

PETROLEUM INDUSTRY ORAL HISTORY PROJECT

TRANSCRIPT

INTERVIEWEE: R. M. Baillie

INTERVIEWER: David Finch

DATE: December 10th, 1999

David: Today is December 10th, 1999 and we are with Mr. R. M. Baillie, he goes by Dick at his house at 32 Sunset Way in Priddis. My name is David Finch. Could you start Mr. Baillie by telling us when and where you were born.

Dick: I was born in Saskatoon in 1927.

David: Brothers and sisters?

Dick: One brother, Wilfred and two sisters. Wilf is the oldest and the two girls in between and I'm the youngest.

David: And their names?

Dick: Wilf, Dorothea and Audrey.

David: And your folks, their names?

Dick: William Baillie and Martha.

David: What did your father do?

Dick: He was a bookkeeper for the City of Saskatoon.

David: Tell us about your education.

Dick: Well, I took the normal 12 years before I went to university of course, and I took geological engineering, which at the University of Saskatchewan at that time was basically a hard rock geology course. Because their had been. . . the oil discovery, the big oil discovery of Leduc didn't come along until '47 and I was in my third year of university at that time.

#015 David: Tell us about those courses. What were you learning how to do?

Dick: Well, it was hard rock geology. Mind you our course was set up that we took an awful lot of the engineering classes, you know, hydraulics and thermodynamics and physics and math of course, and most of the geology courses were hard rock geology. I think we had about one or two what you call soft rock geology.

David: What did you do in the summers?

Dick: In the summers, I surveyed for the City of Saskatoon a couple of summers. I spent a summer up between Yellowknife and Great Bear Lake on a mining exploration crew.

David: Who was that for?

Dick: That was for. . . it was an outfit out of Toronto, not a big mining company that you would recognize.

David: And what did you do on that survey?

Dick: Most of the time, it seemed I was cutting line, with an ax. But we were trenching and

looking for surface showings, gold.

#030 David: Taking samples?

Dick: Taking samples and then we cut line for a magnetometer crew that came in to do a magnetometer survey of the area but that's about it.

David: So were you involved with the magnetometer work?

Dick: No, we just cut the lines for them.

David: Could you explain to us how a magnetometer works?

Dick: Well . . .no. I'm not a magnetometer person but of course it measures the difference in the magnetic fields and if you run over an ore body of course, or any metal body you're going to get a higher magnetic reading. But the actual mathematics and stuff involved I never did get into.

David: Okay. And how extensively was that kind of surveying . . . were the magnetometer's used in those days?

Dick: I think that was almost the main geophysical tool they used for mining in those days?

#042 David: So how did you get interested in seismic and that kind of geophysical work?

Dick: Well actually after I graduated I went to work in Flin Flon as a Mining Engineer, actually I was a surveyor underground and I spent two years doing that. Then I thought, well, I'd been in Flin Flon long enough so I took that summer off and I came out here to visit my brother who was in the oil business, he was working with Shell Oil at that time. So Ted Rozsa, who I'm sure you've heard of was also with Shell Oil, he was the area geophysicist with Shell Oil and he was starting up a contract seismic company and there was a shortage of graduates and he was very anxious for me to come and work with him. And I eventually, after taking most of the summer off, I said to him, okay I'll give it a try for a year. I started with him November 1st of 1950 and I worked in the seismic business until 1991.

#055 David: So you had no specific experience though?

Dick: I had no experience in seismic and I didn't intend to get into the business.

David: But Mr. Rozsa was convincing?

Dick: Well, things were happening so fast then. It was booming. The crews were going out and you were hired on as a computer one day and a little while later you were out surveying and the next thing you knew you were a Party Manager and then you were a Party Chief and this all happened in a period of about a year and a half. And so every time that happened you got a raise in salary, so you kept saying, this is kind of hard to get out of now because there was too much opportunity really.

#063 David: So you've gone over a lot of things very quickly and you're saying, that's what happened to you, you went through all those positions quite quickly?

Dick: Yes, I did.

David: Okay so can we go through them and spend a couple of minutes talking about each one? You started as what?

Dick: I started in the office as a computer. And that was when a computer was a person not a

machine. You picked first breaks on the records and you plotted them up and calculated weatherings and you point plotted. You picked your reflections on the seismogram and you plotted them by hand on a cross section paper and adjoined all the shots together into a section and then drew your average lines which represented the different formations and then the Party Chief drew the final interpretation and put it on the maps, contoured the maps up and you were naturally looking for structural highs. That's basically what a computer did.

#074 David: And then you moved on to what next?

Dick: Well, while I was doing that it seemed that we didn't have a very big crew and so I would do that quite often at night, and survey during the day. So it kept me pretty busy.

David: So this was during the boom just after Leduc, well three years after but during a boom time so high demand for. . .

Dick: Yes, a lot of contract crews going out at that time.

David: And you were with Ted's contract company?

Dick: Yes, Frontier Geophysical.

David: A partner in this at this point or just an employee?

Dick: Just an employee.

David: So out in the field then you were doing all these different things. How long did it take you to become a Party Chief?

Dick: Well, I became a Party Manager in 1952 and then a Party Chief in 1953.

David: And where were you shooting, all over?

Dick: Yes, we shot all over southern. . . . well, I shouldn't say Southern Alberta, in the summer we worked in the farm areas right up into Edson and down south to Medicine Hat but in the winters we were always up in the bush country, in the muskeg area. My first three winters in the bush were south of High Prairie, close to the Swan Hills fields.

#095 David: Any stories from those winters, get kind of cool sometimes?

Dick: Well, yes, I can remember 50 below, that's for sure, quite often. Great troubles starting the trucks and when you got them started then normally in those really, really cold nights, the rear differential would be solid and we would drag trucks around the compound for hours, it seemed, on end, trying to get the wheels to turn over because the grease in there was so stiff that the tires would just skid around on the snow for 15 minutes maybe before one would turn over. And of course, I guess we did quite a bit of damage to some of the trucks that way, not immediately but I'm sure the wear and tear showed up.

David: So it was more than just keeping the engines warm?

