

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Andy Baillie

INTERVIEWER: Susan Birley

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Susan: It's July 12, 1983. I'm at the home of Mr. Andrew Baillie in southwest Calgary and it's Susan Birley interviewing. Mr. Baillie, I wonder if first of all, we could start with your basic background, where you were born and raised and went to school.

Andy: Okay, surely, I was actually born in Scotland but came out to Canada at six months old, that's a long time ago, that's in 1913 to be exact. And we came to a small town in Manitoba called Foxhorn and I was raised in Foxhorn till I was 19. And came out of high school with my senior metric in the midst of the Depression and went to Winnipeg to Normal School and became a school teacher. And I was a school teacher in a rural school for 4 years in southern Manitoba. I taught 42 pupils, all grades. It was quite an organizational job. And then later, in Carmen, Manitoba, a larger town and a larger school and I taught there until 1940 when I joined the Air Force. I was five years in the Air Force serving in Canada, in connection with joint training program, and we were training and instructing Air Gunners and Air Bombers and Air Navigators. Then in the last part of the war I was overseas in Bomber command in ??? and while over there, in 1945, I began to get deaf and was sent home. In fact, the deafness had been deteriorating quite rapidly, so what I did when I came home I went to university for five years in Manitoba. And then did my doctorate down in Northwestern in Illinois, outside of Chicago. And it was there, while I was in Manitoba, I got involved in geology, taking geology and started doing surface work in Manitoba.

#023 Susan: How did you become interested in petroleum geology?

Andy: Well, I'd certainly like to tell that story because it involves four very good friends of mine, one of them has passed on, but the rest are living one in Vancouver and two in Calgary. When I was at university in Manitoba, which was a hard rock school and everybody was going into the mining business, but I wanted to get involved in the petroleum industry. I didn't know very much about it but I was working for the Manitoba Mines Branch and George Firnagle???, who was the Director of Mines in Manitoba, and had previously worked with Chevron in Calgary, I went to see him and asked him, because I was going deaf, possibly there would be no future for a person like myself in the oil business. So he told me, why don't you go to Calgary and find out. So we didn't have very much money in those days, I was on a DVA. . ., I think we got \$40 a month or something. And I got on the bus and came to Calgary and he gave me the name of three people. Joe Spivac, who is dead now, he worked for Mobil, was Exploration Manager with Mobil at the time. Ernie Shaw, who was Exploration Manager with Imperial at the

time, and Don Weir, Exploration Manager for Chevron at the time. And I came to Calgary and arranged an interview with these three people and they were very busy people at the time but all of them gave me ½ to ¾ or more time and talked to me about the oil industry and each one of them thought that I would have no problem if I chose to go that route. So I went home and told my wife that if all of the people in the oil business are as nice as these three people, that's the industry that I want to belong to. And I think many would agree with me that Joe Spivac, Ernie Shaw and Don Weir are three of the nicest guys that I've ever met in the oil patch. So I set my sights on going into the petroleum industry and got the job with the Manitoba government, mapping the Paleozoic outcrops in Manitoba. And this was in 1948 and in 1947, Leduc had been discovered and we knew it was Devonian and all we knew. . . , the relationship of the Devonian in Manitoba to the Devonian in Alberta. . . , no one knew anything about that. But there were a lot of outcrops in Manitoba, so I spent three summers working with the Manitoba Mines branch mapping the Devonian, Silurian??? and ??? in Manitoba. We worked mainly with canoes and trucks throughout Manitoba. I think during those three summers I slept in pretty near every motel or every hotel in rural Manitoba, particularly in the ??? Lake area.

#057 Susan: Excuse me, who were some of the other people in the field parties that were working with you?

Andy: One of my first assistants was Jerry Gantric??? who is now working for Esso in London. In fact, Jerry has worked in most parts of the world, in Marseilles, in France, in South America and in the Middle East and now he's in with their international group in London. Ted Jardine was another of my assistants and he lives in Calgary right now and following his graduation from Manitoba, he worked for Cominco. Bob Robertson went to South America, I'm not sure where he is now. These were small parties, just one assistant and myself. My professor was Ed Leath, a professor in Manitoba, he was well known in Manitoba and many parts of Canada. On that one surface party, Wilson Laird, who at the time was the State Geologist for North Dakota, he was working for Continental Oil and I met him in the field several times. Then I asked where I could go to do a doctorate degree and really get what I wanted ??? in the petroleum industry. So he didn't hesitate at all, he said, you go to Northwestern University. This is where the famous trios, Dr. Schloss, Dr. Crumbine and Dr. Dapples??? were promoting something which was called facees??? analysis or ??? facees??? mapping. So I went down to Northwestern for three years to get my doctorate. And this was a great experience because Dr. Schloss was my advisor and I think for the time, that was one of the best places in North America to go for that type of thing. While I was there Bill Crumbine, who was a consultant for Gulf Oil, he talked me into taking a job with Gulf Oil in Calgary. I should back up here a bit,

#083 Susan: When you were at Northwestern, what was your thesis topic?

Andy: Because Northwestern specialized in regional studies and I was fortunate enough to have had summer working in the Devonian on the outcrop and there were several wells had been drilled in Saskatchewan, North Dakota, and in parts of Montana in what is now called the Williston Basin, I undertook the job of doing, I suppose you would call it, a

Basin Analysis of the Williston Basin. And with the help of Larry Schloss, this turned out to be rather successful, because some of the stratigraphy that was set up in 1950 still holds to this day and many of the formations including the Asher?? formation, the Dawson Bay formation and Devonian???. The inter-lake formation of??? were named in this thesis. So it was. . . , this is what got me started in regional basin analysis which I'm still interested in. In fact, I now teach a course in Edmonton on modern basin analysis. My job. . . , coming to Calgary was quite an experience, in 1953 when the industry was really expanding. The reason I got the job is I was older than the average graduate and I had quite a bit of experience in surface work and sub-surface work and also had a fair degree of administrative experience based on my work experience during the war. So Gulf Oil Canada, it was called Canadian Gulf Oil at the time, they wanted to mount an extensive surface geology program, that would last for five years and they were going to study outcrops from the 49th parallel, all the way to the Arctic Ocean. The problem there was to recruit young geologists from across Canada, recruit party chiefs, mainly university professors from various part of Canada and run the logistics of this quite massive undertaking. It was quite successful, we worked for the five. . actually six years, ended up on the Arctic Ocean in about 1957, and we never had. . . , we used backpackers, we used Beaver Aircraft, in the later years we used helicopter and trucks and we never had an accident of any kind or lost any time on accidents which, I think, was quite a record. There are many interesting stories attached with that, some of the personnel involved. The Party Chiefs we recruited included, Dr. Collin Stearns, who is now a Professor of Geology at McGill, Dr. Gordon Winder, who was a Professor of Geology at Western Ontario and Dr. Sam Nelson, who is a Professor of Geology at University of Calgary. And another one, Bob Farvolden??? who was a junior assistant on one of our parties, he is now Dean of Science at Waterloo. So these people all were. . . , none of them had done very much work in the mountains, including myself, it was quite a learning process, but it's amazing how well these parties did their job and today I'm quite proud of some of those reports, which are in Gulf Oil files. They can be read and even today they read well and they've been used as references and are still a valid type of reference.

#130 Susan: Were you mapping mostly surface geology?

