

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Stan Kanik

INTERVIEWER: Nadine Mackenzie

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NM: This is Nadine Mackenzie speaking. I am interviewing Mr. Kanik in Ottawa. Mr. Kanik, thank you for having accepted to participate in our project. Can you tell me, when and where were you born?

SK: I was born in British Columbia in 1923.

NM: What did your parents do?

SK: My father was a coal miner in Michelle, B.C.

NM: And where did you go to school there?

SK: Well, we moved to Saskatchewan very early in my life and I attended public school in Saskatchewan and in 1941 I joined the Armed Forces and went overseas for 4 years.

NM: That was a long time.

SK: That's correct.

NM: And then you came back to Canada.

SK: I came back to Canada in 1945 and I completed my high school and then I went and attended the University of Saskatchewan for 2 years and the University of British Columbia for 2 years, where I got my degree in Geological Engineering in 1950.

NM: Why did you choose geological engineering?

SK: I was always interested in engineering from day 1 and I happened to work in a mine in Kimberley, British Columbia, during the summers from 1946 and '47 and during those two summers I was introduced to the science of geology. And that's when I changed my mind from being a civil engineer or engineer of some sort to something very specific like geological engineering. It was my summer employment that opened my eyes to, shall we say, the avenues in geology.

NM: And so how many years did you spend at the university?

SK: Five in all.

NM: And then was it a BSA??? you got?

SK: Bachelor of Applied Science in Geological Engineering.

#020 NM: And then what did you do?

SK: I came out. . .of course, in 1950 jobs were pretty scarce but I managed to get a job in Alberta and in 1951 I joined Sohio??? Petroleum and in Regina, Saskatchewan. So my first job with Sohio was sitting wells in Saskatchewan. The first well that I supervised was Sohio Pens??? #1, which is located about 32 kilometres west of Regina.

NM: and after that what did you do?

SK: Well, I stayed with Sohio till 1953, when a colleague and myself, we joined Mobil Oil. I

stayed with Mobil for about 9 months and then I went back to university in the fall of '53. When I came out of university in '54, I joined Amoco Petroleum. I stayed with Amoco for 5 years and after I left Amoco I joined the federal government. In those days that was the Department of Northern Development and Natural Resources. That was June 1960.

NM: Why did you change?

SK: Because the job that was available in Northern Affairs was basically the Chief Geologist in the oil and gas sector and in those days the Department of Northern Affairs and Natural Resources administered all the rights in the Territories and off the Atlantic and Pacific Oceans and the federal lands within the provinces. That was what. . . so I felt that it was probably the best job in Canada for it could give me a wide spectrum.

NM: Absolutely, sounds very interesting. So what was your job exactly, what did your. . .?

SK: When I joined the Department of Northern Development and Natural Resources, my job was many faceted. My first job of course, was to evaluate the petroleum lands on Canada lands. We also provided advice to the Minister and to the senior officials with respect to the potential of the Canada lands. In those days, as you probably will remember, there were no rentals on lands in the frontier lands. The companies maintained the tenure under permits and leases by doing work, exploratory work on the leases or permits and it was my job to approve every exploration program and then to approve all the statement expenditures and the technical reports which we received after.

#044 NM: Did you have to travel a lot?

SK: Yes, I was very fortunate and that was one of the reasons I took the job because I love to travel. Yes, I travelled a great deal and basically, it was to the north. Basically to northern Canada. Of course, I also travelled to the east coast and the west coast, when we administered at the east and west coast.

NM: Mr. Kanik, which was the first company to show an active interest in exploring the Arctic Islands and when and who was it?

SK: In the late 50's, the Geological Survey of Canada carried out several reconnaissance programs on the Arctic Islands and they came up with a report that indicated that the islands were basically sedimentary rocks in nature and offered, shall we say, a very high prospective for hydro-carbons. When the oil companies heard about the potential of the Arctic Islands through the GSC reports, they immediately went out and of course, started carrying out their own surveys. The oil companies basically started getting very, very interested in the Arctic Islands in 1959. In the late 1959-1960 they filed on a great deal of the Arctic Islands. The regulations for filing were promulgated on the 24th of June 1960, so it was June 24th, 1960 when all the companies could file on the Arctic Islands, that was day 1, basically, of holding lands in the Arctic.

NM: Anybody could do it?

SK: Anybody. Anybody could file on Canada lands in the Arctic Islands, that's correct. Basically all you had to do was submit a request for acreage and put a deposit down of \$1,500 per permit and 5 cents per acre for exploration work for the first 3 years. Basically what it says, that you promise to do 5 cents or work per acre, on this permit, which is probably in the order of 50-60 thousand acres in size, plus \$1,500. And that's all you had to do.

NM: Were there a lot of companies who filed and did not follow through.

SK: Yes, in the late 50's and 60's, a great many companies filed but they had to pick up their option on June 24th and give us a deposit. Some of the companies just. . .I'm just trying to remember some of the companies. Many, many of the companies were quite small companies. I remember Phoenix was one of them and White Rose was there, who is now, Shell purchased White Rose of course, many, many years after that. And there was a company called Dominion Explorers, who drilled a second well in the Arctic, then there was Dome Petroleum, who drilled the first well in the Arctic Islands and there was a British or Scottish company called Round Valley, who drilled number 3 well in the Arctic Islands. Those were probably the major land holders. Now there were several hundred small personal involvement. A lot of people went in there, small individuals went in there with probably just interest in one permit. And you can just imagine, all you have to spend is about \$2,000 to hold a permit of land for 3 years.

#078 NM: But then the cost of drilling might have been very high.

SK: Well, this was strictly for exploration. And in those days we felt that 5 cents would basically carry out the geological appraisal, the surface geology in those days. We felt if you spent 5 cents an acre you could probably carry out a geological survey. That means you have to carry out the work on about 15-20-30 permits. And in this way you can get the \$1,500 together and basically carry it out. But personally the company that was most active, the Canadian company that was most active there in carrying out this kind of work was Dr. Sproule's company, J. C. Sproule and Associates.

NM: Cam Sproule.

SK: Cam Sproule, that is correct.

NM: Did you know him?

SK: Very, very well, yes, I knew him.

NM: Can you tell me about him?

