

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Bud St. Clair

INTERVIEWER: Tina Crossfield

DATE: July 2001

TC: Today is July 24 and we are with Mr. Bud St. Clair at his home in Calgary and my name is Tina Crossfield. Mr. St. Clair if you'd like to say a couple of words and I'll just make sure the tape is working.

BS: Just that I'm quite happy to go ahead and do this interview with you, it's no problem for me to do this.

TC: Very good.

BS: I may not have anything to tell you but. . . there's a lot of things that happen that you don't really take into consideration at the time because they evolve and so you don't take them as being big things that happen but they evolve over a length of time, so it's different.

TC: I have a feeling that the same will be said of what's happening right now in the computer industry, it's grown so rapidly.

BS: Yes, it's grown so quickly.

TC: Yes, and people can think back to when computers took up whole rooms.

BS: Yes, well the first million dollar plus computer that we were involved with, an IBM, doesn't have as much power as a PC that you have in your home now, which I've got in the back room which is more powerful than what we had at that time that cost over a million bucks. So these things do happen.

TC: Incredible. Could we sort of start off and could you tell me where you were born and when?

BS: Yes, I was born in Didsbury on July 27th, 1931.

TC: And who were your parents.

BS: My father's name was Ernest Lester and my mother's name was Ethel Martha.

TC: And were they born in Alberta?

BS: No, they were both born and raised in Red Oak, Iowa.

TC: When did they come to Canada?

BS: 1906.

TC: Wow, so they were real pioneers.

BS: They came and homesteaded here, yes. Got married and came up here.

TC: What did they do for a living?

BS: They were farmers, we had a farm half way between Olds and Didsbury and four miles east.

TC: So it was grain mostly.

BS: Yes, grain and cattle, mixed farm is what it was called because we had cattle and pigs and chickens and everything.

TC: So brothers and sisters?

BS: Oh, a whole bunch, there was 9 in our family, 7 boys and 2 girls. And I was the last of the line.

#028 TC: Really, you were number 9.

BS: An afterthought I think.

TC: Wow, 7 boys and 2 girls. Did anyone in your family, any of your brothers or sisters, go into the industry too?

BS: No, they were all farmers except one of the brothers. He worked for International Harvester for years and then wound up with a couple of agencies. And I got into it quite by accident. I was a third year electrician apprentice and there wasn't much work that winter and this seismic company come to town looking for men. So I decided that I would go work for the winter with the seismic company and then come back in the spring when things picked up with the wiring of houses and what not. So I went to work for Geotech in January of 1950 and that was kind of the end, I never got out of the business.

TC: So you went through to Grade 12?

BS: No, I'm a high school dropout, I've really got Grade 10 and half of Grade 11. I didn't really do much in the way of higher education until after I was brought into the office and then I took several courses at Mount Royal and the U. of A. and whatnot. But it was more on management than it was on geophysics.

TC: And that was through the company, or when you were working?

BS: Most of it was on my own. When we became a big company, like Teledyne, when it came around then there were some company courses at that particular time but that was mainly to sort of, so-called charm courses that big companies put you through you know, so that you do things in their way instead of what you think might be right. So that was no big deal. I wouldn't call that education, that was just something that the company wanted to do. Big companies like to report things in a certain way and they don't always have the same way of reporting. Teledyne was very high on financial reporting and it's something that's kind of stuck with me ever since then, it's a very important thing is the financial reporting of companies.

TC: When you started off working with Geotech what kind of work were you doing?

BS: I started off as a junior observer and six months later I was observing, an operator as they call it now, observer or operator.

TC: What kind of . . .

BS: That's running the field instruments, the recording instruments.

TC: And then, how long were you . . .?

BS: I was with Geotech for two years, left them in January of 1952. Then I went to work for Nance Exploration and virtually never changed after that. Nance was subsequently bought out in 1965 by Independent Exploration, along with Farney Exploration and Exploration Consultants. And then we had a play back centre called CMR, Canadian Magnetic Reductions. So they were all bought out by Independent in 1965 and then subsequent to that, in 1967, Teledyne bought Independent Exploration out, along with National Geophysical here in Canada. And that became Teledyne Exploration in Canada.

#075 TC: Where was their head office?

BS: In Houston.

TC: So tell me a bit about your work path, your career path.

BS: Progression through the companies.

TC: Yes.

BS: I worked as an observer for I guess about 3 years. After a year with Nance I became a Party Manager. Worked as a Party Manager until 1958, I guess it was maybe the spring of '59.

TC: Is that the same as a Party Chief?

BS: Yes. Then I came into the office in Calgary and was an operations manager then for the company, until we were bought out by I Ex and I worked as operations manager for I Ex until we were acquired by Teledyne and then my position when Teledyne acquired us was as Assistant Division Manager. I became Division Manager and Vice-President of Teledyne in . . . I think it was '77. A long time you know, when you've got 50 years in the business, to think back.

TC: Just tell me what I Ex is again.

BS: Independent Exploration. So I was the Division Manager and Vice-President of Teledyne from 1977 until the end of 1989 when the company shut its Canadian operations down. I sold off all of the rolling stock and the building and everything and had everything pretty well cleaned up by the end of 1989. And then I started my own consulting company in January of 1990, which is Saint Management Consultants Ltd.

TC: Is your company still active?

BS: Well, it still has some money. But I'm not actively working, no, it's just a holding company now.

TC: Back in the earlier years, say with Geotech, what region were you working in?

BS: Well, we started in Olds, my hometown, where I was living. We moved from there to Edson and that winter we moved up to Donnelly and worked an area northeast of Donnelly which was called Reno, there's a little village out there with just four houses or something.

TC: And how large would the crews have been?

BS: Number of men?

TC: Yes.

BS: In those days they weren't as large as they are now, we would have about 12 field personnel and 3 office personnel, so 15 people probably.

#120 TC: And oil companies would hire the companies to go out?

BS: That's right. At that particular time we were working for Shell Oil.

TC: What was it like out in the . . .

