here by Mobil to run the Calgary office. He left a couple of years later and there was a succession of people that followed him. Dr. Corbett lived to the ripe old age of I think, almost 90 and he died very recently really, down in New Jersey, he's been retired many, many years.

#088 NM: What is the story of Mobil, who started it?

AN: Well, I can't give you the exact details but you have to go back into the late 1800's. I don't exactly know how it was started but really, what got the company going so to speak was a merger between 2 companies, the Standard Oil Company of New York, and that's where the Socony came from, the first letter of that Standard Oil Company of New York makes up the word Socony and then they merged with a company that had a particular type of refining process called the Vacuum Oil Company, so that's how Socony Vacuum came to be. But Socony of course, or Standard Oil Company of New York, it was part of the original Standard Oil Company of Rockefeller and was one of the companies that was involved in the Sherman Antitrust Act, I think it was, I've forgotten the time, 1910-20, in there somewhere where the U.S. government broke up the big Standard Oil Company into pieces and one of the pieces was the Standard Oil Company of New York which is Socony. Of course, some of the others are well known, Standard Oil Company of California, or Chevron and the biggest of all, Exxon, which was Standard Oil Company of New Jersey and so on.

NM: Where was your office when you started working for Mobil Oil here in Calgary?

AN: Well, Mobil had 2 offices here in Calgary. The executives were located in the Lancaster Building, what is now the Lancaster Building. However the exploration fellows, who were doing well site geology and logging wells and so on, were located in a garage on 9th Avenue West. It was just a one story garage, it had no ventilation and it was all dark in there. You'd walk into your office in the morning and you had to have your lights on all day because there was no windows. During the summer months it was too hot and during the winter months it was too cold. We worked there, a bunch of us, and did our work from that office. It subsequently. . . well, we left there eventually and I think it's only recently really, that it was demolished and they were going to build a building there but the building fell on evil days together with the economy. So it's just a vacant lot now. We left there though, in 1951 or '52 and moved into what was then the first new office building in Calgary. It was called the Baron Building. Mobil took, I think we had 3 floors, Shell had 3 floors, Sun had 3 floors in this building. It was great for us to move into nice new offices, where I was above and sunshine and windows and everything else. Ultimately Mobil took over the entire building as the company expanded and the other companies moved out and moved into other buildings. Mobil was in the Baron Building, the name was changed to the Mobil Oil Building and Mobil was in that building until 1969, at which time, and I was still with them at the time, at that time I was President of the Canadian company and we moved into the Mobil Tower right across the corner here.

#129 NM: You started with Mobil as a geologist?

AN: Yes, I started out as a junior geologist.

NM: Can we talk about your career development, until you became President of Mobil.

AN: Yes, I was a junior geologist for several years and mostly I, what we called, logged wells, that is examined the drill cuttings from wells and then tried to correlate these wells with adjoining wells and tried to build up a geological picture which might lead to well locations and ultimate drilling. I had one unique experience in those early days and that was that Mobil Oil drilled a wildcat well just a mile and a half from my home in Standard. Mobil had taken or made a farm out deal with Canadian Pacific Railway Company, who holds a great swath of land from Calgary on eastward. That was a result of them laying the railway, the government gave them this large land grant. And Mobil made a farm in deal from CPR, they did not have their own oil company at that time like they now have, of course now they have Pan Canadian, their own company. One of the first wells they drilled was just a mile and a half from my home and Dr. Spivac was then Chief Geologist of the company, he was nice enough to allow me to do the well site geology. So I was able to stay at home again, which I hadn't done for many years and did the well site work on this well. It was the first rig, drilling rig in that area, for many, many miles and it was a great attraction on Sunday for the local people. Particularly I was quite well know out there as a young kid, so they would all come on Sunday afternoons and I'd show them around the drilling rig. So it was very nice indeed. Unfortunately the well was dry. Although subsequently production was found not too far from there but that particular well was dry but it was a unique experience for me. Anyway, in 1953 Mobil decentralized out of Calgary and for the first time established offices in other parts of western Canada. They established offices, one in Edmonton and one in Swift Current in Saskatchewan and one in Regina, so there was 3 of them. I was named District Geologist of the Edmonton office and we started out there, I remember even the date, we opened the office there on January 26th, 1953. There were 2 geologists, one draftsman and one secretary, four of us. However I was only in Edmonton there, during that time frame for 2 years but during that time we discovered the Pembina field, which subsequently turned out to be one of the largest oil fields in Canada, still is. So it provided a great shot in the arm for the company as a whole and also for that office and the office subsequently developed into a very large office.

#170 NM: What is the story of the Pembina field?

AN: Well, Mobil Oil or Socony took a farm in from a company that has long since ceased to exist, called the Seaboard Oil Company. It was subsequently purchased by Texaco. But it was a 4 township farm in, very large farm in, about 80 miles southwest of Edmonton and about 35 or 40 miles west of the Leduc field. Our objective out there was to come up with a wildcat location and see if we could find the same kind of reefs that were being discovered in closer around Edmonton, which were proving so prolific. Fields like Leduc, Redwater, Golden Spike. We did some geophysical work and did come up with a well location. A well was spudded there in late 1953. Actually, it wasn't, it was probably during the summer, the summer of 1953. Actually there were many, although in those days, everybody was looking for Devonian reefs and there were other objectives for this well, because there were a number of potential geological horizons. Even though at the time we