Andy: It was surface geology, concentrating on the Paleozoic and the Devonian and what we would do, we would measure stratigraphic sections and space maybe, every 20 or 30 miles, and put those together and try and get some sort of a regional framework and relate it to the sub-surface. In fact Collin Stearns party, when he was working in the Hummingbird area and saw those great reef, off-reef transitions, he came out with a report that even to this day shows exactly the same breaks in the stratigraphic section that they use. . . I'm quite proud of that and Collin Stearns did an excellent job at that.

#141 Susan: Were you using a lot of seismic in your parties or was that done by someone else?

Andy: Oh, this was before seismic.

Susan: Oh, really.

Andy: Very little seismic was done back in there, the only seismic we had of course, was in the sub-surface. It was strictly surface party work and to try and see, for instance the reef, off-reef transition, and anything that would help us interpret the sub-surface better. In Alberta we used backpackers and there's many, many colourful stories about these very colourful and competent people. And I'd like to recount two in particular. One is Rex Logan, who now lives in Sundre and he had one of the parties up on the Smoky River. Now the Smoky River is a very, very, wild and bad river, which you can cross, if you know what you're doing, with horses. However, what the packer knows and what the Party Chief didn't know, that this river will rise several feet in the afternoon, when the sun melts the snow packed mountain and early in the morning, it's a lot lower and that's the best time to cross it. So this party got to the Smoky River and made camp and the Party Chief was anxious to get started across the river right away. But Rex said no, I want to reconnoitre, so he spent the better part of a day, riding up and down the river and waiting. So finally a day and ½ later, decided to cross and where to cross and they crossed quite safely. However, the Party Chief was very annoyed with that and wrote me a letter saying that this Rex Logan had held him up for two days, not crossing the river when he wanted to. So I got a letter back to Collin saying that there's half a dozen or more geologists had been drowned in that river and you cross the river when the packer says so. So that was quite an interesting story and one other story with that same packer, same group, they were out in the Hummingbird area and a horse jumped on the packer and crushed his chest. There was no way of getting him out, so one of the other packers rode out to Saskatchewan River Crossing and got a phone call into me. It was Sunday morning, early. So I didn't know what to do but I rented a little aircraft and had him fly us up to the scene. And we flew up there and we spotted them in this valley, up above Kootenay Plain but the pilot said, there's no way we can land an aircraft in that valley. So I dropped a note to them in a little can and the Party Chief shook his fist at me because he was quite desperate with this packer with the broken chest. But the story got around at the airport and the navy were training pilots in the area, so they flew out and sized up the situation and landed there, left the co-pilot on the ground and flew the packer into the hospital. Then we were stuck there with, not a badly wounded packer out there but a navy co-pilot. So I went back to these people that we rented the aircraft from and said, look, they landed there, can't you land there. And they said, well, if they can do it, we can do it. So he flew in again, landed and picked up the pilot and that was the end of that story. Another packer, very colourful packer, Jack Hargraves. Jack Hargraves is the father of Gordon Hargraves, a well known oilman in Calgary. Jack was a very, very colourful character. I got to know him pretty well and I remember each year. . . , big companies have to have big companies, three copies and so on, signed, sealed and delivered. So one day Jack came in, in the spring, to sign the contract and we were quite busy. So I welcomed Jack and I said, okay, let's get the contract signed. So Jack says, just a minute, sport, I want to set and visit awhile. I said, okay, Jack, and so for an hour we sat and talked about packing and so on, and horses and places he had been, and then finally got around to signing the contract. Jack was a very, very colourful character and a good personal friend of mine. I've told that story to Gordon Hargraves and he says, yes, that's

my dad.

#202 Susan: I understand that you continued with your flying when you were working for Gulf. Would you like to recount some of your experiences with that?

Andy: Well, the bush pilot and the Beaver aircraft I guess, were the most important two things that opened up the North. Always in the North, away from the Rocky Mountains, when we got north into the Territories and northeastern B.C. the main support was a Beaver aircraft. Which was a terrifically built aircraft and some of them are still in service. The Beaver aircraft was designed. . . , deHaviland Aircraft Co. went and interviewed many, many bush pilots before they designed that aircraft. It had to be something to be large enough to put in 45 gallon drums of gas, the doors had to be that wide and a short take-off and so on. So it was quite an aircraft, very reliable type of aircraft. And it had to be reliable because a lot of the flying we did. . . , it was all done on floats, but very, very dry country. Sometimes we went for an hour or two flying over mountain ranges with no sign of water at all. The sound of that motor ticking along sounded very comforting because you listened to every revolution as it were. Besides the aircraft, the Beaver pilots, the bush pilots, they were great people and there were some good ones and there were some bad ones and we had quite a few experiences with the Beaver aircraft. One in particular concerns J. C. Sproule, who is a well known legend in the oil industry. And he was exploring. . . , had surface parties out at the same time as we did, and in the same areas. And in the spring of 1953, Cam Sproule went to Associated Airways and contracted a Beaver aircraft to put their party into a very small lake near Caqua???, along near the Caqua River. So the people told Cam Sproule. . . , the aircraft people said, well we can get you in there but when it's time to come out, we won't have any Beaver aircraft around Edmonton at all and I don't know how you'll get out. But Cam Sproule, he was a real optimist, he didn't worry, he said, well, we'll cross that bridge when we come to it, let's not worry about that. So they put the party in. And later on, about six weeks later, when we had that same Beaver up at Fort Nelson and we got this panic call. . . , or I got the call from Cam Sproule. Could we use your aircraft to get this party out, they're starving in there and I don't know what I can do, I'll have to hire a big expensive ehlicopter in order to get food into them. So I told Cam, I said, well yes, we'd be happy to do that and I was up at Fort Nelson at the time. And one of the problems was, we had a pilot who was. . . , he wasn't really a real bush pilot and he was a little frightened of the river and he'd take off. . . Taking a Beaver aircraft off in a lake is one thing but taking it off in a swift flowing river is something different. And in the Fort Nelson River running by Fort Nelson, the logs were coming down, there were many, many logs, and he was reluctant to fly that aircraft anywhere, so we were sitting there idle. So I phoned into Associated Airways and I said, yes Sproule can use our aircraft but this pilot won't fly it out of there. So Vern Simmons, who was the Operations Manager for Associated Airways, he flew up to Fort Nelson. And we drove out from the town, 13 miles out to the take-off point and we could see the logs coming down the river. And the Beaver aircraft was listing a little, so Vern sized up ????. The first thing he did was pump out one of the pontoons which had been leaking and then he started it up and he zig-zagged his way