BS: Well, it was pretty primitive in those days, the Peace River was not at it is today. Peace River today looks like regular farming country around here, in those days it was all bush, there was hardly anything, the farms hadn't been formed yet. So it's quite a difference. When I went to work for Nance the first time, we went up on the Alaska Highway for a short job for Pacific Petroleum or Phillips Petroleum I should say and it was a little place

called Lum & Abner's???, it was at Mile 233 on the Alaska Highway and it was log cabins that we stayed in. The first day that we were there, I'd never seen a dog team before and one of the old priests that did all the work with the natives up there, he come in with his dog team one day, it was the first time I'd ever seen that. And that was a long ways north in those days, going up the Alaska Highway.

TC: So the work took place year round?

BS: In those days yes, we worked 12 months of the year. We'd have off, maybe a couple of weeks in the spring for spring break-up.

TC: How about the composition of the crew, were they mostly Canadian men?

BS: In those days, a lot of the key men were U.S. personnel. Usually your operator, your surveyor, your Party Chief and chief computer at least, were all U.S. people. But the particular company that I worked with at that time, Geotech, really were training people as quickly as they could to get Canadian personnel. It was a lot simpler operation in those days because I went from knowing nothing about the industry to going to work in it then becoming the observer which was considered as the field manager, in six months. And I was 18 years old.

TC: Oh my goodness.

BS: So the chance for progression was so much greater then than it is now. If you had any initiative in those days you could get ahead pretty quickly.

TC: Was that a difficult task to be the party manager, the party chief?

BS: No, I never thought it was. I always got along with people so it was no big problem. Everybody, most of them were pretty mature people and they knew their jobs, they knew what they had to do. I don't think it was as much pressure as it is today you know. We didn't have the pressure to go out and produce large amounts of work, large volumes of data. We used to go out and shoot two miles a day, which was 8 holes and now they go out and shoot 2 and 3 hundred holes a day. But with much more sophisticated equipment of course, we had very simple equipment and there wasn't the pressure to get over a lot of ground. The oil companies seemed to be more interested in quality, you'd spend time trying to get good records and testing and whatnot, that they don't seem to do that much anymore. And one of the reasons they don't have to do it anymore is that pretty near any area that they go into now, there's been a past history. So everybody knows what the problems were, whether there's a lot of sand or gravel or muskeg or whatever might be the problem on near surface and that sort of thing. So it wasn't the learning curve that we had in those days because pretty well every area we went into was brand new, nobody knew anything about it. So geologically and everything, it was a new frontier.

#177 TC: I know that there were other seismic companies around at that time . . .

BS: There were. I don't know just how many there were to be quite frank with you. But I really think it got up into the numbers, not maybe when I started but a few years later there were like 40 or 50 crews. When we moved on this crew in Wetaskiwin, the Geotech crew, that would be the summer of '51, spring of '51, we were the 21st crew to move into Wetaskiwin. There was 21 crews working out of Wetaskiwin at that time. And that was just when the Leduc field had been found and they were running a swath down, sort of

west of the highway there, from the highway west about 25 miles, there was just a long swath. And as the crews kind of worked down through these areas the rigs just come right in behind them. It was funny how fast, it was within 10 days of the time you did your work, we did a quick interpretation on it and if there was an anomaly they came in and they drilled it. It was very fast.

TC: How many crews did Geotech have?

BS: They had the two in Canada, one worked for Texaco and one worked for Shell at that time, the time that I was with them.

TC: You weren't stumbling over these other crews all the time were you, from other companies?

BS: You had some problems at corners, because you'd have your cables laid east-west and another crew may have their cable laid north-south so you'd have a problem because you'd have a cable over a cable going the wrong direction. And sometimes picking the cable up was a bit of a problem. But that was, you know, it happened but it wasn't a big deal.

TC: How about say, in the evening, would you be at the same, well maybe probably not hotel, but did you cross paths with other crews socially?

BS: Oh yes, lots.

TC: Did people talk about some of the problems in the work?

BS: Not too much, it was . . . unlike the U.S., the Canadian companies always seemed to sort of melded together, they had friends everywhere. In the U.S. it seems like it's almost an unwritten law that you don't associate with people from another company. Where here, socially, we have always been together in Canada. You know, I think that kind of shows with the Doodlebug Golf Tournament and with the curling and the tennis and everything that went on. There's been kind of a social function built around the industry.

TC: It becomes sort of like a camaraderie.

BS: Yes, we do in Canada, there was always good. . . where the U.S. didn't have that. I found that was very strange to me, the first few times I ever went to Houston, I would see people that I knew where I was staying with another company and we'd be having a drink after work or something and I'd go over and talk to these people and the people from Houston thought that I was crazy talking to the competition.

#226 TC: Was there any sharing of information, technically?

BS: Oh no. That was pretty closely guarded.

TC: Even in methods?

BS: Yes, even in methods. Every company, like Shell and Gulf and Imperial Oil, they all had very distinct ways that they did their field work, laid it out. So that sort of thing was watched pretty close, you didn't pass that sort of thing around. And the instrumentation and things like that, Geotech had instrumentation that they felt was a proprietary type thing, they didn't want that to be looked at by anybody. But then it wasn't too long after that, that TI come along and SIE and whatnot and then everybody started to pretty well share in the same instrumentation, because it was a commercial product then, instead of something that was developed by your own company.

TC: Okay, so tell me what TI means?

BS: Texas Instruments and SIE is Southwestern Industrial Electronics, which are two of the big instrument companies in the start. They were not the only ones, there were several others, there was Electro Technical Labs and a few others but they were the big ones.

TC: So prior to that, would you have made your own instruments?

BS: Geotech did, they designed and made their own instruments and they were fairly well thought of. At the time they were the supplier to the U.S. government for all the instrumentation at the Bikini Atoll tests, you know, the atom tests. And they had a big lab in Virginia that did nothing but government research work. And they did a lot of work for the government through the atom bomb testing and security work around bases. They used geophysics for security on bases and subsequently of course, Teledyne had a lot of work in their day, with the U.S. Navy and whatnot and that was for the sensor rays that were laid in the Arctic by atomic submarines and whatnot, for the early warning and whatnot. So Teledyne, actually Teledyne subsequently took over Geotech so this is kind of, I think, something that ran right through the years. Geotech did this for years and then Teledyne took them over and continued on doing it for the government.