drilled the well there were no wells nearby, it again was a very rank wildcat well but one of the objectives was the Cardium sandstone. The Cardium is a well known outcrop, sandstone outcrop in the foothills west of Edmonton, in the general Hinton, Jasper area. The Cardium was postulated to extend eastward from the foothills at great depths and to pinch out somewhere southwest of Edmonton. It was our feeling in the Edmonton office there, the handful of us that were there, that there was a good chance that the Cardium sand could pinch out underneath this 4 township block that we farmed in from Seaboard. Now it was just a long shot because there was so little well control, you had to just guess at it really. But we considered it a possibility and we did plan to look out for the Cardium because you penetrate it on your way down to the Devonian. The Cardium is a cretaceous sand which, cretaceous overlies the Devonian. As it turned out we did encounter the Cardium in the well and we did run a drill stem test of the Cardium and got some heavily oil cut mud but nothing else. So we went on down to greater depths and ultimately ended up looking for the Devonian reef and not finding any reef. Now at that point in time we ran an electric log off the well and we discovered that we had only tested the very base of the Cardium and had in fact, missed the top of the sand, which looked a lot better on the electro-logs than the section we had tested. We persuaded the management here in Calgary to allow us to run casing, it was going to be. . .we had some difficulty because it was a thin sand and the casing was going to cost \$30,000 and there was some reluctance on the part of management to spend \$30,000 to test what looked like a very thin sand. But I'd had a jar full of oil cut mud standing on my desk for several months at this point in time and that was what we had retrieved on the first drill stem test. The oil had separated out from the mud and there was very nice light gravity oil in that sample. So we were convinced that there was more here than there appeared to be and we were successful, got some excellent help from Dr. Spivac here in Calgary with the management of the day, and we finally got the well tested and we had a flowing oil well. That was of course, a great event for us. People still didn't realize what we had, industry didn't, they thought it was just another small 1 or 2 off Cretaceous field.

#231 NM: So there was no competition with other oil companies?

AN: Pardon.

NM: Was there any other competition?

AN: Not really because it was on this 4 township block. There wasn't at the time, there was intense competition later on. After we drilled that well and completed it, we stepped out a long ways, about 11 miles to the northeast, drilled at another seismic anomaly that we determined with seismic. The Cardium sand was still there but it was too tight to produce, but it was oil stained. So we were persuaded that we had found the stratigraphic trap that we had postulated before we even began drilling. We moved back half way between these 2 wildly scattered wells and drilled a third well and got another excellent oil well. So there was not much question but that we had. . .now these 2 wells were some 5 miles apart, the original discovery and the second oil well. We were then satisfied that we had a large oil field. It was just a question of its quality. Then we really began an appraisal drilling program and lots of action started out in this area, which up to that point had been

extremely slow. The competitive situation developed to the west of this 4 township block where there were some large tracts of land which was still Crown acreage. The Crown put it up for sale and there was a competitive bidding arrangement such as there is today. We bid very heavily on it, or what we considered to be very heavily at the time, something like \$7 million on the better of these tracts and we were outbid by both Texaco and Imperial Oil who bought the acreage. As it turned out Texaco's acquisition was excellent. They bought pretty well all production out there. It turned out most of Imperial's was dry, they were just beyond the pinch out edge. But they have since found something else on that acreage, other than the Cardium. But there was a lot of competition out there for years. Then of course, we had to give half of it back to the government. Under the system at that time, you could keep half and give half back and you checkerboarded your half so there were corridors around the portions you kept and the Crown resold those in competitive sales. So it became an extremely active area, many, many wells drilled and as it turned out, a very, very large oil field that extended, not only the 4 townships that we had farmed in originally but over a lot of other acreage as well. And I might say, there still is a lot of drilling, now with Canadian Superior in 1984 we are actively drilling in the Pembina field today, all these years later.

#276 NM: Who was working with you at the time of the discovery of the Pembina field?

AN: There were 2 geologists who were working with me. My number 1 assistant was a geologist by the name of Tony Mason, a very innovative and bright chap whom I had known at the University of Alberta. Tony subsequently left Mobil and has been for many years now, with Bow Valley Industries and he's still there. Another one was a chap called Fred Trollop who was the well site geologist on the discovery well. Fred has been with Mobil Oil all these years and is still working right over on the other tower. They were the 2 principal people. One engineer, a chap called Jim Wark??? and I would suggest if you haven't talked to Mr. Wark that you should. Jim Wark was the engineer sent up by Mobil to help complete the well. He had worked in the Middle East and had a lot of experience. Jim was older and we were just young guys. I worked very closely with Jim for some time in completing that discovery well and in going on to locate some of the others. I guess I'm supposed to be telling what happened to me.

NM: That's right.

AN: I was transferred from Edmonton to Regina and it was a lateral transfer, I became District Geologist for Mobil for eastern Saskatchewan. It was kind of a bitter move for me because of the fact that I had . . . the Pembina field was just growing by leaps and bounds and there was a lot of activity in Edmonton and I had been there at the start and I disliked going to Saskatchewan where things were going very slowly, particularly for Mobil. I had also just bought a brand new house in Edmonton, it was the first house I'd owned and I had it for 3 weeks and then I was moved to Regina. Regina was not considered to be exactly the most favourable spot to go to, it was generally regarded like going to Siberia. I'm sure the people over there wouldn't like to hear that. Mobil had made a very large farm in in Saskatchewan from a company called Sohio, Sohio is still around, involving some 11 million acres and they were trying to find oil on this acreage and were not being

very successful so I was swapped out with the District Geologist who moved to Edmonton and I went over there. I was in Regina as District Geologist for about 2 years. In fact one of my children was born there so he's always saddled with having to say he was born in Regina. We were successful in finding a little bit of oil over there before I left which was of personal satisfaction to me.

NM: This is the end of the tape.

Tape 1 Side 2

AN: The oil we found in Saskatchewan was nothing like Pembina, unfortunately and on the acreage that Mobil had there, 11 million acres, even to date, many years later, there has not been very much oil found on it. There certainly has been oil found in Saskatchewan but not on this particular acreage. In 1955 or '56 I was transferred back to Calgary as a staff geologist. In fact, Don Axford and I were both staff geologists here, reporting to Dr. Spivac whom I referred earlier. I think this was the only time in my career, almost the only time in my career where I have not been in a management line position. It was a staff job and we advised Dr. Spivac on recommendations that came in from the District Geologists in the field. Then in 1957 I was transferred to New York in a move which was a very interesting one for me because I had not really, except for the odd convention or so, I had not been outside of Canada at this point in time and being transferred to New York is pretty exciting for anybody. I moved to New York with my family, which at that time consisted of. . . let's see, I had 6 children at that time, 5 boys and a girl. We located in New Canaan, Connecticut and I commuted daily into Mobil's head office in New York. My responsibility there was basically, to keep exploration and producing management of Mobil Oil Corporation advised as to what was going in Canada. It was more of an advisory position again, and an information type job but I enjoyed it because I got to know New York. I've known New York ever since and I like the city. Then there were some management changes here in Calgary. What really happened was, the President here at the time of what was then, the company name was probably Socony Vacuum Oil Company, it was called then I believe. But in any event . . . or Socony Mobil Oil Company, it had changed its name to, the President was moved to New York, the exploration Vice-President and Dr. Spivac, who had been Chief Geologist became exploration Vice-President. So the company needed a Chief Geologist and I was brought back from New York in the position of Chief Geologist. It was a position that I certainly had aspired to, among the geologists it was just considered the premium position and for the first time I really had a large number of people reporting to me, all the geologists and of course, the non-professionals that go together with that group. So for the next 2 years I was Chief Geologist for the company, reporting to Dr. Spivac. Then came another very major change and it resulted from a major worldwide shake-up within the Socony Mobil organization but particularly a huge shake-up in the United States, where 2 large companies, Magnolia Petroleum Company headquartered in Dallas and General Petroleums, headquartered in Los Angeles, both disappeared, were incorporated into the parent company and the parent set up a large new organization in the United States. As