Dick: Oh yes. You could plug the truck in as far as the engine goes because we did have power plants on the crew but we never had heaters for the wheels and the differentials and the transmission.

David: Well, the whole power train, right?

Dick: Right, the whole power train. It was eye-opening.

#109 David: So once you got your vehicles running you could get to where you were shooting

but what were the complications of working, shooting lines in that kind of conditions?

Dick: Well, actually that wasn't. . .once you got organized it wasn't too bad. But in those days we had all two wheel drive trucks and that presented a complication when you got in hilly country. We spent a lot of the day winching from one shot point to another. Later on of course, we got into all four wheel drives but the first 2 or 3 years we were trying to do it with two wheel drive equipment. And even with chains on you just couldn't do it.

David: Did you get into Nodwells??? and things like that or were you mostly along the roads?

Dick: No, we worked in the winter in the bush because it was frozen. Frontier for the first ten years did not have any Nodwells. We never did get into specialized equipment. We just stuck with wheeled equipment because you worked on the plains in the summer and in the bush in the winter.

David: So what did you use to make roads for yourself in the winter?

Dick: Well, we contracted bulldozing contractors.

#123 David: And your camps or did you stay in town?

Dick: No, we were always in camps but the quality of the camps were not that great in those days. They all had their own little Duotherm heater in but you could put about eight people in one trailer in double bunks, people on the top bunk suffocated with the heat and the people on the bottom bunk almost perished with the cold. And there were lots of arguments and disagreements about the heating systems. Someone would get up in the middle of the night to turn the heater off and then the guys down below would freeze and they'd be trying to light it in the middle of the night. But basically everyone got along pretty good.

David: What did you have for washing facilities?

Dick: We always had adequate washrooms. No we didn't have adequate. . . As far as washing and showering, we had that but we never had indoor plumbing. You just dug a big hole in the ground, built a frame and covered it in cardboard and that was the outdoor biffy.

David: Never had a heated biffy in that period?

Dick: Yes, sometimes we used to put a heat bulb in there to try and take the chill off.

David: Pretty cold eh.

Dick: Yes, it was cold.

#140 David: So you were learning the geophysical. . . the science of it on the job from Ted Rozsa and other people?

Dick: Yes.

David: And did you find this a challenge, interesting. . .how did that go for you? It was all new right, you hadn't taken any geophysical course.

Dick: It was all new to me. We didn't take any geophysical courses at university, no. We had taken physics of course, and math but had never taken anything pertaining to geophysics.

David: So were there standard texts that you were reading or. . .?

Dick: Yes. Well a couple of years after I started with Frontier, my brother came over as a partner in Frontier. He sort of wrote a little text book for us all to use. It covered the

basics of seismic exploration and quite a bit of the geology of Alberta.

David: Was that ever published?

Dick: No.

David: Do you have a copy?

Dick: No, I don't have a copy. But we all used it and it was very good to have.

David: Do you think he might have a copy? It would be very interesting wouldn't it.

Dick: I doubt if he could find a copy of that now.

#155 David: But it was specific to Alberta?

Dick: Yes. Well the geology was. It also covered the elementary part of seismic/

David: Were there any particularly unique things about doing geophysical work in Alberta?

Dick: Unique in what respect?

David: Well, for example, I interviewed a fellow last week, Peter Savage, who had come from Nova Scotia. Geophysics there was very complex whereas here, he worked there for a couple of years and then he came here and here was much simpler. But any particular techniques that you applied here that were different from other parts of Canada?

Dick: Well, since my whole career was in Alberta and B.C. I wouldn't know exactly what they did but when you say it was more complicated down east I would assume he was talking about the geology.

David: Yes.

Dick: Well, of course, the geology in New Brunswick is really complex. A lot of faulting and folding and tight folding. And of course, we have lots of folding in the foothills but in our early years, to a large extent, most of our work was out on the plains where everything is relatively flat. And even in the bush everything is relatively. . . well the geology is pretty uniform.

#173 David: Those early days of geophysical work you were doing, how would you assess that for it's ability to find oil? How successful was that?

Dick: I think it was fairly successful. It certainly was successful with the obvious structures like Redwater. We had nothing to do with that one but. . . I think it lined a lot of reefs around the country and . . .

David: So you were able to find big features. I mean compared to the geophysics that's done today, that was pretty crude wasn't it?

Dick: Oh yes. And you were looking for the big features. More and more now you're looking for pretty subtle things and it takes a lot more technology to find those.

David: Yes, because all of the big elephants would have been found probably.

Dick: Probably they have yes.

David: So what was your next change in your career, where did you go next?

Dick: I was out in the field until the end of 1955, so basically four years in the field. And in the summer my wife and I lived in a trailer and dragged it from town to town. And in the winter I went into the bush and she went home.

#191 David: Your wife's name?

Dick: Aleda.

David: And when did you get married?

Dick: In '53.

David: And where did you meet?

Dick: In Flin Flon.

David: And where did you have your home, in Calgary?

Dick: We moved into Calgary at Christmas of 1955 and we rented a house on 14th Street and then we bought the next year, in the summer of '56 we bought a house on 26th Avenue in Knob Hill and we lived there until 1965 when we moved over to Lakeview Village. And we lived there until 1989 and then we moved out here.

#210 David: Now what had prompted this move into Calgary for you?

Dick: Well basically, up until that time we were doing all the interpretation on the crew and we always had a Party Chief who had a university degree and two computers who were also university educated and so the whole interpretation was done out in the field. But in '55-'56, we started using play back machines in town. They were analogue play back machines. It was more suitable to be where the play back machine was, so all the . . . in Frontier anyway, all the office staff from the field were brought into Calgary.

David: How big a company was Frontier by this time?

Dick: We only operated four seismic crews. We operated a couple of slim hole crews that also did a certain amount of seismic involved with the slim holing. So counting that we operated six crews.

David: So then you're in Calgary doing interpretation at this point?

Dick: Yes. Until 1960.

#223 David: And you bought the company from Ted?