TC: I hadn't realized the geophysics world stretched that far, right into the military and security.

BS: Well, in one sense, it's almost the way geophysics started, was through the war and they had a sort of a geophone that they used and they would time their artillery blasts and they would try through refraction and reflection, figure out how far their targets were away that they were hitting, whether they were coming close to their targets with artillery. So that was one of the early things in geophysics, was really in the war, in the First World War.

#285 TC: Just out of curiosity, the technology to try to predict earthquakes and that kind of thing, is that similar at all?

BS: I guess it is. I don't know that much about it but I think what they're trying to do is set up a sort of a curve of events that subsequently will lead to an earthquake. The vulcanologists??? and what not, I don't think it's a real science per se. They're trying to figure out.

TC: But like the Richter scale and all that, is that the same sort of a thing?

BS: Yes, that's the same type thing. When we went up for Teledyne, up around Whitehorse and up around through there, we had several 7 or 8 hundred foot holes and we cemented in sensors in those holes and there was 24 hour recording on those things. And that was for when they were checking the Russians out for atomic testing and whatnot. And there would be sensors scattered all over North America of course, and then they would triangulate as to right where this blast was. And that's the same, they do this with the earthquakes, they can tell where an earthquake happens under the sea, even though it doesn't erupt up because they triangulate from different stations.

TC: Describe how the technology changed, as methods got better and it went to tape and so on.

BS: Well, you went from the old tube type instruments, like the old tube radios and whatnot

and then you went to the transistors. When the transistors came in we started to do analogue recording. Then following that the technology went to digital recording and the digital was a frequency modulated return instead of the analogue. And that's still pretty much the same, they still have that today. Except the big change that's happened in recent years was, you went from 120 channels to the big multi-channel crews doing 3-D's and whatnot, that maybe have 2,000 or more channels alive at the same time. Where most of the operations doing section work or just reconnaissance work, you're probably going to be at 120 channels, sometimes up to 240 but basically it's 120 channels that's used for the reconnaissance work. But when you get into the 3-D work they lay out a patch of lines of source lines and then you have the lines of recording line, so you've got poles or vibrator points going across here, you've got all your other lines coming down here. You record them all at once from every source point, you record the whole patch. So that's why they have so many live channels, 2,000 or 2,500 live channels. And sometimes the areas are so big that that's not enough, you have to do a patch and then you have to change over, move everything over and do the other patch and just keep moving over. It's sounds very exotic I guess, or tough, hard to do but it's very repetitious once you've done it in the field. The big thing now is, with the government regulations, they got so tough that a lot of the recording. . .[phone rang].

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Tape 1 Side 2

BS: [in mid sentence]. . .type of recording instruments and that sort of thing and they've got more sophisticated in that respect but the method is still the same, it's a reflection seismic that you're running basically. There's still some refraction work done but very little. But the thing that has made it all, I guess, more precise really, is the computers. You put your data now, through the data processing centres and they massage it electronically and it's just a lot better than it used to be. And of course now, with the 3-D technology, once they have got that they come up with a 3-D picture that is pretty hard to beat. It probably cuts the possibility of having poor results from your big rig drilling down to where it's a little more manageable. Before there used to be a lot of dry holes. There's still a lot of dry holes but they have a lot better chance now.

TC: So with the computer advances, it's easier to suppress noise.

BS: Well, they do yes, through cancellation. And what they do too, is they do a form of what they call stacking. Where we used to have one trace in the old days, that you had to pick, well now you will stack 12 traces. So you'll have that same trace will be coming in from 12 different sources. So you have a cancellation there of noise, that helps a lot and cleans things up.

TC: Did you ever go to the 24 trace?

BS: Well, that's what I started with is 24 traces. That was a small set of recording gear compared to what they have now.

TC: I heard that some companies had 12 and that others had 24 and the 24 were quite an

advantage.

BS: The smallest that I saw was 16 and there was a Nance crew working for Canadian Superior out of Olds that had a 16 trace crew and that was the smallest that I ever saw, I never saw anything smaller than that. I saw some of the records, the old stuff, from Heiland and whatnot that was smaller.

#038 TC: I went to talk with Norman Jones yesterday and he was telling me about his time at Heiland.

BS: Yes, I think I probably met Norm about 1948 or something like that too, and he was with Century then.

TC: So the method that's used today has been around for 20 years.

BS: Oh, longer than that, 50 years or better, the reflection method. They've just refined it, it's the same method but they've refined it. Reflection seismology has really never changed, it's been that way from the first time they put a crew out but they didn't know that much about it. It started out as being a very imprecise method and now, I think, that geophysicists are now considered as being scientists instead of being just wiggle pickers, as they used to be called.

TC: Was it difficult to learn how to interpret that data?

BS: I was never really that involved with the interpretation. My expertise was really all field management and that. So I was involved in the interpretation up to a point but I was never what you would call an interpreter. I was strictly field management.

TC: Okay. So just backing up here, I think you told me that last you were on the Alaska Highway there, where did you go after that?

BS: From there I guess we came down and worked in Red Deer for awhile and then down to Cardston. And then they shipped me to the U.S. for the summer. That was right at the height of the Korean War and they weren't going to even, they held me overnight at the border, at North Portal because they weren't sure I was going to be doing what I said I was going to be doing. They had to have the border patrol check the company down in the town where we were working out of. Then we had a little court the next day and advised me that it's a federal offense if I committed perjury. And I didn't know too much about it, I'd just been sent down there, they said go down there and go to work you know, that's what you did. And they wanted to know where I was being paid from and I said, I don't know where I'm being paid from, whether it was Calgary or Houston, where it was going to be. So they had to find all that stuff out and they finally let me go but when I left the courthouse the old border patrol guy there, he said, son, I'll give you some advice, if you're here one day over six months, you'll be wearing U.S. khakis. So I came back about 2 weeks before 6 months was up in the U.S. I worked in North Dakota and Montana.

#073 TC: Tricky times.