SK: Well, Mr. Sproule was a very, very energetic person, a very, I would say, almost aggressive geologist. He had a vision that the north had great potential and being an explorationist with a great deal of foreign experience in South America and other parts of this world, to him the Arctic Islands was an untested basin. And he just approached it as he would approach a similar basin in South America. That's where he got a lot of his experience but Cam was a Canadian of course. He worked for many, many years for International Petroleum in South America. And then he worked for what is now Imperial Oil in Saskatchewan and places like that. But Cam as I say, had a vision. He had some extremely good staff with him in Calgary and they were the first people to go up there and use helicopters and planes.

NM: Pioneers really.

SK: They really pioneered the Arctic Islands, that is correct. In surface geology they pioneered it. I was very fortunate, I used to go and visit the Arctic Islands at least once a year and I would follow a Sproule party in the field.

NM: That sound very interesting.

SK: It was very, very interesting and that's one of the reasons again, why I took this job and I was very glad I did.

NM: When was it first possible for companies to file on land?

SK: As I indicated, the companies took an active interest in the north in 1959. The legislation

to allow companies to file in the Arctic Islands was promulgated on June 24th, 1960, so companies could pick up their options on that day. And I believe it was that day when companies, here in Ottawa, filed on something like 75 million acres. That's June 24th, 1960.

NM: When were the first regulations on Arctic exploration passed?

SK: The regulations were promulgated on June 24th, 1960. That was the day when the government accepted filings for permits in the Arctic Islands. Before then, there were other mechanisms or regulations to file on lands on the mainland, in the Northwest Territories and the Yukon but basically, what we'd call the Canada oil and gas land regulations with respect to the Arctic were promulgated on June 24th, 1960. The person that was very influential in promulgating them, I would say the person who had the vision, was Alvin Hamilton, who was then the Minister of Northern Affairs. It was an election then and he was then switched from Northern Affairs to, I believe it was Agriculture, in 1960 or '61 and I believe. . I'm just trying to think who Minister the next was, I think it was a gentleman from Manitoba, he just passed a couple of months ago. The other people in the department who were very, very active was Mr. A. T. Davidson, who was the Chief of the Resources Division, who is now the ADM, National Parks, here in Ottawa. He was also very influential. The whole Cabinet really, under Prime Minister Diefenbaker were very interested in opening up the north. They had a lot of people like Sproule of course, was promoting the north. So basically it was an industry-government, shall we say, idea to open up the north as quickly as possible and explore the potential that was there.

#130 NM: So there was good communication and an effort together.

SK: There was extremely good communication in those days, with the government and the industry. I still think that on our level, the communication is still pretty good. They're up and down. But basically I remember in the 1960's, communications were extremely good, it was free flowing and the government listened to what industry had to say and they acted very quickly in those days. It took a matter of weeks sometimes to do what takes up a year to do today. And with respect to Peter Bawden's involvement, as you probably know, Peter Bawden of course, owned Peter Bawden Drilling Company and in 1961 Dome engaged Peter Bawden to drill their first well at Winter Harbour. Peter Bawden moved his rig, by ship to winter Harbour and the well was drilled. It was started to drill, I believe it was December 1961 and was completed in April 1962, to around 12,500 feet. The well did not discover any hydro-carbons but there was a shallow gas discovery at about 1,600' I believe and we believe the gas was probably trapped there by permafrost. It was a significant find. Certainly it was a discouragement that Dome did not get a good flow ??? but basically, they weren't too concerned because it was a brand new basin and of course, you had to locate the structures.

NM: It was a pioneer effort.

SK: It was a very pioneer effort. And they found out that drilling was no different than drilling in Alberta. It was very much colder of course, the days were total darkness for most of the winter but the rig drilled in about 4 months. The well was drilled to about 12,500', which is a fairly good, it wasn't a record of course but it was quite good. And I don't think they took any different precautions to drilling it. It was a conventional drilling program and

they had no problems, no blowouts, nothing.

NM: What about the living conditions, it would have been tough?

SK: Well, the living conditions, everybody lived in trailers of course and they were warm. I think the problem in the north of course, is this constant cold, wind and the thing that really makes it difficult to work in the north in the winter is the total darkness. Today the rigs are much better winterized, better equipment and the housing is probably much better. And of course, the trailers are probably packed much closer to the rig today than they were in those days.

NM: And people don't stay too long.

SK: I think the people work 12 hour shifts, like they work 12 hour shifts a day.

NM: And then for a few weeks and then they are given. . ?

SK: Well, today they work for 20 days and they get 10 days holidays in the south. I just don't know how Peter Bawden rotated his crew out, because in those days we didn't have the jets. And we didn't have the big planes that could take and fly out there. But I'm sure that he rotated some of his crew out, because people had to work 12 hour shifts. And there's only so long that a person could work 12 hours.

NM: What about the problems of environment, were people very concerned about that?

SK: I was. I think every geologist is concerned about the environment. I don't think there were any problems at Winter Harbour on the 1st well or the 2nd well or the 3rd well as far as that's concerned. The rig moves were very near shore. As you probably know the Winter Harbour well was probably drilled only 2 kilometres from the water's edge or something like that. The 3rd well at Resolute was probably only drilled about 2-3 kilometres from shore and Bathurst, the number 2 well was probably drilled more like 10-15 kilometres inland. But sure we were concerned about the environment but as you probably know the Arctic Islands is a vast desert, it's a frozen desert. And so as long as you restrict the moves to the winter, you will not leave any marks behind. It's trying to do work in the summer, is when you get into problems and you leave those ungodly marks, track marks and caterpillar marks and truck marks, which will probably never heal because it's a frozen desert. But in the summer the soil thaws to about 1/2 meter. That's the active layer and it thaws but it doesn't heal itself. The environmental concerns were basically more restricted, initially, to the Territories mainland. It's in those areas that moving a rig or a seismic crew would do the most damage. It took us about 10 years before we got appropriate environmental regulations. And we were probably the first agency, probably in North America, with very suitable or appropriate environmental regulations. We were certainly way ahead of the provinces and rightly so.

#192 NM: And what about the problem of safety?

SK: With respect to what?

NM: The men working there, are there any accidents?

SK: It's colder, the winds were blowing harder, you had to be more careful at rigs. I don't think that Peter Bawden's crew for that well suffered any accidents. I don't remember any accidents, I don't think anybody. . nobody was killed. Again, there's the danger of frost because in those days it was probably running 40 and 50 below degrees all the time with a very strong wind. So it was very, very, bitterly cold. As long as you stayed in your trailer and stayed in the rig I don't think. . I mean, people were safe. There was no danger from

bears in those days. Winter Harbour, I'm sure has its share of bears but I don't think bears were a problem in those days, like they are today. But of course, the bear problem today is in the Beaufort, not in the Arctic Islands.