Dick: In 1960 Ed Rutledge, and Sandy MacDonald and I bought. . . Ted offered us half the company at first, so he stayed around for about another year and then we took over the whole thing. Then we ran that until 1965 I guess.

David: Why did he want to get out of the contracting business?

Dick: Well, there was a terrible slump right at 1960.

David: So I can understand why he wanted to get out, why did you want to get into it?

Dick: Well, we just thought we could run a small operation and do the work ourselves basically and that we could make a go of it. And we did but a lot of the fellows that were doing computing and even Party Chiefs got out of the business all together.

David: So what made the difference for you, how were the three of you able to keep the company going in these tough times?

Dick: Well, we had one contract or we got one contract as soon as we took over the company and that particular contract went from 1960 - 1991. I don't mean we worked 12 months a year but we worked every year for that same client with basically that same crew. Well, the people changed of course. But I looked after that crew for 31 years.

#245 David: What was the name of that company?

Dick: Well, it was Cal Standard when we got the job and it was Chevron when we ended up.

David: That's good.

Dick: Well, that was a good long contract and that was my contract. Eddie Rutledge did a lot of work with Amoco and he had good relations with Amoco and so we always managed to get work with Amoco. And then Sandy MacDonald pretty well looked after the short jobs and whoever that we could get more work with. So it was a hands on operation. The three of us never did run more than four crews so they were pretty closely supervised.

David: But the geophysical industry really has a history of falling right apart during the downturns so the fact that you fellows stayed in business, that's quite something isn't it? Tell me the details, how did you stay in business?

Dick: Well, as I say. . . .

David: Did you run a real tight ship?

Dick: Yes. When you have an owner or part owner of a company running each crew you run it pretty carefully. The profit margins were pretty small but we always made a profit. We never did have a year where we actually had a loss but we had lots of years where we didn't have big profits. So and then as you say, the business is cyclic. A few years later we were doing well. And then in '65 we sold the company to Ray Geophysical and we all had a 2 ½ year work contract so they. . . .Ray had also bought a small seismic company called General Geophysical. Well, it was small in Canada, it was an American company actually but they only had about 2 or 3 crews up in Edmonton. They worked out of Edmonton. And so then they bought us and they put us all together in Calgary under the name of Frontier and I managed that company for 2 ½ years and when my contract expired I decided to start my own company.

#276 David: What year was that?

Dick: That was 1967.

David: And the name of that company?

Dick: Norcana Geophysical.

David: Now just correct me if I'm wrong here, you said something about the Chevron contract lasting right through until '91. Did you take that with you?

Dick: It followed me.

David: Okay. And Norcana, you started in '67 and it lasted until. . . ?

Dick: 1991.

David: And you sold it?

Dick: No, basically we shut her down. And the reason we shut her down is that the instrumentation was changing so quickly and we were looking at . . . I mean in the early years, you could outfit a seismic recorder, in the very early years, in 1950 for about \$30,000 for the instruments. In 1991 we could see that the equipment to run a proper seismic operation you could spend millions of dollars to come up with the instrumentation and at my age at that time, I was 64, and I said, I don't want to make that commitment. Because if you spend that kind of money you're not going to be out of it in a year. And so I first said to the other two fellows. . . oh, we didn't get into how the other two fellows got there. I had taken, in Norcana, in 1974, I took two other fellows into the

company as junior partners and I said to them at that time that I was quite prepared to sell the operation to them and they, although they were younger than me, they looked at it and said, well, we kind of agree. We've done well enough that we don't really need to work anymore so we just shut the company down. What we did do is there were a couple of young guys that worked for us that asked if they could buy the equipment. They didn't buy the company as a going concern, they bought the equipment and carried on and they asked us if they could still use the name Norcana because we did have a pretty good reputation. So I said sure, go ahead. So they became Norcana 1991 Ltd. And they're still operating.

#312 David: And you gave that to them, you didn't sell it?

Dick: The name?

David: Did you sell them the name?

Dick: No, they were good employees, we just said, sure you can use the name.

David: That was nice of you?

Dick: Well, as I say, they were good guys and from what I understand they've done a great job. And they were young enough that they struggled for a few years because again, in 1991 things had tapered right off. So it was history repeating itself sort of. They were getting in when people were getting out but they finally got established and got into these very expensive instruments and they're doing a great job. So it's worked out well for them.

#323 David: Tell me about some of the changes that you've seen over the years, particularly from when you were in the business with Norcana from '67 to '91. Obviously there have been technological changes but what else have you seen come and go?

Dick: Of course, the big thing are the technological changes and the change in the equipment. You know, where we used to. . . when we started out in the 50's we were recording 24 trace and that was with analogue equipment and then in about '67, '68, digital equipment came in. And then in the late 80's, they started going to the telemetry systems, where the equipment, instead of geophones and cables. . . you still have geophones out of course, and they're still analogue but the signal came in through the cable in a digital format rather than in an analogue format. And this eventually enabled you to shoot 2,000 traces at a time or more but that's a long ways from 24 traces. Of course, in the meantime we had got, in Norcana, and other people too, we were using the DFS 5's which were 120 instruments and when this 3-D shooting as they so. . . . Everything originally was in line shooting and then you got into the 3-D shooting. To handle the 3-D shooting without getting into these real expensive telemetry systems, we would use as many as 5 or 6 of these recorders all hooked together, so that we could do 3-D surveys and shoot 600 channels. I think that's about the most we ever shot was 600 channels. And if you wanted to go much beyond that you had to get into these newer systems, these expensive systems.

#360 David: Over the years, the field work really changed too. Like, you used to just bulldoze big line through with a cat. Now things are done, hand cuts and so on.

Dick: Oh, yes, well. . . .

David: Tell me about that evolution.

Dick: Well, yes in the early years, even when we worked in the foothills, we were allowed to take cats up and down over those big huge hills, which involved a lot of detours because you could do that all right with the bulldozer but the trucks couldn't get up so they had to have detours. And the lines were wide, and you cut across a lot of streams and there was damage being done.

David: What was the thinking then, it would just grow back?

Dick: Well, we had to reseed it all.

David: You did eh?