BS: You don't want to have all the names where I worked because just the towns I worked out of before I moved into town here and that was for like 9 years I guess, or something, the most I could come up with is 25 different towns, to say nothing of all the bush areas that I worked in in the winter times. All over western Canada and some in the States.

- TC: What were some of the challenges that you faced as a Party Chief?
- BS: Well, after I got married the big challenge was finding a place to live. When you get married, these little towns had no apartments and that available, so we wound up buying a trailer because there was no place to stay. So we trailered, after I got married, for 6 years, before I moved into town. We did Saskatchewan, Alberta and B.C., 3 provinces in a trailer in 6 years.
- TC: What year did you get married?
- BS: '53. Just had our 48th anniversary last week.
- TC: And do you have children?
- BS: 4 children.
- TC: So your move in to town, would that have coincided with school age . . .
- BS: Before they were at school age. I guess just right at school age. One year after we were in town our little boy started to go to school.
- TC: Do you have girls and boys?
- BS: We've got three boys and a girl.
- TC: With travelling I guess, with the trailer, you and your wife, how did you find a social life, what did you do in your off hours?
- BS: You pretty well found it within the crew members.
- TC: And were they similar, did they have spouses along?
- BS: A lot of them did yes, we had 4 or 5 married couples on the crew, maybe more sometimes. We didn't stay long enough to get too much in the way of friendships going in towns. It was a little difficult.
- TC: Were town welcoming?
- BS: Yes, I never had a problem at any town I ever went into. Some crews did have. But I never went into a town that didn't want you there, they were happy to have you there.
- #109 TC: I've lost track of what year we're at now.
- BS: Where did you get to, what were we doing?
- TC: So you left Geotech in '52.
- BS: And went to work for Nance.
- TC: Went to Nance.
- BS: Worked with Nance until we were bought out by Independent Exploration in '65.
- TC: So what do you remember about 1965?
- BS: Well, it was an amalgamation of 3 field operations and a play back operation. I can remember the melding of 3 companies together, you had a lot of people that covered the same bases with these companies so you had a lot of people unhappy because somebody would be given the job and the other two would not get it. So there was a lot of unrest for the first couple of years. In fact, we just kind of got everything straightened around and then Teledyne bought us out and we started all over again. So it's not an easy situation to get into these amalgamations of companies.
- TC: So there was quite a bit of downsizing in personnel then?
- BS: Not really. We continued all the same size operations and people were accommodated but they weren't happy with their jobs, some of them.

TC: But no big job losses at that time?

BS: No, none. Any of the amalgamations there was actually no job loss, people quit because they didn't like the situations but they never had their job taken away from them. And their pay grade never changed or anything, even though they weren't doing the same job maybe. One of the things that changed over the years, changed probably about the time of the NEP in whenever that was, '79, '80 or '81, I'm not sure just when it was implemented. But up to that point in time, the companies that I'd worked for had worked basically for major oil companies. And when that happened there was so much I guess, indecision that a lot of the oil companies just shut off their exploration budgets. So at that time you had to start going out and looking for work from, usually smaller companies, independents and whatnot. So the continuous operations that we'd had up to that time kind of come to a cease and then you started the hit and miss operations in the summertime. The winters were no problem, you always had enough work in the wintertime but the summer times were very poor. So companies started to see their profit line change appreciably. I remember one good thing, shortly after I come into the office, every year you had to renew your contracts with the major oil companies and Imperial Oil at that time, their renewal came up and I talked it over with my boss, who was John Fuller and we decided that we'd just leave, we would try and get an increase, we were doing all right and making a pretty good profit on the crew. So I wrote the letter to Carl Chapman who was Imperial's rep that we worked through and told Carl that we were happy to keep our fees the same as they were last year. Carl phoned up a week or so later and he said, you know, I appreciate your keeping your fees where they were but we've done a little study and your costs have gone up, the cost of fuel has gone up, the cost of labour has gone up, part etc., we think that you need an increase. So Imperial gave us a 10% increase on our fees, nobody had ever done that before or since. Because now you've got into the situation now where, boy, it's the low bidder. In the days when we worked for the major oil companies you had a rapport with them and you were assured of a job. Unless they had major cuts then you wondered whether you were going to have a job or not but basically, you were just assured of going to work for Imperial every winter and Gulf every winter and Chevron every winter and Aquitaine, you had these contracts that just rolled over and over. You were in competition of course, you made bids but I never was accepted on a bid that they ever asked me to change it because I was higher than the competitor. So they would have bids that maybe were higher and lower than each other but doing the same jobs. But just because they figured that you had a good operation and good equipment and good personnel, you'd get the job year after year, it just kept rolling over. They only thing they might insist on is they might insist on two or three key personnel that they liked.

#180 TC: Plus you were working for the smaller independents.

BS: Well, that's what's true now. The major oil companies used to probably be 90% of all the geophysics done, now the major oil companies probably are less than 40%, probably 30% or less of the amount of geophysics done. I have a lot of good memories, met a lot of good people and I have to say that over the years there's probably only 2 or 3 people that I

disliked, that I had to deal with, over 40 years, almost 50 years actually.

TC: Did you stay with Teledyne, right through to retirement?

BS: Yes.

TC: Yes, I think you might have told me that.

BS: Yes, I did. I'll give you a biography here that you can have. I don't know why I even made this up, it was made up for some reason or other.

TC: What is it like working with the smaller companies?

BS: Usually with the smaller companies you were only involved with one person. They'd have a chief geophysicist or an area geophysicist that you'd deal with. Where the big company, you might be involved with sort of an operations type plus maybe, the geophysicist who was doing the interpretation on the crew. And in the days when they used to do a field interpretation you had a little broader rapport with the oil companies because you'd go in, sometimes weekly, sometimes monthly and meet with their area geophysicist or whatever, so you got to meet more of the working staff of the oil companies in those days than you do now. I think there was more sort of hands on work with interpretation, now with the computerized work that's being done, it's not quite the same as a personal interpretation that you used to have. Companies would take and say I want this guy because he is very good on a reef play or he really has a good feeling for a stratigraphy play. They would go with people like that because these people had sort of specialized in that one thing. Well, the computer doesn't specialize in anything, they do everything for you. So it was a little more personal then, in the older days. I hate to call it the olden days but I guess when you're 70 years old you've got to.