NM: When was the double credit system proposed and how long did it last?

SK: Let me explain to you what a double credit system was. To maintain a permit on Canada lands, the company, the permits were issued for 12 years and if I remember correct, I should have my table here, the first 3 years was for 5 cents, the second 3 years was 15 cents an acre and then it went up to 20 cents an acre, 30 cents an acre, 40 cents an acre. And for the last 6 years it was 50 cents an acre. So it came out to something like \$9 an acre that you had to . . .no, it was more like \$4-\$5 an acre that you had to spend during the life of the permit. As I indicated we found that it took about 5 cents an acre to carry out a good geological survey for the first 3 years. For the second 3 years we felt it took about 15 cents to do an air or mag survey or some form of gravity survey, focussing on these large structures that we thought were in the Arctic Islands. That looked after 20 cents. Once you got into the 20 cents per acre per year, the money mounted up very quickly, especially in the last 6 years where you had to do 50 cents an acre, a year. That came out to, well, in the last 6 years of course, it came up to \$3 an acre right. Now, to do \$3 worth of work on an acre and for example you had a permit of say, 80,000 acres, that was \$240,000. So basically we had it structured that way because we wanted a well drilled in the last 6 years of the permit. Okay, a lot of the companies went in and picked up millions and millions of acres. By doing geology and some gravity work and some air and mag and probably some seismic and drilling a well, they could never spend that kind of money and maintain large acreage. That was one of the reasons why we had to do something about it. The second reason is that we had to encourage the drilling of wells. Companies going in, look at the geology, do some seismic, and then say, the well's going to cost me a million dollars or \$5 million, it's just too much. So what we got into the regulations was a form of double credit and that only applied to well drilling. Let me give you an example. If a company had to say, spend \$10 million on large expensive permits and the well cost \$10 million, we would tell the company, you drill a well for \$10 million and we will double the 10 to \$20 million. So you will earn \$20 million worth of credits to maintain permits. This was really what it was all about. It was another incentive for companies to drill, not to surrender acreage.

NM: Instead of leaving the land.

SK: And instead of doing a little bit of seismic and coming out and not doing any work. By allowing companies to have double credit and it was only applicable to well drilling. So the way we handled it, a company would come to us and I would take their application and I would make sure that the well. . there was good reasons to drill that well, I mean that this wasn't to be drilled any place. And there was 10 points, they had to meet a criteria of 10 points. It had to be located so far from another well, it had to go to a certain depth. It had to be drilled within a certain time frame.

NM: So there were strict regulations.

SK: Well, these weren't regulations, these were just the guidelines I set up, which we used internally to approve, to assess their applications. We just didn't tell them what the criteria were, that was out business and we looked at every application. And of course, these also applied to mainland Territories and mainland Yukon. If a company we felt,

earned enough points or met our criteria, they would get double credit approval. Another way of and I used to like doing this because you'd get in negotiations with the companies, what we'd say, why don't you drill 5 wells and we'll give you double credit on 3 wells.

#270 NM: So there was more incentive.

SK: More incentive, more incentives. So we had more companies drilling multi-well programs. Sometimes we'd tell a company, look, you cannot get double credits, you've got to drill two wells and one will be a double credit, this sort of thing. I remember we told Shell, they carried a very, very large program in the Peal Plateau, Shell came up and we told them, look, you drill 8 wells and you'll get double credits for 5 and they did.

NM: That was quite good then.

SK: Well, certainly. We thought it was excellent. That's what incentive should be. Because if we hadn't offered double credits, Shell might have come in and drilled 2 or 3 wells.

NM: And that was it.

SK: That's right. Now, we had 8 wells. 8 wells were drilled. And this is really what double credits were about. They were discontinued, double credits were basically discontinued in the 70's, when we didn't need any more incentives. Companies were willing to drill without incentives.

NM: So that was discontinued.

SK: Permits were discontinued in the 70's. It achieved its objective in encouraging drilling.

NM: A good start then.

SK: It was a good start, that's right. And I would say, I don't remember how many wells we approved for double credits, I'm sure there were no more than 30-40 wells, in total that we approved. But approving 30-40 wells, I'm sure we got 60 or 70 wells drilled in total, during that period of time. And they were critical wells. As I said, one of the criteria was that the well had to be in a very, very remote area. A well drilled in the southern Territories of course, never would rate double credits. Because we knew a lot about the geology by then and it was nice to have a well drilled in the southern Territories but it was more important to have one drilled in the Arctic Islands.

#290 NM: Yes, absolutely. Can you tell me, how do you foresee the future of the Arctic Islands now?

SK: Let's just explore the current status. The way that it is, Pan Arctic is basically the major land holder in exploring the Arctic Islands and that's the way it should be because it's a very efficient way of exploring in a very remote area. Pan Arctic owns the drilling rigs, and they operate on behalf of themselves and the other operators. To date they've discovered something in the order of between 13 and 15 trillion cubic feet of gas and some oil. They've been working there, diligently, since 1969 or '68. '69 is when Pan Arctic got very active. Now this is almost 15-16 years ago. Now, there must come a time when a company has to get some money out of there. They put a lot of money in there. I think Pan Arctic has spent well over \$500 million.

NM: They have invested so much.

SK: That's right. And it's about time they were given an opportunity to get some of that money out. Of course, the government is not standing in their way but the thing is that they'd have to export their gas, they'd have to get their gas out.

NM: This is the end of the tape.