through those logs and took off and rescued Cam Sproule's outfit from the Twin Lakes near Caqua and had the aircraft back that night. We had one or two other experiences with Cam Sproule with the same type of thing. Cam was quite an aggressive type of outcrop man and typical optimistic oilman. But there's many Beaver aircraft stories and I won't recount them all. One of the problems was some of these pilots. . ., this one particular pilot one year that we had was so tense when he flew, he was what we called a real white knuckle pilot and a bush pilot, when he flies, he has to be quite relaxed and looking at the ground points so he knows where he is and so on. We found this fellow, he was so intent on keeping that airplane flying that he glued his eyes to the instruments, consequently he got lost all the time. And we've been lost many, many times. However geologists are in the air are very seldom lost because they're always looking at the landmarks and they knew where this mountain range and that mountain range was. So we had many, many bad experiences with that particular pilot. Incidentally, he's not living any more, he crashed down in New Brunswick, he actually shouldn't have been flying, he wasn't a bush pilot type at all. Some of them are so relaxed and good flyers but this fellow was so tense that he was just heading for an accident. There's quite a few stories, I'll recount one or two more. One, I suppose, is a good one, when we got up flying out of Iklavik. One time we were flying east of Iklavik to a place called the Smoking Hills, this is up right on the Arctic Coast. These hills have been smoking, actually it's a burning oil shale, for hundreds of years. And I didn't know and very few people know, just what it was that was burning. So I asked the pilot, could you land on the ocean, just right where the shales were burning, and he said, oh yes. And the ocean looked just as smooth as a mill pond. But the wind had been blowing for the three days previous, in fact we had been stormed on there and he came down for a landing on this smooth surface, and we hit the top of a swell, it must have been a 30 foot swell. And we bounce I bet, 100 or 200 feet and we came down again and we bounced again and then he was able to throttle the aircraft up and take off. Well, he said, I can't land there, I said, ??? Well we did finally land in around behind in a little lake and we were able to look at this, see what was burning. Actually it's a type of oil shale I guess, and part of it is some of the source rock that's providing the oil that's being found in the Tuk peninsula and the Arctic Coast. Stories with the backpackers, this was before the helicopter days, we had several Indian backpackers which had been imported from Fort St. John. Tommy Wild, who was the outfitter in Fort St. John, supplied these Indian backpackers, whose previous job had been working on geophysical crews. And they were well fed on fresh meat and so on. Now they met our transport out to Nahani??? Butte, where we were stationed, to run this river boat and also to pack the food in to the surface party. Well they used to eat about their weight in food, so it was a real logistics problem to get any food into our surface party.

#337 Susan: Did you ever hunt for your meat while you were out in the field?

Andy: Well, you're not supposed to. But I can say that caribou meat is the most delightful wild game I have ever tasted. And caribou tongue is a real delicacy and I have had that only once, actually you weren't supposed to hunt the wild game. But the Indians could and there was lots of sheep and lots of caribou, lots of everything up there, but no

we transported our meat from Edmonton, flew it up to Fort Nelson and then by Beaver into the closest point. And in order to keep that food, our expediter on the party, he decided to get a propane fridge and we had a big kitchen type fridge run by propane and flew it up there and this seemed rather ridiculous but we were able to keep our meat . . . , we had fresh meat more than any other party around up there just because. . . .

Tape ended.

Tape 1 Side 2

Andy: Talking about the refrigerator, we've all heard stories about selling refrigerators to Eskimos. Well actually I don't think we sold it actually to an Eskimo, but we did sell that refrigerator to Indians north of the Arctic Circle. ??? . . . it was a good reliable fridge and was still going quite strong.

#007 Susan: Did you ever use things like Bombardiers or were they around at that time. . . , or sort of all terrain vehicles?

Andy: No. Back south, when we came back south again, the main vehicle was the old

Dodge power wagon. This was possibly one of the most used vehicles of the seismic crew. Every large company had Dodge power wagons. So we used two or three of those, very reliable type of equipment. What the Beaver aircraft did to the lake country, I think the Dodge power wagon did to the mountains, because it would go up roads like nothing else. We did try another vehicles because down in the Fernie basin, in southeastern B.C., it was so forested, and there's no trails for horses, we got these little ??? and we tried to use those off the trails but there was just so much dead fall you'd have to cut your way through so The Dodge power wagon and sometimes four wheel drive were the main vehicles down south and nothing like the Bombardier, no. This was particularly in the summer. Then later of course, when the helicopter came, that changed the picture all together. We were able to do twice the work in half the time and get to inaccessible places. As we moved farther north and got up nearer to the Arctic Ocean, we moved our base from Nahani Butte and moved it up to Iklavik and it's interesting that yesterday or today, is the 25th anniversary of the new town, Inuvik up there. But in 1953 and up until '57, there was no Inuvik and Iklavik was the main base. It's built right on a point bar actually on the McKenzie Delta, a little arm on the McKenzie, right in the mud and it wasn't a good place for a town but the reason it was there was that's where the muskrats were and all the Indians trapped muskrats. And there was a Hudson Bay trading post there and there was a mission and the mounted police. And then it was the Eskimos with their boats from Sacks Harbour, they used to come in there to trade at the Hudson Bay. There was a hotel in Iklavik and I'd stayed in that hotel the odd time. It's quite interesting, a little two story hotel called the Iklavik Hotel. And it had indoor toilets but on the second floor, the room with the toilet doubled as the laundry. And if you wanted to go to the toilet there'd be a girl in there doing the laundry and she would ask you, do you want to

go to the toilet and you'd say yes, so she'd step outside while you went to the toilet. It was quite a chummy arrangement. Quite a colourful place and because in the summer time, it's daylight 24 hours a day, the hotel, or the lounge, I guess you'd call it, would be open 24 hours a day and the Eskimos would all come in and spend the evening there watching . . . the Eskimo women and their children would sit there watching the shenanigans at the bar. But it wasn't a place. . . , any development in Aklavik was just impossible. There was no sewage, the sewage was actually open ditches along the side of the road and the people didn't want to move over to the new town but they knew this expansion was coming. And there was no way they could have ??? Aklavik. Incidentally Aklavik is still going strong, I imagine with the same population that it had then. But Inuvik, the new town, wasn't called Inuvik in those days, it was called T3??? and we heard the rumour that, that's where the new town was going to be because there was material there for an airport and there was lots of gravel??? and the government built a town there. It now, is quite a thriving town, 25 years old. I said earlier that we didn't have any serious accidents, but we almost had one very serious one. This happened in one of our surface parties, we were up in the Handy??? River and on a side stream which was what we geologist call a graded stream, where in ordinary times, the stream is only maybe a few yards across and surrounded by gravel banks on both sides. And we had this party, the Party Chief was Walter Wegimore???, a ??? geologist, and we had three other geologists with him and the boatman and one other. And they were working along this stream and camped on the gravel, about several yards from this stream. Well, this is a no-no, because it means at any given time, that gravel could be covered with water, in a flash flood. But it was the only thing to do I guess, because the nearest bush, or the nearest island that he could have camped on was quite a ways away. So they camped there. During the night, he got up about 3:00 in the morning and something was disturbing him and he didn't know what it was. So he went back in his tent and laid awake, and gradually began to hear this noise, louder and louder. So he got up again and got out of the tent and realized what was happening, there had been a severe rainstorm, a cloudburst about 50 or 75 miles away and this was one of these flash floods. So he alerted the crew, and they all got up and got the tents out and by the time they finally got everything in the boat and downstream, they were up to their waist in water and I'm sure that if Walter wasn't awake and alerted the crew that we could have lost that whole camp.