#222 TC: You can have people that are pretty gifted at what they do?

BS: That's really what it was initially, it was people that had a real feel for it.

TC: Sure. And it does make a difference I think, with how the data is collected.

BS: Well, I think too, early on there were not really a lot of real geophysicists. Geophysics was just starting to be taught in the late 40's, at places like Colorado School of Mines and in western Canada, I don't know when the geophysics courses came in but fairly late in the game. So the early interpreters were a lot of geologists and people with electrical engineering degrees and things like that, any degree really, math and physics. So I think that it spawned people that had a feel for it, they really didn't know geophysics per se, they knew the principles and how to apply it but they weren't geophysicists and a lot of them weren't geologists. A lot of them didn't have degrees, that had a feel for it.

TC: My father was 35 years with the Bell Telephone and started off sinking poles, as a lineman, stringing cable, and he found out he had a knack for finding troubles in the line. And that's what he was known for and what he was asked to do. And he was a man with Grade 8.

BS: We had two electronics people that worked for us, actually they came from ???, they were two brothers. The one brother had some training in electronics, the other one didn't have. The one that didn't have any training, he had a mind that worked, you know, any trouble that came up he knew right where the trouble was. You didn't have to run a bunch of tests or anything, he just knew what would cause that trouble and he'd help the operators over

the telephone, how to fix something and he was just fantastic. Doug Ross was his name. Doug and Dick Ross worked for us for years. They were both good but Doug was, he was just a wizard really at what he could do. Again, there were several people like that in those days. And maybe the circuitry was not as complex as it is now, I don't know. It's interesting anyway, that some of these guys were good.

TC: I always felt that university was a step behind what was happening in industry? The people who were out there doing the work knew more than what was being taught in courses, you know.

BS: I think that was true at one time, I don't think it is anymore.

TC: Probably not now. Except the computer thing worries me a bit, that there's too much reliance on computer and not enough of the personal.

BS: Well, I suppose you could say that about anything. You worry about kids going to school and not learning how to multiply and add and divide. Because they use a computer all the time, they don't have to know how to do it, they don't have to work square root or anything, they can punch a number in and pull the square root off just like that. So you get so you say, these kids don't notice anything. And sometimes you'll notice it, if you notice cashiers sometimes, they don't know how to handle numbers. So I guess maybe it goes right back to that sort of thing. Maybe computers are going to take over.

#282 TC: Well, in a couple of disciplines now, the one I know is ornithology, they're teaching ornithologists to identify birds on a computer and they might never go in the field and actually look for the bird in the tree. They know what it looks like on the computer, they know what it sounds like from the computer audio system but turn them loose outside and they can't identify anything. And I heard that geology is kind of similar that way, there's a lot more in front of the computer and a lot less, actually field work.

BS: I think they accomplish things so quickly with the computer, that's the thing, you're not spending hours and hours because the computers is doing all your computations for you. You're talking about the birds though, there's a little side thing, I don't know whether you ever watch golf or whether you play golf or not. You know, at Augusta there, there's a beautiful tee box there with all the azaleas and what not on it and you'll hear the birds singing and whatnot. Well, some ornithologist was listening to this and there was a bird chirping away in the background and he recognized it as being a bird that was absolutely impossible to be in that area. He found out that the TV stations have got sound tracks that they're putting on, just like laugh tracks. Because they think it looks nice, you know, they've got this pretty tee box and the trees and there's a bird singing in the background. The bird has no reason to be there because it wasn't. . . so anyway this guy, he phoned the network and raised hell. So they said that they would pull it, they wouldn't use them anymore but I don't know if that's true or not, but they got caught on it anyway.

TC: Did any of your children end up in the industry?

BS: All three of the boys were in it for a certain length of time. Currently there's one that is a contract surveyor, the other two are out of it.

TC: And what are their names?

BS: Rick is the oldest one and Kim is the second one and Phil. Kim is still in the business as a contract surveyor.

TC: And what does Rick do?

BS: He's working in Vancouver and I'm really not too sure exactly what he is doing. We don't see much of him anymore.

TC: And Phil?

BS: Phil works for Prudential Steel here in town.

TC: And you have a couple of daughters?

BS: One daughter, Candice.

TC: And what does Candice do?

BS: She works for the Alberta government as a Social Worker, she's child welfare.

#336 TC: Could you elaborate on what you remember about the NEP?

BS: Not on the NEP itself but on some of the affects it had. Industry wide, it wasn't just us, but industry wide we found our bottom line, our net profit just going down on a very steep slope. And that's what predicated Teledyne leaving Canada in 1989. Our net after tax was decaying very rapidly. We never did write any red ink, we always were profitable in Canada. We were in a situation at that time where to stay in the business any longer we had to spend a lot of money on new instrumentation, on the big multi-channel systems. And it was a business decision to not stay in the industry up here because nobody was giving long term contracts and for a company like Teledyne, we had to justify the purchase of equipment and that we were going to be able to pay it off in a certain length of time. Well, at that point in time you could have said, okay, we can certainly work in the winter months, maybe 3 or 4 months in the winter time but we couldn't guarantee the company that we could work that equipment any more than maybe 4 months of the year. Well, we couldn't make enough in 4 months of the year to justify buying \$8 million worth of new equipment. And that was really only half of the new equipment that I was going to need, so it was a business decision to just get out of it, because it had, from their point of view, with the government interventions, it had ruined the business climate. So they got out of it. Strangely enough, they ultimately got out, about 2 years later, in the U.S. too. Because the U.S. had become I think, similar, very difficult to keep. . .

End of tape.

Tape 2 Side 1

TC: So Teledyne folded then?

BS: They shut everything down, yes, shut everything down. The only thing left in Canada that Teledyne had anything to do with is, I bought all their spec data. I still have that. They sold their property here and all of their equipment and shut everything down as of the end of 1989. They made this decision to shut the company down in the middle of September so I wound everything down from the middle of September to the end of December, sold all the equipment, let all the people go. And we had about 65 people at that time working

for us, in field operations and play back centre. So it was not an inexpensive thing to get out of because there was all payoffs and we had a lot of 20-35 year employees.