Dick: Oh yes. We reseeded. Not in the real early years but in the later years we had to seed it all and it did grow back. I've been on those seismic lines where even the trees have grown back now in many cases. But no, when you did it properly and cross-ditched and everything like that you didn't get the terrible erosion. There were places where you got erosion. But anyway it changed and you ended up doing, especially in the foothills, everything with helicopters and hand cut lines, very narrow hand cut lines.

David: Where did the pressure come for that?

Dick: I don't know who bought the pressure on the government but the government decided this is the way it was going to be done. Our Energy and Natural Resources.

#386 David: Well I know that sometimes it was personal things too. Like in the early days you didn't back fill your shot holes.

Dick: Not in the real early years, no.

David: But one weekend Mr. . . .oh he was the Deputy Minister, his name will come to me in a minute, I interviewed him. . . .but he went home to visit his mother at Alex and he got out of the car to open a gate and stepped in a shot hole and by Monday morning he had legislation written.

Dick: That's right. I mean we didn't fill the holes in the early years, no one ever thought of it I guess.

David: Mr. Somerville, Hubert Somerville, that happened to him one weekend. He was one of the government people that brought about some changes.

Dick: Well there was a gradual change. Eventually the department had shot hole inspectors out and making sure that the holes were plugged and they had to be tagged. A lot of the holes were plugged properly but they would cave and so to recognize who had actually drilled the hole, we had to put up shot point tags with our permit number on them so then they could come back to you and say, you've got some caved holes out by Alex or wherever it is, go and fill them.

#412 David: How did you deal with those holes. You say caved, did you only fill in the top or what?

Dick: Oh, yes. You didn't fill them all the way up from the bottom, no. You had hole plugs. At first the hole plugs we used, we used to cut. We used to cut a tree in about two foot lengths and pound them down the hole and then put dirt on the top. Later of course, they developed metal ones and various ones, plastic ones and you put them down far enough

that you could fill in the top 2 or 3 feet with dirt. But if you were drilling in a sandy area, then the sandy hole underneath would cave and first thing you know you'd have a crater on the top. So then you went back with a dump truck and filled it in.

David: Sometimes it's government intervention but sometimes it's just economics. Like, helicopters are expensive but they're faster too. Tell me about that trade-off.

Dick: Well, all the helicopter work we did was an awful lot more expensive than the other work. Oh yes. When you get helicopter working. . . . Because you have to move the drills with helicopters and most of the drills for that type of work are in three pieces so there's three loads to get the drills set up. Your doghouse have to be moved by helicopters, your geophones have to be dropped off by helicopters. No I don't know the economics of it right now but there was no comparison on cost.

#440 David: Okay so why did you choose to do that sometimes?

Dick: Because we were told to. Because they wouldn't let us cut line. I mean, they wouldn't let us bulldoze line.

David: But you just passed that cost on to your. . . .

Dick: Oh yes.

David: So it was a flow through, it wasn't loss of profits or something?

Dick: Oh no, you couldn't possibly handle it. A lot of the contracts were hourly contracts anyway. But the ones that we did in the foothills with helicopters, they were all turnkey jobs, you gave them a price and then you had to live with it.

David: And how did you go about setting those rates? Was that tricky?

Dick: Yes because it was all competitive bidding and you were always bidding against people that thought they were better than you or maybe thought they were faster than you or whatever. But actually we found that work probably our most lucrative.

David: Why so?

Dick: There was more room . . . the cost per mile was so much higher than shooting something out on the plains. If you were aiming at 10% or whatever you might be aiming at profit, it was 10% of a much bigger cost per mile. They always turned out really well for us.

#467 David: Did you have any particular techniques in the field? Did you have all your quarters in the field, did you have moving camps or whatever?

Dick: Yes. We tried to keep camp as close to the job as we possibly could because you had to ferry all the men. . . that's another big expense, you have to ferry all the men out to work every morning and bring them back at night. That takes a lot of helicopter time. So yes, you kept your camps moving along with the job.

David: Did you develop any systems in your company that helped speed things up or make you more efficient than other companies?

Dick: I don't think really because everyone was aware of what the other person was doing a different way, you would know about it and you'd say, well maybe we should incorporate that into our operation. But the operation required a lot of planning and a top notch Party Manager in the field who was right on top of it all the time. And we had some really good Party Manager's and they did excellent work.

#490 David: Sounds like a very complicated job though?

Dick: It's a big job. It is, it's a real big job.

David: How much did say, weather and so on affect your operations?

Dick: Well, that could be a big problem.

David: Because you could get snow any month right?

Dick: Well, you could get snow or you could get rain. Weather in which the helicopters couldn't work or forest fires, we had that occasion a couple of times, not that we started them mind you. But you know, you get shut down for it. And of course you have a helicopter lined up, you guarantee them so many hours a month so you want to make sure you utilize him for the number of hours he's going to get paid for.

David: Yes, or you pay anyhow.

Dick: You pay anyhow.

#507 David: Any stories about the helicopters, any funny things, interesting things, near accidents?

Dick: Well, we never had a serious accident with the helicopters and I wonder why at times. Because when you get a helicopter lowering a portion of a drill into a line that's maybe only, where you have the shot points you might have it 6 or 7 feet wide and he's lowering it through trees that are 50 feet tall and there's guys down below who have to take that unit and fit it into the other unit. If a cable breaks or something, you have a disaster.

David: Or a wind gust.

Dick: Or a wind gust. And the drill or whatever it is on the bottom of the thing is swaying and when he's pulling stuff out of there if he happens to hook onto a tree. But we were very fortunate and we had a lot of good helicopter pilots I guess. But no we never did have a major accident.

#531 David: How about bears, did you run into them in the bush? Any stories there? What did you do?

Dick: All the people that worked on the line and the surveyors had two way radios. And if they ever spotted a bear they would just radio for a helicopter and the helicopter would go and pick them up. But no we never had a problem there. We did have a problem with a grizzly bear up in south of Grande Prairie. The surveyors had left their lunch at an intersection and they were walking, it was in the summer, it was a track crew. And they had left their lunch and when they came back to this corner for lunch, they saw a grizzly bear there so they said, well we'll just forget about lunch. And the next day, they went out to work and the driller was going out that way too, so he said, I'm going to take my rifle, if there's a darn grizzly bear out there, I'm going to take my rifle out.