During that same summer, and not too far from there, over in the ??? Plain, Willie Norris, a geologist with the Geological Survey of Canada was working with another person in the same situation and they were camped on an island in one of these gravel streams, and they had a flash flood. They had a little raft, they didn't have a boat. They figured that they could make it to shore and they tried with this raft to pole it to the main shore and they got to shore and Willie was able to jump to shore. The other geologist was less fortunate, didn't jump and was lost and to my knowledge, he was lost in the river and hasn't been found since. So the moral of that is when you get these graded streams, remember that small little stream that you look at is a very, very temporary thing. It can grow into a real raging torrent in a matter of minutes. Another person I'd like to mention that has to do with Aklavik. At Aklavik, CP Air had an airport, a tiny little building about

10 by 12 feet, just a little ???, I suppose. They had a bit of a schedule, they had an Otter aircraft which, once a day, picked up passengers at Aklavik and took them down to Norman Wells, which was a major point, then down to Fort Nelson and back to Edmonton. So I was at this airport this morning, it was about 6:30 in the morning and really raining, a bad morning. What I had was a university professor from Toronto, I had him up there, he was on a retainer with Gulf Oil and he was looking at some of the structure that we saw. There was some complicated structure and he was a specialist in that. So we were standing in this little airport, with one or two other passengers, when in bustled two people, very, very young and aggressive looking and they looked around. Time was passed, it was after 7:30 and this fellow came along to me and he said, when's this aircraft come, so I said, I don't know, you have to take your chances up here. And so we got to talking, and I told the fellow that I was working for Gulf Oil, we were in the petroleum business, looking at prospects up here. And he told me who he was, he says, I am Peter Bawden and I have a drilling rig and I feel this north country has great potential, so I have come down the river, down the McKenzie River in a boat. I think he came from Fort Nelson all the way up to Tuk-Tuk and then he was flying back. He said, I feel this country has potential . . . , and well now, everyone's heard of the Bawden Drilling Outfit, he has rigs around the world. This is quite an interesting story and an interesting meeting with Peter Bawden, who was very, very business like, even in the little airport. . . , the Canadian Pacific Airport.

#110 Susan: What kind of developments came out of all the surface work that you were doing with Gulf?

Andy: As I said, we had done work from the 49th parallel right up to the Arctic Ocean

and the first play we made out of it all was, what we call the McKenzie Delta play. Based on surface geology alone, there was no wells up there, there was no seismic, there was no gravity, no ???, there was nothing to go on except our gut feeling I suppose, and surface work in ??? mountain. And we had some pretty smart geologists working on this and one of them was Jack Martin. He is a consultant in Calgary now, and he was a student and we sponsored him to Northwestern to work up. . . , based on his regional studies, this northern ??? And as he worked this up and as we discussed several times, along with Larry Schloss, we came to the opinion that there was a big wedge, a clastic??? wedge of sediment, where the present day McKenzie Delta is. And one of the clues to that was given to us by a person called Dr. George Giletsky???. He's a well known paleontologist/geologist of the Geological Survey. And he was working up on the McKenzie Delta with just himself and an Eskimo and a canoe. So we met George up there and we took him up in our Beaver aircraft and gave him a flight over the whole Delta and as you flew north along the ??? mountains you could see that the sediments were getting thicker and thicker and thicker as you moved north. So I asked George, how thick do those cretaceous sediments get when you move north and he said, hellishly thick. And that was one of the clues, because they did. Out of that surface work and without, as I say, any geophysics or any other thing than that, we postulated that there would be a

thick wedge of cretaceous and tertiary sediment and we said up to 40,000 feet thick. So we put this together in a report and tried to sell it to our management and management asked us a lot of searching questions. One was why, after doing all that work, from the 49th parallel to the Arctic Ocean, why do you pick this, the hardest, the most remotest away. So I said, well it's because it's the best. So anyway our company did buy that. They called it their one no man's play and they retook 3,000,000 acres up there which was quite a startling thing in the industry because very many told me on the street after that, you're out of your mind and others said, there's only a thin veneer overface, and even I think, within our own company there were some doubts that this wasn't a very good play. However shortly after that, Imperial Oil took out 14,000,000 acres surrounding that 3,000,000 acres right out into the Beaufort Sea and Shell Oil took out several million acres in the McKenzie Delta proper. So one of the questions that is asked when you make a play is where is the smart money because we were all alone up there. So we had to think to ourselves, well we might be the smart money this time. Anyway, carrying on, we did aero??? work, that's a cheap, very important regional tool and it indicated that the basement, just some 35 miles north of Inuvik, would have 35 or 40,000 feet of sediment. This was tremendous thickness when you think that at Inuvik, pre-Cambrian outcrops at the airport and within a distance of about 35 miles, there's a wedge of sediment going from practically zero to 40,000 feet. ??? Then gravity surveys showed us that there were certain down to the basin faults in there which is always typical of deltas and then finally we did seismic which showed us. . . , actually verified what we had originally thought. So the three companies got together, Imperial, Shell and Gulf and pooled some acreage and drilled the first well, called it Reindeer D27???. And they drilled that well to about 12,000 feet and never got out of unconsolidated tertiary sediment. Then another story, connected to that, no one believed that there was any tertiary there. But we had a young micro-palaeontologist, Nino Patraca??? and he did the palaeontology there and he found fossil down around 10,000 feet that he said were tertiary. But no one believed it, the Geological Survey of Canada said, no, there can't be tertiary there. So I went down to Ottawa to see George Seletski and I said, why can't there be tertiary there. Well ??? said there shouldn't be any tertiary there, but anyway, now we know that there's lots of tertiary there, in fact ??? Oil Field is from tertiary sediment. So ??? from then on, because they drilled several wells in that ancient delta, you've got gas discoveries at Parsons Lake, discovered by Gulf, with about 3-5 trillion cubic feet of gas. And Esso discovered Pagloo??? with five or six trillion feet of gas and since then, out in the Beaufort Sea, Dome, Imperial and Gulf have made oil discoveries, so that the McKenzie Delta, that ancient delta is real and I'm sure has ??? prospects. So I feel that our work in the north was fully justified and I think that when the story is finally told, the McKenzie Delta and the Beaufort Sea will contribute quite a bit to Canada's energy self-sufficiency. One other aspect of that, was that while we were working in the Arctic, Mobil Oil was working off the East Coast and they had taken an ??? acreage position on the East Coast and they had nothing in the McKenzie Delta. So they got to talking and they made a trade. We gave Mobil 25% of our interest in the McKenzie Delta in return for 25% of their interest in the Nova Scotia shelf. And we used to argue as to who got the better of the deal and I say,

that they jury is still out and we won't know for quite some time who got the better of the deal. I think it was a good deal for both because that means major companies are now both in a position, both in the McKenzie Delta/ Beaufort and the East Coast. So that's the McKenzie Delta story. I should mention here, and J.C. Sproule comes up again, in the origins of Pan-Arctic. J. C. Sproule, after they finished their surface work on the mainland, they moved into the Arctic Islands and did surface work there. And on the face of it, surface work in the Arctic Islands really points to the great potential, petroleum wise, that the Arctic Islands have, both in the Paleozoic on the ??? and the ??? basin itself. So J. C. Sproule had that vision and wanted to explore it but it was just too much money for any one company. So he put together a proposition and wanted to set up a consortium of major companies, who would pool their money and form Pan-Arctic. So he circulated this brochure all written up with the geology and the prospects and quite optimistically written and circulated through the major companies. But that crossed my desk and other desks in Gulf and all the big companies. The problem with the proposition was, all Cam Sproule wanted from these major companies was their money, and backing and not their expertise. He was going to provide the expertise. So each of us thought, well look, we're just as good geologically. . . , had as good geological minds as Sproule did, so the play was turned down by all the companies. But that didn't stop Cam Sproule, Cam Sproule then went to the federal government and to a host of small companies and between the federal government and the host of small companies did raise the money. And that's how Pan-Arctic was born, so they made that original play without the help of any major company. Now Gulf Oil got involved in that Pan-Arctic deal by virtue of a farm-out from Global Marine. All the land they discussed in the Pan-Arctic deal was on the Islands but the ocean there is very, very shallow so that the offshore acreage is just as prospective as the onshore acreage. And Global Marine had apparently leased or taken out a lot of that offshore acreage which they farmed out to Gulf, so that's how Gulf got into the Arctic play. And we know that Pan-Arctic is still going strong and the prospects for the Arctic Islands look pretty good.

ends at #250

Tape 2 Side 1

Susan: It's August 30th, 1983. Susan Birley interviewing Andy Baillie at his home in Calgary. Dr. Baillie, I wonder if we could just go back to the work that you were doing in the north for Gulf. I understand that the climate and the geography posed a number of problems with transportation and communication. I wonder if you'd just like to go through some of those problems that you had in those areas.