TC: So were there people ready to retire.

BS: A few but basically they were let go so they were paid a package.

TC: What would have been their chances at finding other work in the field?

BS: Some did, some had trouble. Myself I just went into business myself, so I had no problem. I shut Teledyne down the end of December and went to work for Sask. Oil on the 2nd of January. So I didn't have any down time.

TC: You didn't even get a holiday.

BS: To get everything cleaned up before the end of December, I had 3 Nodwells that hadn't been sold, so Jack Visser and I bought them ourselves from the company and we sold them later on.

TC: And you retained the spec data?

BS: Yes, I still have it. I bought that, that was actually kind of part of my package that I took.

TC: Did people purchase that, or copies of that, from you?

BS: Oh yes. Actually it's managed by Kary Data Consultants downtown, they handle all my spec data. It was started up by a good friend of mine, we worked together for years, Dale Kary worked for Teledyne for years.

TC: Was there much demand for that. . . ?

BS: It's getting less because the data is getting older, but I've sold three sets of data this year. It's like getting money from home because everything is paid for.

TC: Is it in a digital form?

BS: Oh yes. It's all pretty well recorded, there's good parameters and everything. A lot of the eastern Alberta stuff that's still very good data for that. You find out there when the land rolls over every 3 or 5 years or whatever it is that they can hold it without paying penalties you know. Somebody else will come in and pick that land up and have a look at the data again to see whether they can see anything that they think is a play in there. It's amazing, it gets used over and over.

#041 TC: I imagine some of it would be hard to redo today?

BS: Not really. It would be more expensive.

TC: Unless there's a housing development sitting on top of it or something.

BS: Yes. But most of this stuff is out in the country, it's just road allowance work, so it's something that could be duplicated.

TC: I heard that Pinebrook, the golf and country club out there, that the golf club residential section used to be some interesting land but it would be very difficult to go in and measure things and . .

BS: Oh yes. I was a member there for 22 or 23 years, I just sold my share 3 years ago.

TC: Do you still play golf?

BS: Oh yes. There's lots of places to play golf though.

TC: What did you enjoy most about your career?

BS: I guess it was never repetitious, every day was different. You had different problems every day. Every area that you had to bid had different problems. So it wasn't just a flat

thing of saying, I'll shoot it for x number of dollars a mile or kilometre. Because every area is different, it has different problems that cost money. It can be gravel or it can be sand or it can be really rough terrain. If you're in the bush then every creek crossing, you've got to have hand cutting, you've got to take all this into account. So every job was a different thing to look at, nothing was ever cut and dried. So you never got tired of it.

TC: I guess the people too, people are individuals and things happen to them too eh?

BS: Yes.

TC: Did you ever have any mishaps in the field?

BS: Not on any crew that I was on personally. We had a mechanic, I think he was a mechanic on somebody else's crew that was asphyxiated one time. It was a truck that had a heater at the back and it was used to pick up food for the camp, it was a van type thing, and he got stuck and couldn't get out so he was sitting in the truck waiting for somebody to come along that would get him out of the snow bank. And the truck was running and where the heater hoses come out there was a little room around them and where they stuck there, it was right where the gas was coming up, so it filtered into the van and he went to sleep and never woke up. That's the only time that I can remember one of our employees being hurt. We had a water truck driver that dropped dead on the crew. It was rather a strange thing, he had a break down of his truck, I think the transmission went out or something. So he borrowed a truck from us and there was another young drill helper who got hurt that day, hurt his hand, got caught in the pipe. So he was going in to go to the doctor with this fellow. Again, this was way east of Peace River there, in by Pearless Lake there somewhere. And the got stuck again, couldn't go ahead, couldn't go back and they'd passed a cat camp not too far away, so they were walking back to this cat camp. And this guy was I think, 21 years old, and everybody thought he was healthy, himself included I guess, but just before he got to the cat camp he just played out and sort of passed out. The other kid built him a little fire and then he ran the last 3/4 of a mile to the cat camp and got help and when they got back he was dead. He had an enlarged heart, he had heart conditions that he wasn't even aware of when they did an autopsy on him. We were very fortunate, we didn't have a lot of problems with bad accidents.

#092 TC: Not even with the dynamite or. . . ?

BS: No, no. Dynamite you know, sounds as though it's very bad stuff but handle it properly, it's pretty safe.

TC: That would worry me a lot.

BS: The dynamite is very safe, the thing that is not safe, or you handle carefully is the caps. They can blow your hand off or take an eye out or whatnot. But the dynamite itself is very stable. You could take dynamite and break it over a wooden chair and it wouldn't bother, as long as it wasn't metal and sparked. You can burn it to destroy it, it burns just like firewood.

TC: Really. I think it's interesting, you could just buy it off the shelf in a hardware store.

BS: Used to, yes. Gordon Black used to own, well, his family still owns, Explosives Ltd. They started out as a hardware store in Lethbridge, Western Canada Hardware or something, I forget what Gordon's hardware was called down there. But they were the

ones that started selling CIL powder to the industry.

TC: How about colleagues, like closest colleagues?

BS: Still very close with a lot of people. We play bridge with two groups, 8 people, all industry people that we've known for 30-40 years. Still have a lot of very good friends in the oil industry that we worked for and socialize with them. And we have an awful lot of outside friends as well. That's one thing about the industry, you never really stayed within the industry, there was always community and church and so on that you were involved in that got you away from the industry. When I joined the Gyro Club because I wanted to be involved with more people that were not in the industry you know, because you get kind of stagnant just knowing one line of people. So I joined the Gyro Club to meet other people, which worked good, that was very nice for a few years.

TC: What does that club do?

BS: Well, it's not really a service club. It's a fraternity of friendship, it's called. It's nation wide, North America but you never hear much of it because they don't really take on any causes. We did some good things for the nurses at the hospital, we always had one or two that we financed each year in their studies for nursing. But that was never a pressure thing. Where like Rotary and whatnot, they do a lot of things for parks and all their outgoing stuff so they're always raising money for something. That wasn't our idea, it was friendship.

#133 TC: And interests, you mentioned golf.