Tape 1 Side 2

SK: Good. So Pan Arctic has. . .they haven't met the threshold volumes of gas they needed to build a pipeline because they have in the order of 15 TCF. I don't think they've met the threshold to build a large, large diameter pipeline to southern Canada. But basically they have enough gas discovered, at that rate to move it out by LNG tankers or build a smaller pipeline to connect to probably the Beaufort area and then move it by pipeline south along the Mackenzie River. That's one option that they have. Unfortunately as you probably know, and it's not Pan Arctic to blame for it, there's a surplus of gas in western Canada. In fact, it's very difficult for B.C. and Alberta to find adequate markets. For gas that's being produced at much cheaper prices than the Arctic Islands gas will be produced. So basically it's a marketing problem at the moment. The markets that Pan Arctic tried to work out were in Germany and other parts of Europe and the eastern United States. Well, these are pretty well now met by other sources. Oil, Pan Arctic is hoping to remove some oil from Van??? Horn this year. They have very, very small reserves in Van Horn and they would like to move a tanker in this year and take a load out. It's not a very viable operation as you know. You can't make money on one tanker operation and one load a year, that's not a way to make money. Pan Arctic appreciates that but they feel they need this kind of experience before they start building large class 10 ice breaker tankers and move oil out of the Cisco field. Pan Arctic feels that they have adequate reserves at Cisco to build several class 10 tankers and move that oil out. I see several serious problems in that area. The water is quite deep in that area, it's permanently covered by ice and I'm sure that technology will eventually be developed in getting the oil out but I'm sure it's not going to be done in the 1980's.

NM: That takes time.

SK: That takes time and it takes a tremendous amount of money. I don't know what a class 10 tanker would cost you, it would be 5 or 6 hundred million dollars. So for that kind of money you need a lot of oil over a long period of time. And if oil maintains it's current price of around \$37-38 Canadian, maybe it might be competitive. But you have to be competitive. So unfortunately because of this current status of the world markets for gas and oil, I don't see that Pan Arctic has very much opportunities or options to export what they've discovered and it's rather unfortunate. I envisage Pan Arctic will probably maintain a small exploration program in the Arctic Islands, drilling 2 or 3 wells a year. Because there are still many good structures to be drilled. But with respect to developing the current oil resources it's kind of remote I think. And as I said, with respect to gas, gas is better situated, two of the large gas fields are on land at Drake and at Heclum???. Some of the gas fields are offshore, but again. . . I'd have like to see an LNG??? project go ???, that would have given Pan Arctic and Petro Canada and Dome people an opportunity to bring a new technology to the frontiers and at the same time to export some of their discovered gas resources. Because the only thing that moves technology any place in this world is demand for technology. If you don't need demand, nobody is going to spend millions or billions of dollars developing something that you just don't need.

NM: So it's a vicious circle.

SK: It is a vicious circle, that is correct.

#045 NM: Can I ask you your opinion on the Thomas Burgess report?

SK: Well, being a geological engineer, I saw the need for an inquiry of that kind. As I said, the geologists were probably the world's first ecologists, before we ever heard about ecologists and environmentalists, the geologists did the field work and they were concerned about the flora and the state of the environment. So I don't think I have to defend our position. I was rather disappointed in some of the recommendations. Like for example, putting a moratorium on building pipelines in the Mackenzie Valley for 10 years, I don't think that was really needed.

NM: That was a long time.

SK: That was a long time ago. And of course, in the meantime, now we have a pipeline from Norman Wells to Zama. I think he did focus on certain items, certain issues in the Mackenzie Valley area, which were required to be focussed on. The plight of the people had to be investigated, their lifestyles had to be looked into, their interaction with the industry had to be looked at and these concerns had to be brought to the attention of the public and to the attention of the government. These were all good points. I don't think that industry and government are people without ethics, without moral conscience. I think both industry and government have moral consciences. I don't think they basically go out and rape the land or advertently try to harm the people, I'm sure they don't do things like that. Certainly we don't do things like that. But psychologically he kind of put a damper on exploration in the Mackenzie Valley area.

NM: Because people were hoping so much it would create jobs.

SK: That is correct. Unfortunately it was also about the same time when the Beaufort Sea discoveries didn't prove up as well and secondly there was this immediate surplus of gas and we couldn't take advantage of building a pipeline. The Prudhoe Bay gas pipeline has not been constructed and I don't think we'll see it built in the 1980's, I don't know if we'll ever see it built in this century. And of course, we were going to take advantage of the Prudhoe Bay pipeline by building the Dempster lateral. In my opinion I've been over the Dempster route many, many times, as a geologist I spent one summer in that area, I suggested a Dempster lateral route is probably environmentally much more sensitive than the Mackenzie Valley. I think it's much more sensitive. Certainly the construction conditions are much more adverse than the Mackenzie Valley. So it was a trade-off really and I don't think much thought went into the trade-off. But I still agree that people's concerns are paramount, I mean the native people's concerns are paramount. I'm sure that the people that are building the Norman Wells pipeline have considered all these. I hope they meet the expectations of the native peoples and I hope the native peoples get a certain amount of employment out of the pipeline and that industry can prove to the native people that the two can coexist. Personally I don't see much difference, building a pipeline in northern Ontario or northern Saskatchewan or Alberta, than building one in the Mackenzie Valley. The same type of people live in those areas, there are native people living in northern Alberta. And they have to interact with the industry.

#082 NM: Mr. Kanik, can we talk about how business was done in these days. People were very trusting.

SK: I still think people are very trusting today. 25 years ago we didn't have the elaborate checks and balances we have today. In those days I don't think we required them. In those days we had very, very small staffs in the government, we had one or two experts and they pretty well ran ??? stature of the government. We didn't have baseline studies, whether it was the environment or engineering. The oil companies basically were more exploration minded, we were in the days when you were basically doing a great deal of reconnaissance work. The main objective for the government in the 60's was to open the Arctic, was to assess the potential of the north and was to find an indigenous supply of oil and gas for the country. In those days the governments did not spend the time on, let me say, writing position papers, or trying to change governments viewpoints because the government of that day was dedicated to develop it. We had very few regulations. If you'll remember correctly we had the Canada Oil & Gas Land Regulations and then we had the Canada Oil & Gas Drilling Regulations. The Canada Oil & Gas Land Regulations were valid, were in fact used for almost 20 years, until about 1982, when the Canada Oil & Gas Act was passed. There were many, many amendments to it since but basically we ran under those regulations. They were very broad regulations, they were open to interpretations and many orders were issued pursuant to those regulations. The administrative staff of the departments had a great deal of shall we say, ability to negotiate on many aspects of exploration. As I said the regulations were basically guidelines. We could meet with oil companies and encourage them to get into different areas, we could promote certain areas. It was just a matter of getting more work done in the north. The companies certainly trusted us in those days, I'm sure they trust us today. They were looking for information and they were looking for getting their drilling and their exploration done quickly, efficiently and at the least possible cost. We in government definitely tried to be very, very helpful. I remember on many, many occasions, I used to take many trips to Calgary and try to promote certain areas of the north. I'll never forget that I spent a great deal just going from oil company to oil company telling them, giving them the virtues of Hudson Bay, the Atlantic or the Pacific areas, asking companies to file on acreage because it was available. And I just told those companies how easy it was to get in, how little it would cost to explore and why didn't they just go in there because it was very open areas. The land was very, very reasonable and there were no constraints on exploration. Most of the exploration was still carried out in the winter time in the north. Environment was certainly in the back of our minds but it wasn't the constraint that it is today. I don't think the companies did any more damage then. They certainly do a lot less damage today, because of the different environmental conditions. But there was this agreed, or shall we say, this dedication to exploration. We felt that these senior people in the government were dedicated to development, their objectives was development, within the context of looking after the environment and the native people. But basically it was the days of when exploration was the mode and the government did everything in its power to make it go as cheaply as possible and to be as effective as possible. We encourage companies to join forces, to organize consortiums, to organize plays together, because we felt that was the cheapest way to do things. And we did everything we could to expedite these things.