End of tape.

Tape 1 Side 2

David: Okay go ahead, so who took the rifle out?

Dick: The driller took a rifle out and . . . I got ahead of myself there. Actually it was the day before that this unit broke down and we sent our mechanic out and someone dropped him off and here he is walking down the line with his coveralls on and rubber boots and this grizzly bear takes after him. He said it was like one of those dreams you know, you're trying to run as fast as you can in the muskeg but with gumboots on. And he was terrified of course. And the bear came right up behind him and he didn't know what to do and all he thought of doing was screaming as loud as he could, so he did. And the bear stopped and reared up as they will and he didn't stop, he just kept right on going and he managed to get to the Nodwell and jump in and slammed the door, fell on the floor and he said, his heart was beating so fast, he thought he was going to die anyway. And the grizzly bear kept circling around this Nodwell, but probably didn't like the smell of the oil and diesel fuel and stuff like that so he took off. Where I got ahead of myself is the next day, the driller said, I'm taking a rifle out if we're going to work out there. And the darn thing came in again and he shot it and killed it and he eventually, well he took it in to a taxidermist and had the hide prepared and about a year later the guy called him and said, aren't you going to pick this up. And so he came to me and he said, you know, I can't afford it, he wants \$100 for it and he said, do you want it. I said yes, so I bought it and I have it hanging on my log cabin wall out west here. That was the only scary situation we really had and that one was scary.

#022 David: Yes, I bet. What else did you do to expand your skills over the years as far as understanding geophysics?

Dick: Well actually when I started Norcana in 1967 all the seismic crews did interpretations but most of the oil companies. . . .so you do an interpretation in the field, most of the oil companies would do an interpretation in their office anyhow and with the playback equipment, their interpretation was probably better than what you could get just from the field records. So when I started the company in '67 I said, this is crazy, I'm not going to have all these technical people on a crew to do something that the client isn't really going to use. So I had trouble getting my first contract because I would go to someone looking for a job and then say, but I'm not going to do interpretation, we're not going to offer that service. And we got our first job with Canadian Superior with Dick Siegfried and he said, gee, I don't know, we've always had interpretation and finally he said, I know what I'll do, I'll hire a consultant to do the interpretation in Calgary and you just do the field work. And so when you ask me how I advanced through. . . I really didn't, I mean I just stuck with the field operations and tried to do those properly and didn't reallybecause by this time, everything was going more and more digital and more and more mathematic, actually the playback centres were starting to hire mathematicians or engineering physicists, you know, people that had a lot of math background. And so we just got out of the interpretation all together.

#044 David: Other contractors too, or just you?

Dick: I think we were about the first to do it. In the next 2 or 3 years I don't think anybody had guys out in the field doing interpretation.

David: Was that reflected in the price then, was your price lower?

Dick: Yes. But historically the amount they paid for those technical people, you were lucky if it covered them really. So it was no loss as far as profit goes and it was a lot less payroll to worry about in slack times. And the business had changed you know, from, in the early years we used to get a contract that ran 12 months a year and in the spring, in road ban, you probably were still paid 65% or 75% of your contract price, whether you. . . if you couldn't work because of road bans you got paid anyway. But the business had changed to the point, we started basing ourselves out of Calgary rather than moving from town to town because the jobs were all so short. Instead of work by the month you were getting maybe two weeks work here, three weeks work there so we just used to bring the crews back to. . . in the summer I'm talking about, bring them back to Calgary. get another job, they could drive out to wherever the other job was, even if it was in Saskatchewan or wherever. So we would have had a real problem paying a high priced computing staff with all the slack times in between. A few years later nobody was doing interpretation in the fields.

#063 David: Were these crews always just paid on the days that they worked or were they by the month, were they on staff, the field crews?

Dick: Well, we had a lot of hourly employees of course, and they were paid when they worked.

David: So most of your employees would have been hourly?

Dick: Most of them, all the jug hustlers and the survey helpers but all your surveyors, operators, party managers, they were all salaried people so they got paid all the time. And then when they worked they got paid overtime. Well, you know if they worked long months and in the winter we used to work 30 day months.

David: Can you explain why so many companies used contractors for geophysical work rather than doing it themselves?

Dick: Like survey contractors? Yes, because in the winter you always needed more surveyors because you needed a crew out ahead cutting line and they would have to have a survey crew with them. So you couldn't go from your summer position of people you could afford to hold onto all summer and still have enough people to cover all the jobs in the winter, so you contracted it out.

#080 David: Say, Chevron's main operations didn't include typically seismic work, right, most of the big major companies contracted out that work whereas they would have in house geologists and so on?

Dick: Oh, you're talking about the oil companies themselves, oh. Well, actually Chevron did have two crews of their own and Hudson Bay had crews of their own. Imperial in the early days had crews of their own. I think all the majors, not all the majors, pretty well all the majors probably had their own crews but then again in the winter when they had a 3

month period to do all that muskeg country that could only be done in the winter, their own crews couldn't handle all the work that they wanted to get done. And then finally they found that . . . well, Gulf had their own crews too, but I think finally they found that the contract crews shot cheaper for them than their own crews.

#091 David: So it was a supply and demand situation?

Dick: Yes, well, what was nice for the oil companies of course, when they had their own crews, they were always busy in the winter so that's when they hired their contract seismic crews but in the summer, they wouldn't have near the budget for the summer work but they still would have enough to keep their own crews busy. So they had year round work for their own crews and anything extra they contracted out.

David: What percentage of seismic work then, was done by in-house crews versus contract, like if a major company had two crews in the summer would it have ten working in the winter?

Dick: Yes. Chevron in particular, sometimes they would have 12 or 14 crews but 10 or 12 would be a good average I think, in the winter.

David: Really. So as much work being done by contract, over the course of the year, as much work being done by contract as done in-house.

Dick: Oh yes, I think so. Because even in the good years, they were running contract crews all summer too. A lot of them, in part, used field crews for training of their own personnel. It was a good way of training people in field work.