part of this reshuffle they established an office in Denver, Colorado. This was an office, an exploration and producing office that was to look after all of the mid continent, all of the Rocky Mountain states and really a very large part of the United States. At the same time they also established offices in Los Angeles and in Houston, so there were the 3 from which all of Mobil's domestic U.S. side operations were to be run. I was asked to be Exploration Manager in Denver in this new arrangement. So in January of 1960 my family and I moved to Denver. Actually we moved down in December, the office was not open til January and I remember spending Christmas and New Year in Denver and we knew absolutely nobody. Of course, there were quite a few of ourselves. My 7th child and my 6th son was born in Denver the following summer. So we set up an office there and for the next 2 years I was Exploration Manager in Denver and had responsibility for all these new areas with which I was not really familiar. But it was a great experience for me because I participated in establishing an organization from scratch so to speak. There was nothing there before and we. . .

#058 NM: So a very good challenge.

AN: That's right. We were able to make all our own arrangements, pick our own people from Mobil offices elsewhere. We closed down a lot of small Mobil offices in places like Casper, Wyoming, Billings, Montana and concentrated in Denver. We did set up district offices, reporting to Denver and the district offices were located in Casper, in Oklahoma City, in Wichita, Kansas and one in Pittsburgh, Pennsylvania to look after the Appalachian area. We began an active exploration program throughout these areas and had a certain amount of success in finding some, a lot of gas and some oil. Then in 1962 I had another major move in my career, when the Exploration Manager from Mobil in Houston, who was Exploration Manager for the Texas and Louisiana, Gulf coast and offshore, Mobil's largest exploration effort anywhere, he retired and I was moved into his position. I was there almost 4 years as Exploration Manager for those areas. Here again, it was a great experience for me simply because Gulf Coast geology is quite different from the geology in the Rocky Mountain area and the mid continent. And I also gained offshore experience. We were drilling offshore, we were participating in some of these large land sales that were just in those days, starting to get under way. And of course, my family and I liked it down there and we got to see a lot of the southern states and we took advantage of every opportunity to, what you might call explore through the south and along the Gulf of Mexico and over into Florida and all those areas. That went on then, until 1967 and in 1967 there was another reorganization in Mobil. Not as big as the one in '59 but a lot of changes made and at that point in time the President, no the President of Mobil Oil Canada at that time was a gentleman by the name of Mr. Blexrude???, who was an American and whom I had known in previous years south of the border. The Exploration Vice-President here, who also was an American, called Mr. Fitzgeorge???, was transferred to New York and so there was a vacancy here. I was asked by the company to come back to Calgary and head up the exploration effort in Canada, as Exploration Vice-President. So we moved back to Canada, back to Calgary and I've been here ever since. I was in that job for one year and then the President of Mobil Canada was

transferred to Libya in the position of President of Mobil Oil Libya and at that time I was promoted to President of Mobil Oil Canada. That was January 1st, 1967 when I assumed that responsibility. It was of course, great satisfaction. I had started here years before as a junior geologist and now I was President of the company. At that time we were then a company of some 900 people and a lot of production. The Rainbow field had just been discovered and we had half of that very, very active program here in Canada. Well, I had the job for 10 years and I was the first and only Canadian to be President of Mobil Oil Canada. I was the first one at that point, I was I think the 7th or 8th President of Mobil Canada, all my predecessors had been Americans.

#101 NM: So that's very historical.

AN: Well, it was in that sense. Unfortunately my 2 successors, after I left the company have both been Americans, so I've been the only Canadian to have the job. And a lot of the senior people I had grown up with within the company and that was pleasant too. Don Axford came back from the States, he had been transferred to the States like I had and he came back and became Exploration Vice-President. And Ed Barrow who just retired very recently here, he was Producing Vice-President. So really, Don Axford and Ed Barrow who were both good friends of mine from a long time ago and myself, really ran the company here for almost 10 years. Anyway, major changes took place during that time of course, in what we were doing. When I had left here we were looking only in western Canada and after I returned we took large acreage spreads off the east coast and some in the north and we became involved in the east coast activity. I'm sure you heard about the east coast activity at some length from both Mr. Axford and Mr. Barrow. We drilled the first well off the east coast on Sable Island. It was dry but we had shows and then we drilled a 2nd well at the very tip of Sable Island and had a very good discovery which turned out to be non-commercial, by subsequent drilling. But of course, we know the story there, ultimately the Venture field was found and what is probably commercial gas although that is not fully certain yet. So we really became. . . it was a great 10 years for me, we had our ups and downs, we had good years and bad years during that 10 year period. But basically we were one of the most successful affiliates that Mobil had. I think the only one who really was as close to being as good as Mobil Canada was probably their German and Austrian affiliates. We were making a lot of money for the company and a very successful situation for Mobil here in Canada with Mobil Oil Canada. I was getting a little bit feeling that it was time for a change. Mobil did want me to move back to New York and this was not really the kind of change I was looking for. I was at that point in time a widower and my children had settled here in Alberta. Most of them had gone through university and had settled in Calgary and Edmonton. I have a boy that's a paraplegic boy and it was most difficult to contemplate moving to New York with him. So the sum total of it all was I was not very enthusiastic about moving to New York, even though they offered me an excellent job, I was to manage Mobil's worldwide exploration. But Mobil doesn't really like too well if you turn down a move of this nature and I had a feeling that maybe it was time for a change. So the opportunity came for a change and it was that my predecessor here at Canadian Superior, a very fine, able gentleman by the