#139 NM: Let us go back to your career Mr. Kanik. You were working mostly with the north

and then what happened?

SK: Well, I'm still working, today I'm with the government, now the Department of Energy, Mines and Resources for the last two months. I'm still working, today I'm back to looking after oil and gas for the whole of Canada. But going back to reflect back on the early part of development, as you probably remember, in 1960 the industry took off and we had the first 2 or 3 wells drilled in the Arctic Islands, about '63. As you probably remember, in 1963 or 4, about that time, oil was discovered in the North Sea. A lot of the multi-nationals, basically, literally pulled out everything out of Canada and transferred their resources to the North Sea. I particularly think about Canada Southern, companies like that and they basically vacated Canada and they went to the North Sea. So in 1963, '64, exploration just about died in the north and it was during that time that we did our utmost to promote it. It was those days that we tried to work out new incentives for the north, to encourage companies to come back to the north. As you probably remember there was a lot of oil in Alberta in those days. It was the days of Zama Lakes was discovered, Beaver Hill Lakes fields were being discovered, the D3 fields were being discovered. There was a lot of oil in Alberta and Saskatchewan and there was not that great need to explore in northern Canada for domestic purposes. What really brought the oil industry back into the north was the discovery of Prudhoe Bay in 1967-'68. This place became . . . our office became a beehive of activity because all the companies wanted to file on acreage in the north and in a matter of days or weeks we had something like 600 million acres under permit in the north. Everybody came in and obviously people were filing on areas that they knew nothing about. I know companies filed on the pre-Cambrian, I know companies filed on the British Mountains, which is basically a granitic type of mountain.

NM: So everywhere.

SK: Everywhere. And then companies just filed on every place, everywhere and anywhere because land was still very reasonable. You still only had to pay 5 cents an acre to hold then for the first 18 months or 3 years, depending where you were. And those companies went in there basically, to get acreage and to try to farm it out to the large land holders like the Dome's and the Cansuk's??? and the Esso's and the Gulf's. So we had a dry spell from about '64 to '68, it was a very dry spell, we didn't get too much exploration. We definitely took off in '69-'70. '72 was the peak year in northern Canada, something like 83 wells were drilled in northern Canada. And then it's been decreasing every since. With the advent of drilling in the Beaufort in 1976 by Dome, we have seen a tremendous amount of activity in the Beaufort. As far as the number of wells were drilled, they didn't drill very many wells, but the cost of exploration has multiplied by almost 100 times. Though something like a billion dollars is now spent in northern Canada exploration, or on Canada lands I should say, the number of wells drilled is probably in the order of 30-40 wells only. So you can see the cost of drilling in the north. Something has to be done to lower those costs. Maybe new techniques or something. Because you've got to find a lot of oil or gas to pay for wells that cost that much.

#190 NM: What do you think of the National Energy Program?

SK: Well, the National Energy Program, people should realize, has many aspects. I think there's something like 10 or 12 different sections or sectors to it. ???, the industry is one,

PGRT is one, Petro Canada is one aspect. As I said, there's something like 10 or 11 or 12 different aspects. I agree that many aspects were good for Canada. I would say that some of them certainly weren't. They've had adverse reactions of course, by the multi-nationals. The one that probably had the most adverse effect on the provinces was the PGRT, which is the Petroleum and Natural Gas Tax. It probably had the most adverse effect on it. Because what actually happened was that it was the first time that the federal government came in and claimed a fairly large chunk of the revenues from oil and gas production. The government needed revenues, Petro Canada came into formation, Petro Canada needed money for exploration. And of course, where would they get the money, of course, the industry had to pay for it. I mean basically the oil and gas industry sector had to pay for it, not the industry. Because in the long run it's the consumer who pays for everything anyway. I believe in certain aspects of it, I think some of it was very beneficial for Canada. But certainly some of it had very adverse affects. But as you probably realize a lot of the more adverse affects have now been modified. As you probably know new oil prices are being paid for all new discoveries. Enhanced oil recovery projects get new oil prices, frontier oils would probably get new oil prices. Now this is something, this is the advantage, this is the positive side. Now this is not the NEP, but this is what the government has finally realized, that you've got to pay world prices to attract world explorers to the scene. That's very good, that's the positive aspect of it. The other thing that the government has done recently is to remove some of the PGRT, tax on UR's??? for some projects, until the project has paid out for itself. Now that's a very good point. These are the modifications to NEP. If the government keeps on doing things like that, keeps modifying and changing it and taking the PGRT off certain projects until these projects pay for themselves I think that will gain industry's favour and industry's, shall we say, confidence again. One thing of course, that industry didn't like about NEP, was the back-in clause. I certainly appreciate what industry was doing. My response to the back-in clause also is. . .well, it was retroactive, that's true, but we should have told the industry, well, what do you want, do you want to surrender 50% of your acreage or do you want to have Petro Canada back-in for 25%, which option do you want. As you probably know, companies operating in the north, on discovery they do not have to surrender any lands, like they do in the rest of the world or the province. Normally if you find a discovery in Alberta, you surrender 50% of your acreage. Now in the north or in the Canada lands, we don't ask the companies to surrender. What we ask the companies to do is let the federal government or Petro Canada in this instance, have the right to back in for 25% working interest. Therefore the company maintains - the original operator maintains the operatorship and maintains access to all the lands. Now the multi-nationals don't like it that way of course. Certainly it benefits Canada but maybe that could be modified now too.