#106 David: Reminisce if you would for a moment and try to explain to me why you were able to stay in business straight through whereas lots of other companies went under?

Dick: In Norcana when I first started there, I said I'm only going to run one crew, so I don't have any big crew. In '74 I brought in these other two guys in the company so we never did run more than three crews, one each, and I think it was that personal type of control that you had on them that you could do the quality work and you had control of expenses. And some people just were too gung-ho and they wanted to be the biggest you know, we were running 3 crews, and then we were running 5 crews, and then we were running 7 crews and then we were broke. You know, just expanding too fast. And the big problem when you expand like that is where do you get the good people to fill those jobs and so you end up running crews in the winter with less experienced people and then that costs you money and you don't get the production. And then you get a client put off with you and then you don't get the job.

#122 David: So keeping small was part of the secret, not getting too greedy?

Dick: Yes, well I think so. That was what worked for us. Other people did run 6 or 7 crews and are still in business.

David: Yes, but there aren't very many companies that lasted 30 or 40 years in geophysics, in seismic work, they're pretty few.

Dick: Well, yes, there's been a turnover all right. There's been quite a few go out of business.

David: What did you enjoy most about your career?

Dick: I think the people we got to work with, even the competitors. In Canada it seemed like, you were friendly with the competitors. I understand down in the States, a Western crew didn't talk to a United Crew because you weren't supposed to but that wasn't the case here. We used to go out to lunch together for goodness sakes. There are just a lot of nice people in the contract business and a lot of nice people in the oil companies. I particularly like the association because every year they hired kids out of university and after about a year in the office then they would put one of them on the crew, just sort of as a training position for him.

David: On your crew?

Dick: Yes, they would just put him out with us and he'd be the bird dog on the crew, he would get the maps and liaison between us and the head office but gee, you got to meet an awful lot of nice people. And now of course, when I read the journals and stuff, well the names of these young people that came out on our crew when they were 21 years old or whatever and now they've been in the business 10, 15, 20, 25 years some of them now, and you see how well they've done.

#147 David: Were they college kids?

Dick: Yes, they were all university graduates.

David: And what were they doing in the head office?

Dick: Oh well, they all went back into interpretation.

David: Okay. They were in the geophysical department there?

Dick: Yes, they were in the geophysical department.

David: Did you invent anything, any contributions you made to the world of geophysicists, anything you're proud of.

Dick: I don't think so. No, we weren't innovators I guess.

David: Well, I think what you mentioned about not doing interpretation in the field, I think that's an innovation.

Dick: There had been what we used to call bob tail crews out for special situations prior to that but I guess. . . . I think we were probably the first that said, hey, we're just not going to do interpretation and that's the way it is. So whether that's. . . .well, you might call it an innovation, but when you really think of it, it had to come. I mean you couldn't cart computers around. . .I mean the big machinery around. You know in those days the play back stuff was all vacuum tubes and it needed air conditioned rooms and if you jostled them too much they quit working and you just couldn't. So all the data was being processed in Calgary, so why have an interpretation out on the field, so it was obvious it was going to go that way. I think I just did it when I started up the company because I said, that's the way it's got to go. I didn't push it there or anything. I could just see that that's what was going to happen.

#167 David: It seems to me to be significant that you saw the writing on the wall and you made that move.

Dick: Well, it's probably because I couldn't afford to pay a couple of computers.

David: Don't be so modest. Anything else you did like that?

Dick: I think we did some of the early helicopter work. Not exclusively but we did some of the earliest jobs in as we called it portable. . . in the foothills.

David: Did you then have to figure out a way to break down your drills or was that technology already available?

Dick: That was the big problem of course. We didn't design the drills but when you asked the drilling contractor how he could drill holes for us up on the top of a mountain it didn't take those guys very long to figure out what to do. And I think one of the first drills that was a component drill like that was probably designed. . . I may be wrong in this, but I think it was designed for the Arctic but it was a little too big for the type of lines we were cutting. You know, having 3 components in a drill so that a helicopter could carry it. So I think other people just said, we'll just do the same thing except we'll make it smaller where a reasonable size helicopter could take it in. You couldn't afford to get the biggest helicopters of course. But we didn't have anything to do with the design, we just told them what we needed. But again, when I say, we were in the helicopter work very early in Canada, I don't know what they were doing in the States, whether they were already doing it or. . . but basically they were probably starting it about the same time.

#192 David: What year did you get into helicopters?

Dick: I honestly can't remember.

David: Before Norcana?

Dick: No, it was in Norcana.

David: So the seventies.

Dick: Yes, it was in the 70's, probably the late 70's.

David: Any other contributions, don't be shy about this.

Dick: No I can't think of anything.

David: When did you get into the Nodwells?

Dick: We actually got into the Nodwells when we bought Frontier from Ted and in Norcana we had Nodwells from the start.

#203 David: Now in the early days those Nodwells were not very reliable, I've had the Nodwell people themselves tell me about those.

Dick: No, they were terrible. We used to have long discussions with Mr. Nodwell himself about the design of Nodwells and stuff. He was a hard man to convince that there was something wrong with his equipment but over the years he developed a very good machine. But it wasn't that . . . it didn't start on the first machine, it was a process of feedback from the various crews, the drill contractors and everybody that had them saying, hey, this piece keeps breaking or why don't you have a dolly wheel at the front. The original Nodwells only had the . . . the track went around four wheels and then a drive wheel at the back. So it was going into the muskeg with just that front wheel and a lot of people including myself kept saying to Nodwell, . . . Bruce, why don't you have another dolly wheel up here so that you have this angled attack. I can remember him arguing with that and saying, no, the Nodwell rides like this so you always have that angle of attack. But everybody in the field knew that was not the case. And so finally they

incorporated that on there. Well actually what happened it some of the drill contractors just built their own piece on the front and then Bruce decided, well I guess maybe that is the way to go so he did it. But Nodwell ended up with a very good machine but it took a long. . . he started it from the idea of rubber tracks and metal grouser bars and it just developed from there and over the years they developed a real reliable machine. But in the early years, my goodness, we never got out to work and back without something breaking down. I can remember coming in at night at 2:00 a.m. or something like that because something had broken down and you had to change it in the field. You put in some long days when you were working with those things. But then as I say, they developed very nicely and made the work real practical.