name of Mr. Feldmeyer had reached the age of 65 and had indicated he wanted to retire. Anyway that was retirement age. He agreed to stay on for an extra year because Superior Oil, the parent company were trying to find a replacement for him. They did not feel they had a replacement within the company and somehow they found out that I might be interested. It took almost a whole year of talking back and forth and of course, it was quite interesting because I was over in the other tower and Mr. Feldmeyer was in this tower. So we'd meet every once in awhile and have discussions and I would meet with Mr. Keck???, who is the major shareholder, was the major shareholder of Superior Oil until just a matter of a few weeks ago. And ultimately we made a deal, we made it over at Hy's. Mr. Keck loved steaks and he always went to Hy's to eat and I'd meet with him there for dinner when he came to town and we ultimately made an arrangement and then on November 29th, 1977, just about 10 years from the day I became President of Mobil Oil Canada, I resigned. I had one month overlap with Mr. Feldmeyer but on January 1st of 1978 I became President and Chief Executive Officer of Canadian Superior. It was most difficult for me to make this move, I left all my good friends behind. Mr. Axford had already left, he had left to join Petro Canada but all the rest of them that I worked with for so many years and it came as a real shock to them. They thought I had Mobil tattooed here you know, they never contemplated that I would move. My family couldn't believe it because they had been brought up in the Mobil world so to speak. But I felt that it was a move for my own good and it turned out that way and I have been here now for 6 years and it's been a great experience here. Still the same kind of a job as at Mobil, that is, exploration and producing. But a lot more autonomy than I had at Mobil, almost total autonomy and a very, very active program, a large cash flow that was automatically totally reinvested . . .

#172 NM: So it was a very good move.

AN: Yes. A very good move for me personally. A lot of new experiences that even after 27 years with Mobil, I had learned a lot, gained a lot of experience there but I learned new things here.

NM: So there were new challenges.

AN: Yes. Yes, I left Mobil in what I felt was, under the best of circumstances. I got all the people together, first of all the senior managers that I worked with and then all the supervisors and broke the news to them. Mr. Massod???, who was more or less my boss in New York came out and for the last day I was here, to talk with me about my succession and about various people and just kind of a turnover kind of a thing. However, by the end of January of the first of February, right in that time area there, a gentleman showed up at the door here with a document and it was a lawsuit and I was being sued by Mobil. The basis for the suit was that basically, I had left Mobil in a position of President and General Manager, I had carried with me in my head, a vast amount of knowledge about Mobil's activities, Mobil's prospects, Mobil's ideas, Mobil's research work. And that I would most certainly put this to work here at Canadian Superior. Now they did not . . . certainly there was no question of accusing me of bringing maps or anything like that, I mean they knew I wouldn't do that and anyway I was very careful when I left Mobil. I

had my secretary over there pack everything for me and so. . .

NM: This happened all the time, people moved from company to company.

AN: Oh yes. But at the same time, I should put it in its proper perspective, Superior Oil, Mr. Keck was trying to rebuild Superior Oil on a worldwide basis and he had hired a number of Mobil executives in the United States and they were getting a little bit upset about this and I was the straw that broke the camel's back. Because they also launched a suit down in Houston against Superior, a similar suit but I was the only one being sued here.

NM: Was this the first time that was happening here in Canada?

AN: It was the first time, yes, in the oil industry. And I think it was the first time. . . there were other less obvious situations but it was the first time here, yes. And of course, it attracted a tremendous amount of interest, in the press and in the industry because if Mobil made this stick it had tremendous implications for people. And of course, we're a very fluid industry you know, executives are moving back and forth, moving at all levels and always have been. If Mobil could really make this stick it would have been a real problem for a lot of people and for the industry as a whole. Mind you they said, in the suit they said, what they were trying to do was say that I should not be allowed to work for a year. After which some of the information I had would be out of date and so they were trying to put me out of business for a year basically. And also they were suing for damages and all this kind of stuff. I of course, I engaged legal counsel, which was the Bennett Jones Company. And we had excellent legal counsel and the suit really. . .well, it started and it was January we had examinations for discovery and all the legal things you go through. It went to trial in the following January, before the Alberta Supreme Court. Now in the meanwhile we did try to work out a settlement with Mobil and were very, very close to a settlement. But it just was impossible to reach a settlement so it had to go to court. I was in the courthouse for a week, Alberta Supreme Court and they trotted out all their big guns to try and find me guilty as charged. But they never attacked my integrity, I should emphasize that, they never attacked my personal integrity at any time. They couldn't very well, I had had the job here as top man for 10 years and it was pretty hard to complain about my integrity at that point. But they simply used the approach that there was no way I could help but use their information, it was inadvertent on my part but I would use it. Well, I had protected myself in many ways. For example, when I came here I got outside legal counsel to give me guidance. This was even before the suit was launched, on what should happen when land sales came up. I deliberately kept Canadian Superior away from certain areas on land sales because I knew Mobil had prospects there. This was all documented so I had all this for protection. And then I had some excellent support from within the industry. Two people, I don't know if you've ever talked to any of these two but Mr. Dingle from Imperial Oil and Mr. Richards. Both these gentlemen are retired, Mr. Richards who had retired from Hudson's Bay Oil and Gas, he's now living down in Arizona and they went on the stand on my behalf. I could have had any number of others. The net result of it all was when the judgement came down in June it was just 100% victory for myself and for the company. Mobil gained nothing from it and it hurt their image pretty badly in Canada at the time.

#257 NM: It must have hurt you too.

AN: Well, it bothered me a lot because of course, I was from Standard and well known here personally and it all got in the papers extensively. Of course, the attitude of a lot of people was well, where there's smoke there's fire, old Arnie must have done something wrong. However it's worked out well. Really from the time. . .there was ill feeling for awhile. Now my relations with the Mobil Canada people here was always excellent and they were shocked over there that Mobil in New York would do it. People like Mr. Barrow and so on, they were just shocked. We kept on communicating back and forth on a friendly basis. I mean we see each other all the time, you can't help it here in Calgary and there was never any problem with those people. Even a lot of the people in New York were shocked because I was so well known in the company after all these years and they knew that my doing something that was wrong was very unlikely. However it's all past history now. Of course, today, Mobil is again, our shareholder. Now totally yet but we're back talking to Mobil again and there's no recriminations on their part and I've gotten over it, so we're back in business.