BS: I like to play bridge and golf. And in later years I've got more interested in gardening and whatnot than I used to, it used to just be grass but now I kind of like some of the other things. I'll show you the back yard before you leave.

TC: You have a very pretty spot here.

BS: There's nothing in the front because this is a big wedge lot, everything is in the back.

TC: Is there anything else that you'd like to stay about your career.

BS: I don't know. Go through this and. . .

TC: Do you have any regrets or things that you wish you could have done?

BS: Not at all.

TC: Would you have done it all again?

BS: All the stuff is on here. I was a business manager in '77 for the CSEG. I was the 19th Chairman of the Doodlebug Golf Tournament in 1971, I was the CAGC President in 1983 and was one of the original founders. I was the Treasurer and Director of ??? Gyro for awhile. In '81 I got the meritorious service award from the CSEG and in 1990 I got the honorary lifetime membership from the CAGC.

TC: What is CAGC?

BS: Canadian Association of Geophysical Contractors. It's an offshoot from the IAGC, which is the International Geophysical Association in the U.S. I guess kind of 2 or 3 of the big American companies, Teledyne and Western and United, kind of pushed to get it up in Canada, they wanted to bring the IAGC into Canada. Some of the smaller Canadian contractors didn't like the association of the American contractors, they wanted a

Canadian Association. So we formed the Canadian Association, along the lines of the international one. But I guess a different approach to business and whatnot because we wanted to do what was involved with Canadian operations and we didn't want anything to do with the U.S. operation. But it's a very good association. We were very active in the early days and I think they still are, with government committees, liaison with government, forestry and etc., fishing, wildlife and all those different ones.

TC: Do you have an annual conference with that group and do you get together to . . . ?

BS: They have quarterly luncheon meetings. They used to have them every month but I think they've gone down to quarterly meetings now. The general meeting is in December, just before Christmas sometime, usually the middle of December. But it's a very good association. They have oil company members, as well as contractors. They still do a lot of government liaison work.

TC: Is it issue oriented or financial oriented?

BS: Issue.

TC: It's all issue. That's interesting, I hadn't heard of that group.

BS: No. I would say that our main track was working with the government, trying to be on an even footing with them. We did work with B.C., Alberta and Saskatchewan.

#183 TC: When were they formed?

BS: I was the President in '83 . . .

TC: Were they by chance formed when the NEP was. . .

BS: I think it was formed before the NEP. I think that was formed in that latter 70's. I don't know whether I have anything that would even give us that information, I don't think I do here.

TC: Do you put out a publication at all?

BS: Just to members. And they're just reviewing what their contacts were with the government, what's happened on committees. We have a full time Director, Manager, whatever you want to call him, Bill Kammermeyer and Bill spent I don't know, a good part of his career, 20 years or something, working for the government in Edmonton, through forestry and whatnot, doing a lot of work on the geophysical side. So Bill was a big help to us. But they'll be listed, they have an office listing in town.

TC: It's interesting, I was listening on the news on the way out and they were talking about the Kyoto and that some people feel that's going to be quite close to the NEP program, that it will mean big losses for the industry or for Alberta.

BS: I don't doubt it because it will cost a lot of money for them to comply with it. But the U.S. is not going along with it apparently.

TC: No, they weren't at the table apparently.

BS: But I don't know what it will cost them here. I don't know how badly they're in arrears at getting their emissions down or whatnot, I have no idea, I don't have a feel for it anymore. I would guess that it would affect the refining end of the industry and that sort of thing, gas plants and all that sort of thing.

TC: But I guess it's all connected, it comes right down to the consumer too.

BS: Oh sure. No more hair spray.

TC: I never use hair spray. And I don't have an air conditioner either.

BS: Well, they don't use oil and gases anymore for the air conditioner, so they're okay now.

#227 TC: Did you have some things out you wanted to show me?

BS: No, I just had those things there in case you asked me some questions.

TC: Okay. Well, I'd like to thank you for taking the time to talk to me, it's been very interesting.

BS: I don't think there's much else. You don't want anything on the company backgrounds or anything anyway, that would get too cumbersome.

TC: Unless there's something interesting in there that you'd like to explain.

BS: No. I think just the tie up of when the amalgamations come about between the companies, IX and Teledyne, that's the main thing. But that does give you some of the things.

TC: That's great. Just out of curiosity, the geophysicists didn't suffer the kinds of job losses that some of the workers in the petroleum industry did, in the oil . . .

BS: In the NEP you mean. There was a hell of a lot of them had to go overseas to seek work elsewhere in the foreign field and whatnot. There was quite a disturbance at that time. I think it probably affected every oil company because every oil company downsized. It affected a lot of people.

TC: So it directly affected the geophysicists?

BS: Oh definitely, yes, very definitely. And it took quite a while. You're talking about a 10 year period before you saw things really turn around. So it wasn't something that was over with within a couple of years or something, it was a 10 year period before it started to turn around and come back.

TC: So when did you feel it was on the upswing again?

BS: About '90, '91, I think it came back to where it was. . .but I'm kind of talking out of turn there because by then I was no longer a contractor anymore. So you get out of step very quickly but I kind of think that shortly after that, that the companies started to show a pretty good profit again.

TC: And there was another dip about '95 or so.

BS: You know, again, I'd be talking out of school if I talked about it because I wasn't really involved with it financially, I just don't know.

TC: Okay, fine, I'll just turn the tape off now then.

[from here on it doesn't sound like they are wearing their mikes so it was harder to pick up certain words]

BS: It was either 1970 or '71 that we went to the Arctic for Imperial Oil with the new track crew and the year after that we put a track crew into the Arctic Islands for Gulf Oil and worked on several of the islands in the high Arctic and subsequently moved back down to the mainland Arctic for Gulf for 2 or 3 years. But I think it was about '71 or '72 we also took over Imperial's marine operation in the Arctic and worked for about 12 or 14 years, I'm not sure, but a number of years, doing drag cable, marine shooting in the Beaufort Sea. A lot of Imperial stuff was near offshore there, so we worked a lot of the shallow waters in there in the Beaufort Sea. There's quite a shortened period of time that you can work, there's only a window of about 70-75 days maximum that you can work in the

Arctic because of the ice. ??? when the ice will go out and the ice will come in, so sort of ice free time, 60 days and then you had another 15 days that was hit or miss working because of conditions.