Andy: Yes, Susan. Nowadays with a helicopter, anywhere in the world, it's not much of a problem. You can get practically anywhere at any time, weather permitting. However, in the early 50's, and I expect the helicopters just started. . . , there were a few helicopters being used, started in about '54 I suppose. But before the helicopter we had to depend on boats in the north, boats, canoes and of course, the Beaver aircraft and farther south we had the pack trains. A pack train consists of about twenty horses and about three packers. But in the north, I guess, the main principal mode of transportation was the Beaver aircraft and it was built by DeHaviland, it was a real. . . , one of the best bush aircraft that ever were designed or built. In fact I think they are still operating in many parts of the world and this was really a plus. Now the Otter is an improvement on that but the bigger aircraft is more expensive. But the Beaver aircraft was really the main transportation aircraft in the north. And it was designed by DeHaviland after questionnaires or interviews they had with many, many bush pilots, and based on what the bush pilots, they designed this aircraft and some of the features were that it had to have a short take off and short landing distance because they're taking off from very, very small lakes and small rivers and also fast take off with a good lift because often those lakes were sitting right down in. . . , surrounded by mountains as it were, and sometimes a pilot would take off and just would clear the treetops and the mountaintop. Another thing that they wanted was that it had to be big enough that you could put a 45 gallon drum of gasoline in the door, so if you're familiar with a Beaver aircraft, they have very, very wide doors and it's amazing how you could load that thing up. It was a real work horse. So with the Beaver aircraft and a good pilot, it's just amazing what you could do and where you could go. But pilots. . . , the bush pilot, was another feature of the north and so much depended on both the aircraft and more particularly the pilot. And there were good ones and there were indifferent ones and there were a few bad ones but the bad ones didn't last too long. Both, they didn't fit in there, and sometimes they didn't last because they did the wrong thing at the wrong time. Some oil companies used to have their own pilots and as a pilot, they got older or crustier or incompatible with the Party Chief, often this could cause problems. And if he was a company employee there was nothing you could do about it. Other companies would lease their aircraft and get their pilot by arrangement and then this ensured you that you got a pilot that was really compatible. I can remember some really

dandy pilots we got from Associated Airways and then one or two that didn't work out so well. And one of the problems was, this one particular pilot, he was what we call a white knuckle pilot, and he would be so obsessed with keeping that airplane in the air that he's be watching his instruments all the time and gripping the wheel, when actually a bush pilot, he keeps his eyes open around him, looking where he is, so there's no navigation aids other than just ground contact. So a good bush pilot knows where he is on the ground all the time. But this particular one, he was so. . . , looking at his instruments so much, he would get lost, time after time after time. I think we had been lost maybe a dozen times when the geologist would have to tell him where he was because a geologist, he was up there making contact with the ground. But anyway, there are many, many stories, I won't go into them here, but if you had a good pilot that you could trust, it was just amazing where you could go. So in the north along with the Beaver aircraft, they had to have some sort of water transportation and particularly in the 50's along the McKenzie, and the Nahani, we had to have some sort of a boat and a barge. A boat, it was more than a river boat, maybe 20-25 feet long and a barge to carry the fuel for the aircraft and so on. And one problem that my management in Gulf couldn't understand is that when in 1953, when we started exploring in the Nahani, ??? River country, we had to have a boat. And the only boat and boatman available up there was taken over, Imperial had it and I think also, Mobil or Hudson Bay had the other boat and the other boatman. So we had the person we wanted to run this boat, his name was Gus Krauss, who lived right on the Nahani River, he was quite an old timer, old trapper, philosopher type. But he didn't have an adequate boat, so we made a deal with him that we would build a boat in Fort St. John and give it to Gus Krauss and then he would supply us with transportation for the two or three years that we needed it and then with the completion of that, he would own the boat. So my management in Gulf couldn't understand that we were going to build a boat, it was going to cost \$4,500, give it to this man, and they just couldn't understand that, the accountants, they threw up their hands. But we prevailed on them, this is the only way we can operate so they gave in to us and we got, I think it was Streeper??? Brothers, to build this boat to our specifications and to Gus Krauss' specifications and the barge and take it up the Nelson River, the Liard??? River to Nahani and turn it over to Gus Krauss. As I remember, there was nothing on paper at all about that transaction, that's the way you did things up there, just a handshake or word of mouth, and now in retrospect, I'm amazed that the company went along and did that type of thing, but to my knowledge, Gus Krauss never had a piece of paper to say what we were going to do. He just trusted us and of course, we trusted him. So that boat did serve us for several years, and it was powerful enough, I think it had about two 25 horse motors on the rear and it really worked.

#082 Susan: Was that the base of your operation. . . ?

Andy: Yes. The reason for the boat was that you would camp, or you would have your base camp at various places along the river. For instance, one I remember was just north of Fort Norman on the McKenzie at Bear Rock, and we'd leave the tents on shore but the boat and the provisions and so on was the main. . . , supplied by the Beaver aircraft of course. . . , so the boat became your camp on shore in many places. And we took that boat

all the way up to, I forget if we got as far as Aklavik with that boat or not. . . , yes we did, we did. So that boat became our base for about three years. Besides that, for the Nahani River itself, they had smaller boats, river boats and they were specially designed smaller boats, the Nahani is a very rough river. I see now people go down there in rafts and so on, but when we were up there, there was nothing of that nature, very few people had been in there. And there was many weird stories about the Nahani, of course, Deadman's Valley was where many trappers had been in there, and through some accident had lost their lives in there. And there was legends got up that this was inhabited by people or renegade or something because several trappers were found without their heads. That's where the name, the Valley of Headless Man. . . , well, the story is, if a trapper is killed up there, the wolverines, they come and they'll just eat what's exposed and the head was exposed and that's why they found these people without heads. And there are hot springs so there was legends about a tropical valley up in the Nahani. Well I've seen the hot springs and it's a beautiful place but it certainly isn't a tropical valley. Another aspect of field geology are the cooks and just like pilots, there are good ones and bad ones and so-so ones. But a good cook in a field camp becomes very, very important. It's just amazing what those people can. . . , the food that those people can turn out with just very, very antiquated camp stoves. . . , and baking bread as good as you get out of McGavins in their little reflector type ovens. And even their bannock tasted pretty good. So the cooks, generally they were hired locally and generally in the winter they'd have nothing to do and sit around, say Fort Nelson, or Fort St. John in the beer parlour and so on. Come spring, you'd make your deal with the cook and sometimes literally pick him out of the beer parlour, put him on your aircraft and fly him up north and that's maybe the last drink he would have until he got back in the fall. But I think the key people around a field camp like that is the pilot and the cook and of course, the Party Chief. . . . and the food. Another thing about food, you would never feed them stew up there, because it cost about maybe \$2 a pound to send anything up there, so there's no use sending stew at \$2 a pound transportation so you might as well eat steak. So really they ate pretty well, if you had access by the Beaver, but sometimes where it was more remote, dried fruit and canned beef, bully beef if you like, canned chicken and so on and they got pretty sick of that, dried fruit particularly, dried potatoes and sometimes powdered eggs.