NM: This is the end of the first interview with Arnie Nielsen.

Tape 2 Side 1

NM: This is Nadine Mackenzie speaking. This is the second interview with Arnie Nielsen. Mr. Nielsen can we start talking about your work for Canadian Superior?

AN: Yes we can. I guess in many ways it's similar to what I did for Mobil Oil Canada. That is, over there I was called President and General Manager, here I'm Chairman and Chief Executive Officer. Just a different nomenclature that the company's use for the chief executive's position. But like Mobil Oil Canada, Canadian Superior is an exploration and producing company in Canada, with no downstream facilities, no refineries, no service stations. So we are basically an exploration and producing company. So my responsibility really is to administer this very active and aggressive exploration and producing company and hopefully ensure that we find oil and gas reserves to replace those that we are producing and to ensure the company's success financially.

NM: What is the place of Canadian Superior among the other oil companies here in Calgary.

AN: I guess if you considered all factors we would be about in the position of #10-#12 in size. It depends upon whether you talk about assets, whether you talk about cash flow, reserves, oil production, gas production, land position. We're in a different position in all of these, like most companies but we would fall in the 10-12 range on most of these.

NM: What's going to happen to the company now?

AN: We will be a wholly owned affiliate of Mobil Oil Corporation, New York, as of 2 weeks ago now. The future of the company is somewhat indeterminate. Mobil Oil does not, at this point in time, have approval from a government agency, it used to be FIRA, what it's going to be after today I don't know but there will be a comparable government agency of some type from which Mobil will have to get approval to acquire Canadian Superior. Or to hold us. They will own us but it's a question of whether they can keep us or whether they're going to have to at least make some commitments to the federal government

relative to investment levels or availability of shares to Canadians and this type of thing. These matters have not been resolved.

NM: That can take time.

AN: It will take time. And in the meanwhile we'll be operating as a wholly owned affiliate of Mobil Oil Corporation. You'll note, Mobil Oil Corporation, not Mobil Oil Canada and will continue as we have been doing in the past.

NM: And what are you going to do, the same thing or . . . ?

AN: What am I going to do? I plan to continue doing what I am doing and what I have been doing for the past 5 years, for the, "foreseeable future". I believe though, that the air will clear considerably during the next 12 months and at that point, somewhere in that time frame, it might become clear whether I will remain within the Mobil organization where I was for so many years, from the indefinite future or whether I might seek other employment.

NM: So you are keeping your options open.

AN: Absolutely.

#042 NM: Can you compare the training of oil people in your time to what it is nowadays?

AN: Yes, I can. I'll first talk a little bit about the training, in quote, my time, which I would have to go back to the 50's. We came out of university I think, like in my case, being a geologist, my formal training was in geology, with a lot of geology in our heads. And a lot of geological knowledge but very little knowledge as to the practical application of what we had learned. So I think that early in the stages of our time with oil companies, and it was pretty well the same with most of the companies at that time, we were exposed to practical problems and it became just absolutely a must that a new geologist go out on well site, do well site work. I don't know of any geologist that came to work for any of the companies that were of any size active in the 50's, that did not first send their geologists out to do well site work. You'd go out on a drilling rig whether that drilling rig were outside of the city here or whether it be, it could be northern Alberta, it could be the Northwest Territories, it could be northeastern British Columbia, anywhere and the geologist would be responsible for the geological analysis of the samples and so on and had to handle the testing and all this kind of thing that went with this kind of work. He of course, did not locate the well, the well was located by more experienced staff in the office but he was responsible for the geological work on the location. You could go from well to well and might spend a lot of time doing this. You could be 2 years, in most companies 2 years was the minimum, in some companies it could be as many as 5. The problems connected with this kind of thing of course, you generally had to leave home and were separated from your family and most people, you know, this was early in your family life as well. In my case I'd only been married 3 years and already had 4 children. These are not the days when you really care to leave home but it was part of the business. In some cases you could take your wife with you but if you had children it became difficult. Particularly if you were out in the bush, it was not too practical. But it was part of it. Now after a period of time doing well site work you'd usually move into the office and start doing geological mapping, contour maps, isopac maps, regional maps, also

logging all kinds of wells other companies drilled and helping put together the geological picture which goes into the total exploratory picture on which companies eventually base their land acquisitions and their well drilling program. So that was kind of the training. It started out with field work. Another type of field work of course, was mapping surface geology. There was a lot of that. In Mobil we had surface field parties out every summer, frequently we had 4 or 5 field parties out with each party consisting maybe, of anywhere from 4-10 geologists with non-technical help. These would be in northeastern British Columbia, these would be. . .we mapped all of the Arctic Islands for example, with surface geological parties. Now I had been on surface geology for 3 summers during my university career with the Geological Survey of Canada and so when I came with Mobil I'd had a lot of surface experience and did not need to go out on surface parties that Mobil sent out and instead I went out on the well site work. Well, let's compare that a little bit to what happens today. Surface parties are almost non-existent. Basically most of the surface geology is known, it has been mapped very thoroughly. First of all by the Geological Survey of Canada and you can get their reports in great detail.

#089 NM: So that has been done.

AN: It has been done. And also you can get company, most of the larger companies have done their own surface work. There may be people go out and look at certain areas in detail but basically, companies no longer send surface parties out. I don't know of anyone that does, Canadian Superior doesn't, Mobil doesn't. So that kind of training you don't get anymore. And quite a few of our geologists now do not get surface geological experience. You still can get it with the Geological Survey of Canada, if you take it during your university career. But even there it's becoming less than it used to. Also well site work. It surprises me really, to some degree, that we don't send people out on well site work like we used to. Now there are several reasons for that. Well, there's basically one reason, that is, they won't go. Nowadays, there's a lot more. . . people have a lot more to say even when they start work, as to what they want to do and what they don't want to do. Some of them will say, no, I don't want to leave home, I'm not going to leave my wife, we've just been married a year or 6 months and I want to stay home. So a lot of them just don't want to go. So we find that even our young geologists, a lot of them do not get subsurface well site training. But of course, the work still has to be done, that type of work must still be done. So how do we do it, there are consulting firms that do it. And back in the 50's there were not consulting firms that did this. Now there are whole large consulting firms and individual geologists that hire themselves out at so many hundreds of dollars a day to do this work. So that it is now done by basically, consulting firms, rather than by our own geologists. Our geologists may go out during certain critical horizons and so on, just to double check but basically that work is now done by consultants.