#248 NM: How do you foresee the future of the oil business in Canada?

SK: With respect to Canada I think the future is very, very good. This is my job right now is to assess the hydro-carbon potential of Canada and the hydro-carbon resources and reserves of Canada. I think that we're very fortunate that we have these huge, huge oil reserves in Saskatchewan and Alberta. Basically they are heavy oil sands and tar sands, which are probably equal to anything that they have in the Middle East. Unfortunately ours is in

heavy oil. These are very expensive to extract and to process. As you probably would realize, maybe people don't realize that Canada is almost self-sufficient in oil as far as the quantity is concerned. We're not self-sufficient as far as the quality of oil is concerned. We export a great deal of oil to the United States on a daily basis, but it's heavy oil that our refineries can't use. So obviously it's being exported. Now we have a tremendous potential to produce the heavy oil in Alberta and Saskatchewan. What we have to do to be self-sufficient and one of the ways we can become self-sufficient earlier is to build upgraders, some form of refinery upgraders, to be able to process this oil in Canada instead of exporting it. Then in quality we could become self-sufficient. As you probably know last week the government announced that the Husky upgrader will be built. It met with unanimous shall we say, agreement, from all sectors of the country that this is the route to go. Instead of spending \$1 billion in the frontier lands, maybe we spend \$1 billion and build an upgrader. I think that's the way we have to go. I still believe that we have to explore the frontier lands but I still think probably we should direct some of our energies and monies towards the heavy oils in Alberta and Saskatchewan, that's where the oil is. If we want to become self-sufficient, it that's the cornerstone of our NEP policy, that's what it is, is self-sufficiency, I think we can become self-sufficient by going.

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#281 NM: And Canada has the resources.

SK: We have the resources and we can do that. The Husky upgrader is the first step, it's step one to become self-sufficient. By building maybe one or two more like that, we can become self-sufficient sooner than people realize. But what people don't seem to realize unfortunately, is that a lot of the D3 and Beaver Hill Lake fields, that were discovered in the late 40's and 50's, are being depleted. A lot of the D3 fields will be completely depleted in the early 90's. That means, according to Alberta officials, something like 30% of our capacity for producing light gravity oils will be lost to us in the early 1990's. So if you take 30% off our current capacity, that 30% has to be replaced by something else and that 30% is a big, big number. As far as daily production is concerned, that's in the order of 500,000 barrels a day or something like that. Now that has to be replaced in addition to, more oil to become self-sufficient. Now where do we look for that oil. Well, we have to look in the frontier lands. Hopefully we can get some oil coming out of the Beaufort very soon, I hope we do. There's reserves there that we can probably extract. As you probably know, Norman Wells is coming onstream next July, which is a good addition. Hopefully Hibernia could probably come in the late 80's maybe, or early 1990's, which would add some reserves to Canada's potential. What people don't realize is our fields are getting smaller and smaller. We're finding some fields but they're getting smaller and smaller. And the interesting thing about, to give you the size of our fields in Canada, when Norman Wells goes on production next year, which it's going to produce around 4,000 cubic metres a day or 25,000 barrels a day, that's not a big deal. It's going to be the third largest field in Canada. You just think, 25,000 barrels a day will rate it as the third largest field in Canada, you can see that Canada's big fields have been depleted. Number 1 of course, will still be Pembina, number 2 will be the Midale-Weyburn trend in Saskatchewan and number 3 will be Norman Wells. So until we get some other new fields coming on, we're getting in an area where we're getting a lot of small fields, a lot

of small production and this is really what concerns me. I'm talking about light gravity oils, I'm not talking about heavy gravity oils or the tar sands.

NM: What about the technology too, is it going to follow?

SK: The technology will follow, but we have to get the technology in the upgraders because we have to upgrade the heavy crude. That's one area we have to get the technology. The technology is in the world, the Japanese and the Germans, they're well advanced now.

NM: This is the end of the tape.

Tape 2 Side 1

NM: Mr. Kanik, can you talk about the contribution of the province of Alberta to the development of the Canadian oil industry?

SK: Well, certainly. Alberta was prominently the cornerstone of the oil industry in Canada. I think today, something in the order I believe, 80% of the oil that's produced every day comes from Alberta and we expect that things will stay around 80% probably, unless we get some large frontier production. Gas as you know was discovered in Alberta in about the 1880 era. Oil was discovered in Turner Valley in 1936, about that time. Leduc in '47 and then on, it just took off. The Saskatchewan fields were discovered in the 50's and the Manitoba fields of course, was discovered in 1951, that's Virden. B.C.'s fields were discovered in the 50's as well. But it's Alberta as I said, who probably rates with about 80% of oil production. Not only is it only oil, but it's natural gas sector that's contributed a tremendous amount to the economy of the country. Alberta has a capacity probably to produce 5-6 billion cubic feet a day, which is in itself a very, very large amount of gas. And the petro-chemical industry that ensues from it, both of them are using gas products and certainly oil products. I say, when you talk oil, you talk Alberta basically. Maybe in the 1980's, maybe the frontier lands will contribute some of that. But until such time I think Alberta is the cornerstone and it's better, almost a necessity, a requirement that we get along with Alberta with respect to developing the oil. Because the oil has so many facets, there's the petro-chemical industry, there's the transportation industry, there's the fertilizer industry, you name it, oil and gas comes into play. You can see what's happened to Alberta's economy in the last two years when the market for gas has pretty well been cut in half practically, the economy of Alberta is almost in the doldrums right now. Things aren't looking too good in Alberta. But they will of course, once you get more gas exports. Oil is trying to do its best to pick up where gas left off. But basically, I think we underestimate what gas has done for Alberta. Because all the chemical plants that you see in Alberta are basically as a result of gas.

NM: Yes, we talk about oil and we don't talk much about gas.