#130 Susan: While you were working for Gulf, you were involved in the technical recruiting of personnel. Would you like to just mention a bit about that?

Andy: Yes, in the expansion of the oil industry, say from 1950 on, there was a really

increasing demand for geologists and geophysicists and engineers. Before the 50's, young geologists, taking geology during their undergraduate years would get their training, field training, a very, very important aspect of any geologists training through the Geological Survey of Canada. And most young graduates would have one or two years field experience with the Geological Survey. However in the increased enrollments in the 50's, then GSE couldn't accommodate those people. However, the oil industry started doing really expansive field programs and were able to hire. . . , sometimes, I know Gulf at one

time, we had 35 summer students in the field and Shell the same and Amoco probably the same and Imperial the same. So that meant that there would be every summer, there would be 100 or so, young geologist getting their field training with oil companies. This was a good deal for the students and a good deal for the company. The student, he got all his transportation paid, he got a good salary and in most cases, really good stratigraphic type or structural type experience. It was a good deal for the companies too because they'd hire these young fellows and this gave them a chance to look them over, so that when it came to recruiting permanently you'd be able to choose people that you'd had work for you before. So that was the summer program and for the permanent employees, there was a real competition between the companies for getting the best students. Not necessarily the best students in term of their academic grades, because sometimes a straight A student wasn't the type of person. . . wasn't as good a petroleum geologist. Some of the less than straight A's had other attributes. But anyway, oil companies would send recruiting teams across Canada and I think at that time, there were 23 degree granting universities in Canada and I know Gulf's program involved visiting at least 20 of those every year. So this gave a chance for the recruiter to get on the campus, get to know what was going on in universities and also to get to know the professors, the programs and the students. And at the same token, it also gave the university people a chance to see what type of people were involved in the oil industry because in the 50's there, there was a lot . . . between the academia and the industry. . . I mean the academia feel that the oil business, they weren't too scientific. However, this recruiting program, the result of it was that each year, companies, say the size of Gulf, would hire maybe, 15 or 20 permanent students and Shell the same and the other companies, so that there was a market for possible 150 or more graduates every year. And that market was there and that was about the rate of expansion. Now one of the problems was attrition because the smaller companies, they didn't do recruiting, they would wait until the larger companies had trained the geologist and after 3 or 4 years, they'd offer him a higher salary or a chance to do a different job, a more challenging job and there was quite a bit of attrition. And sometimes you might recruit or hire 20 in a year but you might lose 15 or so to the smaller companies. So there was quite a competition between the companies for getting the right type of people and also to try and protect your own, the people that you had trained. So besides the recruiting, you get these young people out of university and you had to have training programs and the large companies really, in my view, did an excellent job of training their young geologists and geophysicists. They had real sophisticated training programs. Such companies as Amoco, Imperial, Shell and Gulf had excellent training programs and over a period of say, two years or at best three years, they'd try and give that young graduate a look at all aspects of the industry. So that at the end of two or three years he could call himself a petroleum geologist. And as I said before, that's the time the small companies would move in and try to hire them away. Most companies would have a Director or a Coordinator of Training and it was quite an elaborate set-up, field trips, courses and they did a lot of courses in-house, but also brought in a lot of competent university professors to teach and so on. So I think Canadian petroleum geologists are as well trained as any in the world. I know in Gulf Oil

Corporation, operating out of Pittsburgh, used to, the odd time, get Canadian geologists from Gulf and always were quite impressed with how good they were in comparison with people from other parts of the world. A fact of which we were very proud. And still today, the training program is an important part of the development of young geologists and all the companies have spent considerable amounts of money and time on training their young geologists. I think possibly, our training programs in the petroleum industry are as good as any industry you can find anywhere.

#217 Susan: So for the most part, you are talking about under-graduate degrees, what about geologists with advanced degrees. How did that tie in?

Andy: That's a good question, because in my view, and I wrote a paper on this some years ago, it was entitled, The Petroleum Geologist, Technician or Scientist. And in my view, and this is based on considerable experience and observation of young graduates in the petroleum industry, I feel that the undergraduate training, which is essentially a 4 year course after senior matric, is such a crowded curriculum, that the graduate of today doesn't get too much chance to put it all together, to synthesize what he has learned in the various facets of his training. He learns structural geology, stratigraphy, chemistry, mathematics and so on, all as isolated fragments of his program, but a petroleum geologist is a little bit of all of these things and what he doesn't learn in school is how to use what he has learned in one course and apply it to something he has learned in another course. Whereas I feel that a Masters degree gives you that extra year or two, where you do a piece of research and you put it all together and you do a scientific piece of work, where you integrate or synthesize all the various disciplines that you have. I think you will find that the conceptual type of geologist, which is what you need in exploration is one who is either an exceptional type of person or one who has taken a Masters degree and has made some statements on his own that he didn't get out of books and has the courage and the confidence to go out on a limb and do some prediction. And I think this is very, very important and can best be done by taking that Masters degree. Right now, this recession we're going through in '83 has its bright spots because now the graduate schools are crowded and more and more people are going back with their undergraduate training, can't get a job and are electing to do their Masters degree. And I'm sure that there'll be a pay off there, that when things turn around again, coming on the market are going to be a lot of these geologists with their Masters degree, and in my view, better equipped to handle the conceptual aspect of exploration. And I think that'll be good.

#262 Susan: I was just wondering, how do you feel about going on further to a PhD, do you think that's an advantage?

Andy: Well, it takes one to know one. I have a PhD and when I'm interviewing a PhD, I'm very, very wary, because some PhD's have spent maybe 3, 4, 5 years at a specialty aspect and they become so wrapped up in it and so centred on that piece of research, admittedly it could be a terrific piece of work and are frightened to get away beyond that . . . , their area of expertise. And oil man geologist has to be a generalist and often PhD thinks of himself as being a specialist. And what he has to do is to put that in the

background as it were, and learn the other aspects of it, to keep the generalist concept. Another aspect of a PhD, often your management are not PhD's and they wonder about this fellow, particularly if he wears his PhD on his sleeve, because often PhD's have a tendency to, not purposely. . . , but talk down to you and that turns an oil man off sometimes. So PhD's have their place in the industry but with those points that I made. And they must remember that they've got to be generalist rather than specialists. There is room in the labs of the industry and all the big companies have research labs where they hire PhD's and specialists to do specialist jobs. But these aren't the explorationalists. The oil is found by that generalist that's working in operations, not in the back room.

#295 Susan: During your career, you've had a lot of involvement with different societies and served on various committees. Would you like to mention some of your work with those?