NM: Do you think these young geologists are missing something in their training?

AN: I think that they are, in a sense. I think though, that they probably can be as good oil finders without that particular training. I don't really think you need that training in the field, either the surface training or the subsurface or the well site, to be a good oil finder. It's mostly a matter of ideas, oil finding and a good imaginative geologist I think, can do

that in the office, without the field training. On the other hand I really think he misses something and that is most geologists took geology as a profession because they're interested in rocks.

NM: Yes, and outdoor life.

AN: The outdoor life and the rocks. They miss a lot because they come straight into the office and start working on mapping. They miss out on that feel of the rocks in their own environment and the same way, in the well drilling effort, with an oil company, drilling wells is so important to us and yet they don't have that excitement or that feeling of excitement that they might have if they were sitting on a discovery. Or the disappointment of a dry hole. So in that respect I think there is something they miss, although they may find as much oil, even if they don't have it. So I think that's basically the difference in the training. The training is much more sophisticated now, I should also say that.

#134 NM: The technology has improved.

AN: Tremendously. I'll use a couple of examples of that. Logging technology. We basically used 3 logs only, that Schlumberger or competing companies ran. Something we called a resistivity curve, a soft potential curve and a micro-log, those 3 logs and we used those for our interpretation. Nowadays there's a whole raft of logs, radioactive logs, which were just beginning back in the late 50's, much more sophisticated logging technology than we ever dreamt about. So there's one area, much improved technology. The use of the computer. Computers were not used in the business and now you have computers to turn out great masses of data. Everything that can be computerized, they can draw maps for you, all kinds of things like that. And the relationship to geophysics. The geologist and the geophysicist did not work together nearly as closely in the 50's and 60's as they do now. Nowadays, it's really an explorationist and the geologist really should have some knowledge of geophysics and vice versa to be effective. So there's tremendous improvement in technology in all areas of the oil finding business. And also of course, in the fact that you have to be a broader base, you have to know more in the way of this advanced science than we had to do.

NM: You have been a witness to the ups and downs of the oil business, can you comment on that?

AN: Yes, I can. I can comment on the ups and downs, I've seen most of them and experienced most of them. There are two types of ups and downs. There are financial ups and downs and then there are oil finding ups and downs. I'll talk about the oil finding ups and downs first. The two are not necessarily related but oil finding, it seems it goes somewhat like a sign curve. We don't consistently find oil on a regular basis, that is you don't find exactly the same number of barrels every year. There are some tremendous swings. Part of it relates as you move into new areas because generally you find the bigger fields first in a new area. But if you look a little bit at what happened in western Canada and in Canada. Leduc was discovered in 1947 and that initiated a period of something like 6-8 years of very successful oil finding. It's surprising that it happened like that in a way because before Leduc and after Turner Valley there essentially was nothing found for many, many

years. Following Leduc then, in quick order, a number of reef fields were discovered. And very good ones, Redwater, the very prolific Redwater field, Golden Spike, Stony Plain, the first oil that Mobil had that I was involved with was the Dewhamel field up near Camrose, it was a reef field also. The Stettler field discovered by Gulf. So there was a series of reef discoveries and they all came, most of those, what we call upper Devonian, D-3 reef discoveries that I go back, I referred last time to Mr. Doug Layer who established that terminology. Those discoveries went on into the early 50's and it was a real boom period for reefs. Then the reef discoveries began to die off a little bit and suddenly we were into stratigraphic traps and the Pembina field was discovered in 1953, Canada's largest oil field to that time, and plus or minus Hibernia, still is. Then a number of stratigraphic fields were discovered, basically Cretaceous stratigraphic trap fields. Then in the mid, going on toward the end of the 50's there was a time period where we hit a low point in discovering anything. We continued to find small fields but not really fields of magnitude. Then we began another era of reef discoveries again, but it was a different reef. It was a Devonian reef but it was a middle Devonian reef and we found then the Swan Hills fields, around Whitecourt. This was an earlier geological formation but also very, very prolific and added a lot to the reserves. Then in the early 60's there was another lapse where we weren't finding too much and then suddenly Rainbow was hit and it also was a middle Devonian reef, a Keg River reef discovery in the mid 60's, an excellent prolific field, a billion and a half barrels, I think, in place, discovered by the Banff Oil Company on a farm out from Mobil. That set off a series of middle Devonian reef discoveries. Then into the 70's, again we were in a period of not finding much oil. In fact, the early 70's we didn't really find any significant oil. Now we were beginning to find gas and through all this time frame gas discoveries were quite prevalent and prolific. In the mid 70's, Chevron discovered the west Pembina Niscue reef fields, right underneath where the Pembina Cardium was. That set off a period of about 3 years there where we found, I'm speaking of industry in general, of these Niscue reef fields in that same general area, about half a billion barrels in place there. Now today, in the last several years large fields have not been discovered. We're into finding small oil fields. Because there's been such a prevalence of gas, there's a lot of shut in gas. Companies have tended to shy away from gas prone areas, although sometimes you find gas when you're not expecting it and trying to concentrate on new oil which also has the benefit of getting world oil price and no market problems such as with gas. Now this last winter we had probably one of the best oil finding periods in several years. There were about 4 or 5 medium sized oil fields discovered in northern Alberta. The size of them won't really be known till maybe this winter's drilling because it's a seasonal effort up there and you can only really drill in the winter. Now these, they're not the size of the Rainbow's or the west Pembina fields or the Leduc's and so on but they nevertheless are good little discoveries. And I think will bring in another era of some improvement in our new oil situation in western Canada. Maybe not enough to make up for the decline in our old fields, like Leduc I think, has pretty well produced its last barrel of oil. And it's now water, it's now being used for some other purposes and it's pretty well watered out. So that's a big decline there and these other reef fields discovered back then are declining. So

you can see I've kind of painted a picture of this kind of thing. In the meanwhile of course, look at the activity off the east coast, the Hibernia field discovered a few years back. A very prolific field, probably won't be on production till towards the end of the decade. The problem there has been, to a large part, political and also the fact that it has got logistical problems connected with it. But we're into that kind of a time frame now where we're going to find large reserves in the frontiers and they will be much slower in bringing them on production. But it is the ups and downs in oil finding, it is a cyclical situation. Technology makes a big difference too, as these years go on our technology improves and we can see things that we couldn't see before. Now then let's talk about the other kind of up and down, that's financial ups and downs and there it's primarily governments that are involved there. We were doing beautifully, financially as an industry on into the early 70's. Everything was looking good, our cash flows were improving and . . .