SK: That is correct. And another thing that we have to talk about when we're talking about the oil industry, we have to talk about sulphur. Canada's probably the world's largest producer of sulphur. I know sulphur is not a great money earner for Canada but it does contribute a significant amount of money to the Alberta economy. What it also does, it provides a technology and we should always look at it that, when there's a need for it, technology has to be developed to produce something. Whether you are talking about chemicals, about sulphur, about fertilizers, any of the end products, any of the end products of hydro-carbons, you're bringing new technology into the province. And

basically some of the spin-offs of the technology is going to be the construction of new plants, or shall we say, the providing of supply plants or factories, manufacturing these goods and services that are required to maintain this demand. Sure, forestry and agriculture is still a large component of Alberta's provincial economy but it certainly is the hydro-carbons or the oil and gas side that's the major contributor to the economy at the present time, both as a revenue producer and both as an employer of people. The oil and gas industry of course, is a very shall we say, very money intensive industry. It needs more money than it needs people because it's so automated. The drilling industry is a direct result of the oil industry and today you'll probably find Albertans and people from Saskatchewan and Alberta working in all parts of the world. You'll find Canadians working in China, in Algeria, in the Middle East, wherever you go in this world, you'll find Canadians working on drill ships, on seismic ships. And though we don't manufacture the equipment we certainly send out our people to work. And that all contributes to the national economy. There's nothing wrong with Canadians working overseas. Canadians working overseas really provide a demand for our national industries, national supplies, because they are aware of and they know that we are capable of manufacturing these items.

#053 NM: Can you comment on the training of oil people in your time and on the training of oil people nowadays?

SK: Yes. I'll never forget that. . . a lot of people don't seem to remember that when the Trans Canada Pipeline was built in the 50's, across the west to the east, I would say the majority of the skilled and unskilled people were Americans. I don't think Canada even had experienced welders. Because I remember, my brother and myself, we took a trip and we saw the work gangs at work and they were all totally American. In fact, the truck drivers were American. Today, in the 70's and 80's, you would never even think of seeing a foreigner working on pipeline gangs in Canada.

NM: These Americans, did they stay or did they go?

SK: Oh no, they all went back. I'm sure they all went back. Well, not all of them. Obviously some of them stayed, but many of them didn't. But we just didn't have the skills. We didn't have the geological skills. We probably, in 1950, how many experienced geologists did we have in Canada, about 10 probably. Shall we say, in the quality of Dr. Cam Sproule, we probably had about 10 people of that calibre in Canada. Today we've probably got in the order of several thousand people, geologists in Canada of that calibre, I think. Of that experience too. This is why you see Canadians all over the world as geologists and engineers and seismologists and things of that kind. Our schools did not graduate ??? people, most everybody went to Oklahoma or Texas or Stanford or some place like the for their, even under graduate work. As I indicated earlier that after two years in Saskatchewan I switched to UBC because I felt they had a better geological department, which I think they did. But basically their knowledge of hydro-carbons was almost nil, even at UBC in the 1940's. It was only in the later years that the universities of Saskatchewan, Alberta and B.C. developed better schools of sedimentary geology. And I still think the universities in Canada have a long ways to go. The University of Calgary is probably in the forefront today, in developing courses specifically for the oil and gas industry. High schools, that's where you really train people to know what to go into for

careers. Who ever in high school every heard of a geologist or a seismologist or a drilling engineer, nobody ever heard. As I indicated to you, I didn't know what kind of engineering I was going to take until I started working in a mine and I found the work so intriguing and interesting that that's when I decided to become a geologist. It was after ??? that I switched from hard rock geology to sedimentary geology. Now the schools, high school and the colleges definitely brought in courses and career development and instructions for younger people in as early as the 60's and 70's. And today it's very well entrenched in high schools, the idea of opening up the vistas of geology and other geo-science subjects to high school students and even to the intermediate grades. Second our universities have certainly done a tremendous job in teaching geologists and engineers and geophysicists in the basics of the earth sciences. Then one should never, never forget the professional societies in Canada, we're looking at the Canadian Society of Petroleum Geologists, we're looking at the Canadian Institute of Mining and Metallurgical Engineers, we're looking at the Canadian Society of Exploration Geophysicists. These are the three big ones. One of their main objectives of these professional societies is the dissemination of information in the geo-sciences and encouraging students to enroll in these geo-science courses, to become geologists. I've been very, very active myself in the CIM here in Ottawa and I participate in shall we say, career nights, professional nights for the students. We make as a CIM members in Ottawa, we go to McGill, Queens and the two Ottawa universities, where we hold a career night. We show films and slides and we give talks to the students and we encourage students in their second year to switch to geo-science courses. In fact, I think one year we were so successful at Queens that every single geology student at Queens, 2 or 3 years ago, went to Calgary. So I thought that was very successful. We converted everyone from hard rock to soft rock in one . . . basically over 2 or 3 years but everyone, every single person in that one year at Queens, went and got jobs in the oil industry. That was our objective. So basically it's the professional societies and member like myself and hundreds and hundreds of other members. Aubrey Kerr, as you indicated, does a tremendous amount of work for converting people or convincing people to look at the geo-sciences as a career. Certainly this was not 20-30 years ago. Let me add again, there are many, many girls, ladies, going into the geo-sciences now. I mean. .

#113 NM: It used to be something . . .

SK: Almost nil. Now we see many, many girls and young ladies in geology and geophysics. In fact, a very, very good friend of mine is a drilling engineer for Dome, she likes her work very much, she goes on drill ships, supervise the drilling.

NM: Right on.

SK: Right on. And it's excellent. Now this is the area that we certainly don't differentiate between the sexes, I mean, it's open to both and I think it's a very, very rewarding career for women. Very few people have to go out in the field anymore, you can if you want to or you can get jobs with agencies or companies that you don't have to go in the field. If you want, you can. Sometimes I think every geologist should be made to spend 2 or 3 summers in the field. That's where you learn geology. When you walk over thousands and thousands of kilometres of outcrop and you map it and you look at it and you get bitten by mosquitos and black flies.

NM: Good training ground.

SK: I think it's a good training ground. I think it makes you remember things and appreciate things when you get to the office. But still, I think every geologist should spend time in the field. I think Canada can do a lot more in the field. I think we have come to almost like the under graduate side. I think Canada's done very, very well as far as the under graduate side is concerned with respect to training. I think our post graduate schools probably have to get upgraded a little. With the exception of Calgary, I think very few universities offer very much in the way of PhD's for the geo-sciences. Not in specific geo-science courses. I mean, every university does, like Queens and. . they offer. . but basically the Queens' and McGill's, they offer courses in hard rock more so than in soft rock. I'd say in these fields and in these universities that we have to do more work, more missionary work. But the thing is, the demand has to be there.