#235 David: For your entire career you were always using vehicles, you weren't every using pack animals and so on were you? Did you?

Dick: Well in Frontier we did.

David: You did, where?

Dick: Up out of Sundre. Sandy MacDonald had a crew in there and they used horses, up in the Burnt Timber, in that area and it was a disaster. They got some work done of course, but it was one of those summers that it rained and they spent more money hauling hay in than. . . you know, it wasn't an expensive operation as operations later turned out to be but still a lot of it was in just keeping those horses fed.

David: So not very productive?

Dick: Not real productive no. And then again, what were you going to drill the holes with. You know, they had some light portable drills. In fact, I think they even used hand augers. But other jobs were done with pack horses I guess. I can remember. . . it wasn't actually a job but Ted Rozsa and my brother rode horses into Wabasca, just scouting the area, which was kind of a nasty trip with all the mosquitos and everything else. But no, that's the only job I think that we ever did was out at Sundre there.

#256 David: Did you do any work in the Arctic?

Dick: I was never in the . . . yes, we were in the Arctic from say, Fort Good Hope up to Arctic Red River. We worked there for 2 winters for Cal Standard or Chevron, I think it was still Cal Standard then. That was very interesting job. That winter got at least 60 below, not continually but it was cold. It was so cold that we used a lot of Indian jug hustlers out of Fort Good Hope and they were good, but as soon as there was any delay on the line, those guys had a little bonfire going. I mean, they were so quick that they wouldn't hesitate, if the recorder was broken down or any delay they just immediately lit a bonfire and the stood around the bonfire. It was very interesting work up there.

David: Were they good workers?

Dick: Yes, they were. We had good workers up there.

David: And what kind of equipment were you using, just trucks.

Dick: We were just using wheeled equipment yes. But the interesting part, or at least I found interesting, not knowing anything about the Arctic the first year we went in there but fortunately I had a Party Manager that had worked in the Arctic. It was getting the

supplies in by boat down the river in the summer and where to put your supplies because you took all your fuel in. Well actually no, you picked the fuel up in Norman Wells but it was all in barrels and so you had to put those barrels along the river at various locations so you had to know exactly where the program was going to go and you had to estimate how far you were going to be. . .

#281 David: Months ahead of time.

Dick: Oh, for the whole four months. So I know when I got up there in the winter and I saw these supplies, way up the river bank, way up and I said to the Party Manager, how did you get them up here. Well, I guess on the barges they had a piece of equipment, a front end loader or something that they could just run this stuff up. And he just looked at me like, oh for goodness sake. Well I guess he had in earlier years, he had put in stuff at a lower level and it's hard to believe this but the river had come up and took a lot of their supplies away. And that is a big river. When you get north of Fort Good Hope, it's a wide, wide river and we're talking about I would guess, you could see where the trees had been taken up, maybe 50 feet up the bank. There are no trees because the water at times goes up that high. To me, I had never been up there and I thought how can that be.

David: What's this fellows name?

Dick: Dick Irving.

David: Is he still alive?

Dick: Oh yes. I think he still has his drilling company out of. . . he finally got into his own drilling business, it was called Double R Drilling.

David: And where is he?

Dick: In Edmonton, the last I heard of him, I haven't seen him for a few years.

#303 David: I think it would be interesting to interview somebody like that?

Dick: Oh yes. Because he had all kinds of experience up in that north country. But when you picture that that water in that river could come up 50 feet vertically and you know, the rivers around here. . . it would be many, many times wider than the North Saskatchewan through Edmonton, many times wider.

David: You're talking about the Mackenzie?

Dick: The Mackenzie yes. But the Mackenzie flowing north of course, this is what I've been told, is that the ice breaks up. . . you know the Peace River, the Athabasca River, right out of Jasper, it all ends up running up there, well the further south you are, it breaks up earlier. So all that water is rushing down there and ice flows are rushing down there and I guess it just jams up into a huge dam and the water just keeps going up. God, if I'd been looking after that, all our supplies would have been at Tuk. But Dick could tell you a lot of stories about the Arctic.

#318 David: You were mentioning Nodwells, did you ever use their rubber tired vehicles or just the track ones.

Dick: Our drill contractors used the big rubber tired ones but there were other people making those too so I'm not sure whether they were Nodwells or somebody else.

David: But Norcana didn't have any?

Dick: No, we didn't.

David: Let's see, what else. So you enjoyed the people, did you make any particular discoveries over the years. You weren't an oil company but were there any geophysical plays that you were involved in that you know directly led to a discovery.

Dick: Well, the first job we took with Dick Siegfried, they were actually drilling holes, basically as soon as we shot the stuff and this was up around Cherhill. Now these are small features of course, but they were quite successful in that area. And the seismic work in that area was done real cheaply. We used a minimum of parameters and yet still obviously got the results. Now as I say, we didn't do the interpretation but a consultant did do the interpretation but they were almost drilling as we shot. As soon as they got the interpretation done they would drill and they found quite a bit of oil in there.

#342 David: And what part of Alberta is that, I'm not familiar with it?

Dick: It's up around Sangudo is, do you know where Sangudo is?

David: I don't.

Dick: Do you know where Lac St. Anne is?

David: Yes.

Dick: Well, it's between Lac St. Anne and Sangudo.

David: Any other discoveries?

Dick: Well, not being involved in the interpretation, I'm sure there were other discoveries but by that time we had moved on and some of the stuff was never drilled for a year or two or three years later. That was the only one where we were shooting and they were right behind us almost. The delays between us shooting something and somebody drilling it later, I couldn't say that we. . . . if there had been a big bonanza I'm sure we would have heard about it.

David: You didn't find any Rainbow Lakes or Pembina or. . . ?

Dick: We did a lot of shooting at Rainbow Lake and Chevron had some wells there but how much of it was. . . . you know, when they had 12 crews out, how much of it was on our work and how much on somebody else's I just don't know.