Andy: Yes, I would because I feel that the contribution that the petroleum industry has made by virtue of these committees to both government and academia has been considerable. I was fortunate with Gulf because in my position, as involved with research and training and recruiting, it was part of my job to keep up with the type of research that was going on in government and in universities and the type of research the graduate students were doing. And by virtue of my recruiting experience, I was able to visit in universities across Canada and I think that pretty near every university that grants degrees in Canada, I have visited at least two or three times, which gives you a real feel for what is going on in academia. However, one thing I want to mention. In the early 50's, the credibility of the oil man was really low as far academia was concerned. I think the academics were kind of suspicious of these oil men, a lot of them who had come up from the States. They didn't know us and they didn't understand us. So it took years really, to have them gain any confidence in the scientific capabilities of the petroleum geology. And there's still pockets of resistance, in fact one story that I tell that makes me quite annoyed, it's only two years ago, when I was talking to the President of the Geological Association of Canada and saying that there weren't too many people that were attending this particular convention from the oil patch. And he says, oh those oil men, all they do is look at elochs???. I heard that statement twenty years ago and it annoyed me then but when you hear it in the 80's it annoys me much more because the oil people do a lot of scientific work and I think that in general academia realize that. When you get such people as Bill Gusseaux???, Ted Link, Jack Webb, Bill Landis of Imperial, Don Wier of Cal Standard, Ernie Shaw of Imperial, Bert Ballie with Shell, Clint Dalstron with Chevron and many other. These are as good scientifically as any you find in academia. So gradually in the late 50's, our credibility improved and this could be noted because we were gradually asked to serve on various types of committees and advisory committees. And now if you look at the make-up of advisory committees in academia and in government you'll find that possibly, even up to half of them come from the industry. And I can remember when they might have a token geologist on their committees. So several of the committees that I have served on, possibly would give some insight in how this developed.

End of tape.

Tape 2 Side 2

Andy: I and other, in the oil industry, particularly people who were in jobs such as mine, who had responsibility for surveying the research that was going in universities, and I might mention, also funding it, because over the years, oil companies have been very liberal in funding research projects, up to, at their peak years, I know Esso had a fund of up to \$200,000 a year for funding academic research projects. Each company had, maybe not in that order, but it could, say, possibly half a million dollars or so, funds going to support students and professors doing research, relevant to the petroleum industry. Now the several committees that I served on, and some of the early committees were advisory committees to the government, the Geological Survey of Canada and the National Research Council. In the early 50's, there was no oil men on those committees at all. I remember I was one of the first member from the oil industry. What they did, they put one person from the oil industry and one person from the mining industry and we were on approval as it were, and I think we did a reasonably good job because those committees really now, always have industry people on. So that was one of the committees, a National Advisory Committee on Research, and we'd go down to Ottawa once a year and spend three days and discuss research problems in Canada. Gradually at those meetings, they were quite surprised at the input of the petroleum geologists because there's a lot of research that goes on in back rooms in Calgary that the general public is not aware of but by reason of these committees, there began to be some awareness of that. So that was that committee. Another committee that I served on and in the 50's it never had any people from industry on it. It was all done by academics and government was the grant Selection Committee. This was the government grants for university research and every year, every professor or most professors make an application for their research grant. And a committee sits in Ottawa for five days and rules on all these grants and now there's an industry representative on those, sometimes even two. I served on that committee for four years and sitting around the table with all the rest of them academics and the research projects covered the whole spectrum. And you had to be on your toes really, you couldn't play it down and say I don't understand that. You just had to work at it. So what I used to do, I'd spend maybe two months before the meeting reading over all these proposals and phoning up my friends and if I didn't understand, try to find out. So that I think that we did a pretty good job on that committee. Other committees I served on were advisory committees to universities, and I personally served on three. One was the University of Western Ontario, the other was the University of Calgary here, and Memorial University in Newfoundland. It was a three year appointment to each of these, and once a year, you

would go to that university. A committee of three, one from government, one from industry and one from academia. And we'd spend three days interviewing the students, interviewing the professors, interviewing the administrative staff, so that we could, in our report, give the Dean, it was called the Dean's Committee, some feel of what we thought, how his department was being run. These were very interesting, I think these committees make quite a contribution. One in particular, if there was incompatibilities among the staff, we could maybe sense this or recommend that something be done about it. And actually I think in several instances our recommendations were taken, certainly for the good of the department. Another committee I served on and enjoyed very, very much was Advisory Committee to the Alberta Research Council. I think I served on this committee for about ten years. What that entailed was going up to Edmonton for two or three days each year and discussing with the scientists and the administrative people and the research director, the types of research they were doing and its importance to the oil industry. In fact, this particular committee was mostly industry people and I think that today the Alberta Research Council, now it's called the Geological Survey of Alberta has got lots of strengths and I think a lot of those strengths. . . some of it was the outcome of the advice that industry gave them by virtue of these committees. Several other committees that oil people contributed to and I among them was serving as Associate Editor of Geo Science Canada, Publications Committee of the Journal of Earth Science and some international committees. As far as international committees go, I served on many including the Geological Society of America, Membership Committee, Education Committee of the Canadian Institute of Mining and Metallurgy and then on our own local society, a research committee, Tectonic Map Committee and so on. I think that by serving on these committees, industry made a real contribution to the scientific welfare. . . , or geological science in Canada and it's still going on. Companies encourage their scientists to become involved in these activities. This is an important aspect and as I said earlier, now the credibility of the scientist in petroleum geology is considerable both in academia and government. Now you find many people who have years of experience in the industry are now in academia teaching, and vice versa, many teachers or professors are now involved in the industry. In fact, Queens University, two years ago, lost five of their staff, four of them to industry. It used to be the other way around, it used to be industry would lose their staff to academia. Also in the government, you'll find that working down in EMR in Ottawa and institute here in Calgary, possibly 1/4 of their staff have industry experience. So now I feel that the three groups, academia, the government and industry really get on well together and have an appreciation for the work that each is being done.

#090 Susan: Would you like to mention some of the societies that you belong to, professional or . . . ?

Andy: Yes, I guess that I'm no different than many of the oil people who are interested in the science of petroleum geology and belong to quite a few societies. First of all our local society which every Canadian Society of Petroleum Geologists, I'm an honorary member of that society and I've served on many committees in that group. In fact, I was the Chairman of the first Research Committee of the Alberta Society of Petroleum

Geologists, which started in 1957. And I served on a liaison committee with the Geological Survey of Canada in the late 60's. I also served on a Tectonic Map Committee along with people like Bert Ballie and Glen Fox, which we prepared a tectonic map of Alberta to contribute to the overall tectonic map of North America. I also chaired a committee on the science policy for Canada, where the government of Canada were making inquiries from the industry and making changes in their science policy and I think some of our recommendations were implemented and I think that was a committee that we made quite a contribution. I also served for many years on, what I call the Earth Science Symposium Committee, which puts on every year in Banff, a specialist type of week long seminar where we bring eminent scientists from many parts of the world, three, to speak to us and we limit the audience to sixty people. These are very worthwhile events. Another committee which most petroleum geologists belong to is the American Association of Petroleum Geologists and I've been a member of that since 1953 and served on several committees associated with that including a research committee and a membership committee and I was a District Representative for several years. Another society that a lot of geologist belong to is the Geological Association of Canada. I was a counsellor on that group for four or five years in the 60's, I was on their publications committee, I was on a special committee on public information and I was also on the Logan Medal Award Committee for several years. Another committee, fewer petroleum geologists belong to is the Geological Society of America. I was on the membership committee of that group for several years, I'm a fellow of the Geological Society of America. The Society of Economic Paleontologists and Mineralogists, which we call the SEPM, I'm an honorary member of that society and I've served on many committees of that group. I was a Vice-Chairman to the SEPM-AAPG annual convention in 1970 which was held in Calgary. I shared that job with Jack Browning who was the overall chairman of the committee. I was on the nominating committee in 1971 and I was a Vice-President nominee in 1978 and I was on the honorary member selection committee and I am now an honorary member of this particular society. I used to be a member of the Canadian Institute of Mining and Metallurgy and was on the education committee and the publications committee and there's one or two international committees I belong to or societies. The International Association of Sedimentologists and I've served in a couple of committees in that group.