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

SK: I think it was very interesting. I'm glad I went into geology. I couldn't think of any more satisfying profession. I mean, your in touch with your profession 24 hours a day, in fact, every time you step out the door, you're looking at, you're still walking on rocks or whatever it is, that's geology. I'm glad I switched my job to work for the federal government, 24 years now. It's given me an opportunity to work in different parts of Canada, different people. I've probably been exposed to more geology than the majority of the people in Canada, the geologists in Canada. I've seen probably more of Canada than just about any other geologist and that's been very rewarding. I like to travel, I like to see new areas. It would have been rather more interesting if the federal government, the financial rewards would have been better, as you probably know, we don't think we get paid as we should get paid. Industry people get paid quite a bit more than we do. But our job has other, shall we say, benefits. That is being able to travel and attend conferences and basically build up a good background of general geology and general requirements. I should say I'll be retiring probably in the next couple of years and I think I want to stay in a geological area. I'll probably like to go back west and probably, maybe. . .

NM: Maybe do some consulting work.

SK: Yes, consulting or work on some projects, work with some university or something like that, I'd like to stay active in it. Because I'm a very active person, so I'd like to maintain my hand in it.

#156 NM: And this is the last question, on the whole, what do you think of the oil business?

SK: Well, the oil business, if people could just remember the oil business or the petroleum side is a sector of our economy. It's like forestry, it's like agriculture, it's like anything else, it's a sector. The oil business of course, it's very, shall we say, money intensive. You need more money than you need people. It's a very aggressive industry, more so than other industries. It makes its decisions very quickly irrespective of what people think, it moves very quickly, it changes directions very quickly sometimes. It's unforgiving, I'm sure that you know, there are hundreds and hundreds of people who have worked for oil companies and got laid off, got fired. They've had to try to get another job, some of them have left the industry, I know a lot of people who have left the oil and gas industry because they couldn't find jobs. Another thing is, in this business, you have to maintain currency. If you're out of a job here for 6 months to a year, you're obsolete. Really, truly,

you are. It's over, it's game over for you as far as a geologist is concerned. I've been working with the department now for something like 24 years, I no longer can practice my profession as a geologist because I haven't been practising as a geologist, I've been practising more as a professional administrator, assessing different things. I certainly haven't got the skills that I had 25 years ago, because I didn't maintain them, because I didn't need to. That's the disadvantage of it, but I'm sure that many people in the industry, working for the Esso's and the Gulf's they're also in the same position. The administration, the senior people, they're not practising geologists either, they're basically administrators, we all are. So if I go back, you've got to be very careful what you can consult in, you've got to consult in the field that you know best, the area that you know best. It's a very necessary industry, it's a very dynamic, almost more political than any other industry in Canada. Because we need energy, everybody uses energy, everybody wants to buy energy at the cheapest price available. There's a lot of power politics in this industry, there's a lot of multi-national involvement, there are a lot of governments get involved in energy and oil and gas. A lot of decision are made outside Canada that affect us on a broad base. Many things that we can't do, we can't change. We don't set the price of oil, we tried to, or we are trying to, I don't think it works. We tried to set the price of gas, I don't think that works very well either, because we have to be competitive. Because it's a world industry, more so than just about any other industry, it's a world industry.

NM: A big competition.

SK: It's a competition from many sectors. Irrespective of what people think that there's a shortage of oil and gas, it's still a very competitive industry. The person that can produce oil and find oil at the cheapest price makes the most money, it's as simple as that. If you look at the price earning ratios of the Gulf's and the Esso's and the Shell's, you can see which is the company that has met with great success and you'll know the companies that have not met with success. There's a lot of mergers, it's very traumatic ????. In the early days people were transferred. I know friends of mine that probably worked in 7 or 8 different cities, have been transferred that many times. You have to uproot your family every couple of years or something. They close an office and everybody has got to go. That's traumatic and upsetting in that sense. I think the companies are getting much more, shall we say, human minded now. I don't think they're as traumatic as they used to be, but there are still cases where companies will say, well, you don't make any money in this area of the world, let's just shut down and go, simple as that. Some you bring back and some you just let go. These are the things you have to live with. It's one of the few industries that does things like that. It has to do things like that because it's not labour intensive, it needs more money than it needs people. And they can always, usually in the past, there's always money to hire people. If a company wants to start a new exploration base, it's very, very easy to hire geologists and geophysicists. You just give them more money and they will go. It's a very multi-national business. Canada has to realize that the industry is basically, not run by the multi-nationals, but it's effectively, sort of very much affected by the multi-nationals. They set a lot of the standards, good and bad and they set a lot of the wages, good and bad, the other benefits that you get. For a lot of people it meant a lot of good travelling, homes in foreign countries, good wages, good salaries for some. All in all, it's very dynamic and you'd be surprised how small it really is with respect to manpower. In the exploration side I don't know if there are around the world,

100,000 people in the exploration side, in geologists and geophysicists. I don't think there's that many people. It's a very, very small fraternity. I would say the future looks good. I would say we have to keep graduating better and better geologists and geophysicists because they need better and better skills. It's much more difficult to find an oil field today than it was 30 years ago. The technology that the geophysicists use is something almost out of starboard compared to what it was 30 years ago. And obviously you need the technologists and the geophysicist to be able to master it and to use it properly. If you're the first with the new technology, you're the first to find a new field. That means that your company prospers and the other guys don't. And that means a promotion for you and not a promotion for the other people. It's very dynamic in that sense. I hope to goodness it always maintains its dynamic mode. I hope that governments don't interfere too much with it. It's not self-governing that people think it is, we're not self-governing, I think you need some direction from governments, absolutely you do. I'm sure that the industry has to contribute to the Gross National Product like any other industry. Where are you going to tax the industry, that's up to the government to decide, whether you're going to tax them on the production side or the consuming side. Obviously by taxing them on the production side, apparently to our present government it's politically desirable but maybe the rest of the country, probably tax them on the other side, on the consumer side. Well anyway, it doesn't matter which way it's taxed, the consumer pays in the long run. And that's something that we shouldn't probably talk about because it's government policy and they're the ones who decide what should be done. Anyway, it's an interesting industry, it's fascinating, it's dynamic and it's really a very progressive industry. In many areas it's very, very progressive. It's progressive in the refining side, it's progressive in the exploration side, it's progressive in the transportation side. But it needs a lot of money to run.

NM: Mr. Kanik, I've really enjoyed interviewing you, thank you very much.

SK: Thank you very much, I enjoyed it too.