#364 David: Any regrets of the time you spent in the patch. Anything you wanted to do, places you wanted to go, you didn't get to go?

Dick: I don't think so. It turned out to be a pretty good life because after 1956 I was always, I mean I'd go into the field for 2 weeks at a time maybe, but I was always around as the family grew up and. . . . It might have been nice to go to Australia but no, I can't say I regret staying around Alberta all that time.

David: Never tempted to go with a major?

Dick: No, not at all. I don't think my personality was suited for working with a big company. The only experience I had of course with it, was at Hudson Bay Mining and Smelting in Flin Flon and even there, there seemed to be a lot of politicking going on. . . . I was even accused of it because being on day shift, I remember the Mine Superintendent and two of the Mine Foremen who had day jobs needed another curler so here I am curling with all

these guys about 55 or 60 years old. So I had the odd guy, are you ever, I won't use the term. And of course, it was just that they needed someone and I was someone they knew that was on day shift, so I curled with these fellows but there was too much, as I say, even in that size company of the people toadying to somebody else and I thought if all big companies are like that I don't know that I'm really interested. And I don't say that all big companies are like that but that can happen. No, I was happy running my own operation, then I didn't have to answer to anybody. You had to answer to the clients in the type of work you turned out and everything like that. But you made the decisions on how to operate and who to hire and. . . I like that. I certainly enjoyed that part of it. And I had good guys working for me, real good fellows, which made all the difference in the world too.

#407 David: How did you find them, word of mouth?

Dick: Well, it was a funny thing, I inherited one of them from General Geophysical and then when I started Norcana I hired him to come with me. He was an observer, ran the instrument truck. He had no technical background or anything, in fact, he'd started on a seismic crew as a cook's helper. He didn't really have and big ambitions at that time I don't think. Anyway every job I gave him, he did such a superb job that finally in 1974 I gave him 10% of the company and . . . it didn't matter what level of a job you gave him, he just grew right into it, he just had that ability. The other fellow, Ted Pattinson, had worked for us at Frontier.

David: The first fellow's name?

Dick: It was Middy Brillon. And Ted Pattinson, he had been with us in Frontier as a Party Chief and I was a Supervisor of Interpretation in Frontier, this was still in Ted Rozsa and my brother's time. And then in 1960. . . I've got to get this right, I think he went with Amoco because contracting had dropped right off and he went with Amoco. And then he ended up with an American seismic company and he was down in Houston for awhile. Finally he came back, he wasn't down there that long really, so he was with some other contractor in between, eventually anyway, he came back to Canada and he was looking for a job. And I said, why don't you come with me because as I say, I had known him since 1952 I guess. So I gave him a percentage of the company and actually made him the manager of the company, you know, to do all the bull work and stuff. Do all that paperwork that I didn't like doing myself. So I was the President and he managed the thing and Middy was a Supervisor and that's the way we worked from '74 until '91. But they were both excellent people. Ted's bought a place down in Florida so he goes down there for 5 months of the year now.

#458 David: What did you do for entertainment. Alongside your career, were you a hunter, were you a fisher, golf, obviously a golfer if you live out here.

Dick: Well, actually during my working years, yes, I always belonged to a golf course. I belonged to Canyon Meadows for awhile and then when we were in Lakeview Village I belonged to Earl Grey and then when I came out here I joined here. But I never seemed to find an awful lot of time for golf when I was working. I'd play maybe 10 games a year.

So I like golf and I always played a lot of badminton. I used to play badminton 3 times a week to keep in shape and I did that right up till 2 years ago when I got this bum hip. As a matter of fact, no, that's beside the point.

David: What's that?

Dick: Well, I've got to go in on January 7th for a hip replacement.

David: Oh good luck with that.

Dick: Thank you. Skiing, we used to ski as a family.

David: Downhill.

Dick: Yes, all six of us skied. And I spent an awful lot of time building a log cabin by myself. That kept me occupied on weekends.

David: Really. Where did you do that?

Dick: Well, as the crow flies, it's about 7 miles southwest of here, maybe 8 miles. It's off highway 762, a little west of highway 762, about 9 miles south of Bragg Creek. So yes, I had 67 acres out there and that turned out to be quite a job. It kept me pretty busy building fences. We had horses out there and there was always something to do. I don't know whether that was a hobby or another job. But it was fun.

#496 David: How did you learn to build the house, the cabin?

Dick: When I say a log cabin, it is a log cabin but I didn't go out and cut the trees and that. I bought a package thing and built it. Put it together myself, wired it myself, I didn't do the plumbing or the heating. I couldn't do that but I did all the wiring and I built a doubly garage and designed it as I went along sort of. How many beams should you put up here. It hasn't fallen down so I guess it's all right.

David: And you'd go there on weekends and so on?

Dick: Yes, it originally was just a weekend place but it developed. I wasn't even going to have a phone, see, it was a way of getting away for the weekend and then as soon as my wife got out there she said, I'm not leaving the girls in town unless I can phone them and talk to them. So then we had a phone and then we had a TV, then we had a big dish. And it just kept growing. Then my oldest daughter was working in the veterinary clinic in Okotoks, she wasn't married so she wanted to live out there, she had horses out there, so I said, okay, live there. So she did. Then she got married. Then we didn't have a weekend place because they just took it over then. And now my wife's nephew and his new wife are living in the log cabin. But in the meantime we build a shop out there with living accommodation above it. So on weekends. . . we don't do it as often as we should but we have living accommodation above the shop so we can go out there any time we want. But it was a lot of work but it was a lot of fun. And that was interesting because as you say, it was something I hadn't done so I had to do a little thinking and reading. Of course, after my daughter got married I had to put an extension on it and then I put another extension. So what started out as a little log cabin, it's about 2,200 developed square feet now. It's not as little as it was.

#543 David: Well, Mr. Baillie, thank you so much for spending this time with us this afternoon. On behalf of the Petroleum Industry Oral History Project, I'd like to

say that we're really pleased and we'll end the interview at this time.

Dick: Thank you.