#255 NM: Everything was booming here.

AN: It really was, yes. Then in the early 70's with the price of oil going up very suddenly in the Middle East, with the Arabs and the OPEC nations suddenly increasing the price over a period of 2-3 years very drastically, that had a major political effect here in Canada. What happened was, basically, the producing provinces here in the west who were only charging 16 2/3% royalty on average, they saw what was going on in the Middle East and they decided that they were missing out on a great opportunity for revenue and the royalties were increased very drastically. Up to very close to 50% and on incremental oil found, up to 60%. The result of this was that the federal government, who had been counting on companies becoming taxable and they getting revenues through the income tax system suddenly found that the tax base was being eroded by these high royalty rates and therefore they got into a hassle with the producing provinces. The federal government, up to that point, royalties were deductible on your income tax. But they made royalties non-deductible.

NM: So that changed a lot.

AN: It really changed everything, it changed the whole financial picture and was very damaging to the oil companies. For example, I was at Mobil at the time and the net effect in Saskatchewan was that for every barrel of oil we produced it cost the company 50 cents. And here in Alberta you made about 80 cents a barrel or something like that, after the high royalty rates and royalties not being deductible and all the other taxes. And a lot of companies cut back on their activities in the early 70's. The government's realized that it was poor for the economies for the country to continue this kind of a trend and about '74 or '75, '75 is the best year I think to speak to, they made some significant changes, both provincially and federally. That again, improved the financial picture for the oil companies and precipitated what financially was, without a doubt, the best up we'd had. That is '75 to '81 we were really thriving as individual companies and as an industry and money was being reinvested and companies were going to the banks and borrowing a lot of money, looking to the future, a continuation of this situation into the future. And then of course, we hit the tremendous downturn of 1980-'81 where the National Energy

Program came into being. Heavy new taxes and that unfortunately coincided with an overall economic downturn and high interest rates and we went from the biggest, "up", the industry had had financially in its entire history to the biggest "down" we've ever had. And that's the one we're just hopefully coming out of now.

#308 NM: So what do you think of the National Energy Program, do you think it was something necessary to bring in?

AN: It was certainly not necessary. And it was very harmful to the oil companies. I don't know, have we talked before about the National Energy Program, you and I.

NM: No, we haven't.

AN: The philosophy behind it sounded good.

NM: On paper.

AN: Yes, like fairness and all this kind of stuff and greater involvement of Canadians and self-sufficiency, they all sounded good. But the steps that were taken to achieve these very admirable objectives were most damaging. I'll just mention 3 or 4 of them that were most harmful in my view. First and foremost was the PGRT or the Front End Tax, which started out at 13%, was later reduced to 12% net. It's really like a royalty right off the top. In the case of our own company it reduced our net income after tax, which was in 1980 it was \$130 million, in 1981 it was \$60 million. That was a direct result of that PGRT. For companies that were not as financially sound as us and who had high debt burdens which we didn't have this was catastrophic. So the PGRT was first and foremost extremely damaging. The fact that oil prices were not allowed to reach world levels. Ultimately they did allow so called new oil, oil discovered after January 1, 1983 to reach world levels in price but the fact that most of our oil was kept at an artificial price by the government further prevented us from getting the kind of revenues we otherwise would have been getting. Then on the Canadianization thing, the 25% back in that the federal government gave itself. Although that was not immediately harmful to us in terms of costing us money it ruined the investment climate in this country, because it was retroactive. We regard it as confiscation of 25% of our lands that we had taken under certain conditions and the conditions were changed while we had the acreage and it certainly turned off the investment community south of the border and was damaging here to . . .it negatively affected the amount of money companies were willing to spend in this country.

NM: This is the end of the tape.

Tape 2 Side 2

AN: [in mid sentence]. . .which were very harmful to us and hurt companies, hurt industry, hurt the service companies who depended upon the health of the industry and hurt the country actually. It was supposed to be good for Canadian companies, as it turned out it hurt the Canadian companies more than the foreign companies. The sad part of it is it was all put into effect without any consultation of industry. From the time that the Liberal government was reelected after they took over after Joe Clark, February 1980, until the time the National Energy Program was promulgated on October 27th of the same year,

during all those months when they were putting together this NEP there was no consultation with industry. We didn't know what was going to be in this thing until the night it was announced. And this is very different I think, that what we're looking at today. Here we are today, a new government is being sworn in and we have already had extensive discussions with the people who are going to be formulating energy policy for that government. We've already had extensive discussions on almost every aspect of the business so that when they bring in new energy policy, whether it be a month from now or 6 months from now, within the next year, they will do so with full knowledge as to what the industry thinks of all aspects of policy.

NM: Do you think a company like Petro Canada was necessary?