#137 Susan: Would you like to comment on the situation between APEGA??? and CSPG?

Andy: Yes. I am a member of APEGA, in fact, I was honoured by APEGA by earning, or being awarded or granted the Spraggan??? medal for expertise and That controversy is going on, I think that just like many other things, the press make quite a bit of it, but there is some sort of a controversy going on between the members of our scientific society, the CSPG and APEGA, which is a professional society. And I feel that it's just a few, it's just a minority that are raising an unnecessary fuss. APEGA is a professional society, it's a government controlled society and it's put there for the protection of the public. If you're going to be a consultant geologist, or an engineer, or a geophysicist and selling your expertise to the public, certainly the public needs some

protection. Just because you're a PhD or a B.Sc. in geology doesn't mean that you have that certification and that's what APEGA is all about. I believe that it is for the protection of the public, I think that all of us should belong to this group and support it. Whereas the Canadian Society of Petroleum Geologists, that is more of a scientific society and doesn't get too involved in political aspects, it serves the science. I think there's room for both of them. If as some would advocate, the CSPG go it alone and divorce ourselves from APEGA, we would have to set up a machinery to accredit the various geologists and to investigate them to see if they have the right or the credibility or the credentials, really, to serve the public. This is done very, very competently by APEGA and I think we should support it. I think that's what is going to happen. Now as far as the name goes, it used to be a professional engineer and that was all the categories they had and recently, say maybe about ten years ago, now they have another two categories. You can be a professional engineer, professional geologist or a professional geophysicist. A lot prefer that to the other, to me it doesn't matter, but I do feel that APEGA is needed for the protection of the public. All provinces have it and I feel that it is just a minority that are talking against it and I feel that this will solve itself through time.

#178 Susan: I notice that Aubrey Kerr has quoted you in a couple of articles that you've done on geological ??? Would you like to comment on your contribution to that idea?

Andy: Yes I could. This was a little paper I put together and it was done in connection with a symposium that the Canadian Society of Petroleum Geologists put on. Actually, it was a symposium put on in my honour and I was also, at the same time, awarded an honorary membership in the society. What they did, they put on a two day carbonate symposium, where they brought young scientists from all over Canada to give a series of papers and they called it the Baillie symposium in my honour, which I was very appreciative of. And then they had a special dinner in the evening and asked me to make a speech. So I did, and they gave me twenty minutes and you can't thank people for giving you an honorary degree in twenty minutes, so I had to add to it. So I put together this paper which I call, Management and the Geological Fence and by fence, I mean prejudices or biases which the oil industry has and has had in the past. Many, many of these biases. . ., like you've heard the expression, I'll drink all the oil they find in Alberta and so on. So I put together many of these stories about geological fences or the biases and Aubrey Kerr has added to that and he has published this in his papers, Corridors of Time, but I just mention one or two of the fences or the biases. One of them, in the early days because you geologists will realize that say, in southern Alberta, there's a geological feature called a sweetgrass arch and all the beds dip up towards Montana. And as you know, oil migrates updip and the story was around, there'll never be any oil in Alberta, it all has migrated updip into Montana. And that fence hung around for awhile but since, as you know, after Leduc and so on, that fence was really broken down. That was one of them, another one that was interesting to me, is that most of the oil men in the early 50's got their experience in the United States and the Triassic in the States, in fact most places in the world, is all composed of red beds and you never look for oil in these red beds. However up in B.C., by accident actually, they found oil in the Triassic, ??? and we

started or tried to recommend exploration for more Triassic oil in northeastern B.C. and gas. However the word was out, they wouldn't look for oil in them there red beds. So this was a fence that now is broken down because the halfway in many, many producing formations in northeastern B.C. are Triassic. So that was another fence that took awhile to break down. Another big fence, I think, that took a long, long time to break down in the whole of North America was this continental drift. Because in the 50's and the early 60's, very few Americans believed in this continental drift. In fact it had been talked about in the 20's in other parts of the world, but not in the States. In fact in 1926, in New York, they held a meeting and they brought over these Europeans, Begonner???, who was the proponent of continental drift to discuss this and it was sort of a decision by committee after the meeting, they sort of ordained that continental drift didn't happen in North America. And actually in many respects that hindered exploration, certainly in our offshore for a long, long time. Now of course, everybody is on the band wagon and believes it. But it wasn't until the 60's that this became popular in North America, which is astounding but nevertheless true. There are many fences that have been broken down one by one. Another one that I was involved in and reported in this paper was when Gulf Oil made the play in the McKenzie Delta, and I think I mentioned before that in the McKenzie Delta, the Cambrian outcrops at the airport of Inuvik. And based on our surface geology, we predicted that there would be a thick sequence up to 30,000 feet of sediment just within 50 miles north of Inuvik. And people were appalled, including our management at the time. However as history has shown, we drilled some wells there, we've got some gas and oil production from the Beaufort Sea and so on, so that broke that prejudice down. There are many and I think we can learn from these prejudices, because some of these preconceived notions can be deterrents. And often management might have those prejudices and it's up to the young geologist, who know better a from his research or from modern investigations and sell the new concepts to management. And sometimes it's tough because management, at his level, can say, well everybody know that's not so. It takes courage sometimes, and confidence to be able to tell you manager, oh no, that was so in your day but it's not so anymore. You have to be very careful and diplomatic when you contradict your management. But I think it's good to keep in mind that there's many, many of these prejudices and fences, that one by one are broken down. I often say people like Cam Sproule and Jack Gallagher and John Masters, these explorationists, they had no fences, no prejudice. They were bold and the moved in there and it's paid off for them. And I think this is what an explorationist has to be, get rid of those prejudices and be bold and brave and optimistic at all times, like those three people that I mentioned. This has been published and you can read it but I do feel that there's many others and I won't take time to go into them but I think, just remember the fence or the prejudice or the bias that sometimes lasts for a long time and sometimes keeps us out of areas that we should be exploring for and gradually these are being broken down and it's up to the young people to work away at them and convince the older people. Older management are more inclined to be prejudiced than the young person.

#284 Susan: Well, I think that we've covered a great deal of very interesting career that you've

had. You've made many very important contributions and I'd like to thank you for participating in our project and wish you good luck with all your present endeavours.

Andy: Well, thank you very much Susan, I've enjoyed participating in this and I hope that some people sometime will find some of this useful. Thank you very much.