AN: No, it was not necessary. Basically I'll start out by saying it was not necessary. I think that everything that Petro Canada has done would have been done eventually anyway. It was basically formed to, in the views of the government, to stimulate exploration in certain areas where maybe private industry was loath to go because they couldn't see the economics of it. And secondly also, to provide what the government felt they needed, a window on the industry, a frequently quoted expression, so that they knew what went on inside the oil industry rather than having to depend on being told so by multi-nationals. I don't think that it needed to have been formed. However we've lived with it now for quite a number of years and I think that we find Petro Canada generally acceptable at this point. We believe that they should. . . we were totally opposed of course, to the special privileges they were given on land, they were given certain lands, they were given rights that other companies were not given and we have been opposed to this all along, right from the very start and are still opposed to it. Even some of the Petro Canada executives have said that they were opposed to it and didn't really need it, they could compete without and we think that the new government will likely take away those prerogatives and privileges that Petro Canada has. We do find Petro Canada a reasonable partner to work with. Operationally they do their job well and after all, the people that work for them are mostly hired from our companies. And they're experienced people and we don't really have a problem there anymore. We do not think that Petro Canada should be a tool of government policy the way they have been and we think that they should operate as just another oil company now and I think this is probably the intent of the new government. At least they said it was during their election campaign. So to make a long story short, no we didn't need Petro Canada but now we don't mind Petro Canada and we get along well with them. In fact, they this year, became a member of the Canadian Petroleum Association. I must say, 5 years ago or 3 years ago I didn't think that was likely ever to happen. But they're a contributor to our association.

#047 NM: Can we go back to your career and talk about your professional affiliations?

AN: You mean outside of the oil industry?

NM: Inside.

AN: Within the oil industry? Mostly my major professional affiliation has been with the Canadian Petroleum Association. I first went on the Board of Governors of the Canadian Petroleum Association, I believe in 1967, which was the first year that I was President

and General Manager of Mobil Oil Canada. I have been on the Board of Governors ever since and I think that I may well have a longevity record as a Governor. I was Chairman of the Board of Governors, which is the chief executive's position on that association in 1970-'71, which was a time when governments were first really getting into our business. I have been on the executive committee of the Board of Governors ever since and this year I am again Chairman of the Board for the second time. I believe I'm the only individual to be Chairman twice, which just speaks to the fact that I've been hanging around a long time. I've enjoyed my relationship very much with the CPA, I've had the privilege of working with the chief executives of all the big companies who have been operating in this country now for well over 15 years. They have been and are a group of just very, very able people and even though we are very, very competitive as between our companies, when it comes to working together in an association like the Canadian Petroleum Association it's been a privilege to work with this quality of person. And that's been my major effort within the industry. I have been involved in a lot of other industry groups and so on over the years but that's been the principal one.

NM: Who were the most influential persons in your career?

AN: The most influential persons in my career. I think I would start with 2 university professors, Dr. Ralph L. Rutherford, who was one of the 4 academic staff on the department of geology, University of Alberta, when I went to university and influenced a lot of students that went through the university and he was the one who advised me to go to work for Mobil Oil, which was excellent advice. I had 7 job offers at the time. Another university professor, Dr. Charles Stelck???, an outstanding professor, outstanding teacher and a great geologist himself. There's a man who combined academic knowledge of geology with knowledge of the oil industry, he was equally good at both. I think almost any University of Alberta graduate that's gone through the University of Alberta since 1950 will refer to Charlie Stelck as having influenced him in his career. I did my, I think I was the first student to do a Master's degree under Charlie Stelck. I also had the pleasure of last year, organizing a huge roast here in Calgary. He has retired from the University of Alberta and we had this huge roast and we had 10 roasters. Some of the people you have interviewed such as Nick Taylor, Oscar Erdman, and quite a number of others were roasters that night and it was a great evening. But that's the 2 people from early in my career. Then later in my career I think the person that had the greatest influence was the former Chief Geologist and subsequently Exploration Manager for Mobil Oil, Dr. Joseph Spivac. I consulted with him many, many times. I worked for him for a long time but even after I ceased to work for him I consulted with him because I had just tremendous respect for him and he was just a great guy. He died of cancer about 4 years ago, within 2 months of having retired from Mobil Oil. So it was kind of sad. But I would say that those 3 people had the greatest influence.

#097 NM: What do you consider your achievements?

AN: My achievements? Well, I'm proud of having been associated with finding a lot of oil. I don't take credit for any oil that's been found myself, but I have worked with groups of explorationists who have been finding oil in this country ever since 1953 and for a

geologist there is not greater achievement than discovering oil. So I put that as #1. #2, I was very proud of the fact that, while I was still in my 30's I became the first Canadian to be President of one of the large multi-nationals here in Calgary and that I have been able to hang on to a chief executive's position ever since 1967 and this I consider a second achievement in the fact that I think that I have been connected with some very successful companies.

NM: Mr. Nielsen for somebody who is starting today in the oil industry, what is the most important thing for the person to know or to do if this person wants to progress in the company.

AN: I think there are 3 important items that young people should keep in mind when they start out. First is a good basic education. This is particularly true of the oil business. I think that in the oil industry you just need to have a good basic education and that really means a university degree. Now there are some who have progressed without university degrees but it's very, very difficult in this day and age because of the technical nature of our business. So you need a degree in geology, geophysics, engineering, data processing, business administration, something like that. Secondly you have to learn how to communicate. This is most critical, to communicate both in writing and verbally, to be able to explain yourself and make proposals and recommendations and reports on paper and to get up on your feet and talk to people. This is a very important thing in being able to move through organizations. And then thirdly, is the ability to get along with other people and to motivate others. There is no one who can do the job by themselves and they need strong support from people, both their peers and people working for them when they get into managerial positions.

NM: Teamwork.

AN: Teamwork. That's right. And to personally set the stage for others to emulate. I think that a manager should set an example, both with respect to deportment and with respect to work ethics and working hard, so that others can follow suit. And also very important is to recognize the efforts of other people.

NM: Looking back at your career, what do you think of it?

AN: Oh, I have been very happy with my career. There isn't a single thing that I would change. I look back upon some very important decisions I made, way back to the time I decided to, just to give an example, 1949 when I decided to go to work for Mobil Oil instead of going to Northwestern where I had a scholarship and take a PhD. At that time this seemed like a fairly small decision because I could always go back and take a PhD. It turned out to be a very important decision. I made other very important decisions, many of them over a period of years but in every case I think that every one I have made has turned out to my benefit. I've enjoyed my career, I've never been bored. It didn't matter what job I've had, all these jobs I've described to you, I've liked them all and I've enjoyed it all. And I'm still enjoying it and that's why I don't plan to retire very soon.

NM: Mr. Nielsen, thank you very much for the time you spent talking to me, I've really enjoyed interviewing you.

AN: Thank you.