#289 TC: So how was it done?

BS: You worked with two different boats up there. The first boat that we had was one that Imperial had built in Hay River and taken up in pieces and it was a flat bottom boat to work the shallow waters. Which wasn't very good because we couldn't, it was very difficult to keep on line, even with thrusters on, we couldn't keep it on line. We'd drop the cable on the ocean floor, the sensors were all in the cable and we had, it was a combination gas gun, airgun type thing. It was an Esso design. We ran that for many years for them up there. We had one instance when we were working up there, where we did a rescue mission for them. ??? Air was flying some federal wildlife biologists out and their plane went down about 1/4 mile from where our ship was. So our rescue boat went out and picked these people up and got them on board and they were just on the edge of being in real trouble with hypothermia. So we had a rescue situation there and it always made me mad because to my knowledge, neither Esso or ourselves got any recognition from the federal government for hauling these people out of the water. There's some personal stuff that I could tell you about that ???

TC: That's a shame because you saved those people's lives.

BS: It was fortuitous, the Party Chief we had up there at that time, he was a young fellow and actually he was a mortician by trade but he had just taken, on his own, because he knew he was going to be in the Arctic, he had taken a course on hypothermia, what to do. And because he knew what to do he probably, the one lady biologist, he probably saved her life the doctor said, that she was the worst off of all of them. I forget how many, I think there was the pilot, an engineer and I believe, three biologists. Then after we worked this flat bottom boat for awhile out there, Imperial decided the design was poor, we needed a different boat so they custom built a boat in Vancouver. And we went out to Vancouver and christened it and then they sailed it all the way up around the Alaskan coast and back into Canadian waters. And that was the boat that we used for the last 6, 7, 8 years up there.

#346 TC: You were up there a long time.

BS: Yes, we spent a long time in the Arctic, it was a good time in the Arctic. It was a funny thing, I thought when we got involved in the Arctic, I thought it would be very difficult to keep personnel up there. Every year the same personnel came back and wanted to go back to the Arctic. They preferred it to down there because they worked a regular schedule up there. It's very depressing, it's so grey all the time so between Imperial and ourselves we agreed, no longer than a 30 day shift, a shift and a half. 20 days is an ordinary shift but the maximum we would allow anybody to stay was 30 days and they had to come home. They were happy because they were flown in to Inuvik, Imperial had their own aircraft and they were flown to Edmonton or to Calgary, one or the other and they were home

quicker than if they were working Fort Nelson or anything else, so they liked it. See the caribou.

TC: Caribou, yes.

BS: I flew up one time with a Gulf crew to Parsons Lake and this I don't know if it's the same herd all the time and for 60 miles or better, we flew over this herd, they scattered out for miles and miles and miles. They pay absolutely no attention to anything, they just keep wandering. The Eskimos had got a bunch of them into a little kind of box canyon, there's very little relief up there. . . .

End of tape.

Tape 2 Side 2

BS: . . they have a thing go out there that they have converted into cold storage because it never thaws out and there was blood and guts for a quarter section of land, they just butchered them right there, left them right there.

TC: Would there have been Arctic foxes and scavengers that would clean that up.

BS: Oh yes, bears, wolves, polar bears.

TC: What was the base camp, what did that look like?

BS: Just a trailer camp.

TC: Was it near the site?

BS: They were on skis, we just towed them around with cats, kept them close to our work all the time, move the whole camp.

TC: And the drag line that you had, would it snag?

BS: No. Never recall ???

TC: When you were working in the marine environment, did you have divers?

BS: No. It's all ??? All that stuff is shallower than 35' ??? So it's all very shallow ??? The Eskimos used to hold us up because the spring, well I say the spring but it would be the 15th of July probably, before the ice would go out because the Beluga whales come into the shallows. There's maybe a degree or a degree and a half of temperature change in those shallows when it warms up and they come in and calve there and the Eskimos would hunt them then. And they would pick up a whale, would come in and they'd be drunk for two days, have a big party. And then they'd go out and get another one. And they're very indiscriminate, they'd kill a cow with a calf right beside her, they'd kill a cow and the calf was going to die of course. But they couldn't care less. Everybody thinks the natives are great environmentalists, well, they're not. They were very indiscriminate about how they look after their food stocks. That's my opinion. But they would never let us help them, they wouldn't let us spot the whales, we were trying to herd them so they got their whales that they wanted to get so that we could get to work because we couldn't go to work until they were done. But no, they wouldn't do that, they'd go around and find them themselves, kill them themselves. It was frustrating.

TC: There wasn't much interaction then between the crew and the Eskimos?

BS: Well, lots of interaction because you had to have your permission before you could go to

work. They had to be finished before you could go, so you had the governmental control there. We had I wouldn't say a lot of problems, but their work ethic is so different than ours. Imperial Oil, we used to run our native help out of Fort McPherson and if we had two natives that were in on time off the Indian agent would have two extra waiting there for the plane. If two didn't show up we would just put two more natives on to the planes. So you never knew who you had coming back to go to work and that sort of thing, it just started all over again. These fresh people didn't know anything about what the job was or anything. We had a situation for Gulf, we were working out of Inuvik and flying everybody with helicopters every day, it was almost like a ??? And we had all this native help and over a period of I think, 5 or 6 weeks, we went through something like 80 different native helpers. Because we would have to check them because if they were drunk we couldn't put them on a helicopter or if they wouldn't show up, they were gone. So we went through a ton of people in just a very short period of time, it was one man's job keeping up to the natives coming out there so that we had a work force out there. And this was really trying to comply with the government regulations of having so many natives. We had a situation, there was a federal Royal Commission set up and the government appointed a judge in Montreal, Judge Abella??? I believe it was and I wrote probably a 20 or 30 page letter to them ??? pointing out the problems we had and the unreliability. And when that Royal Commission came out ??? and I read that thing from cover to cover, there was not one bit in there about our concerns, about working up there and using the natives and how the natives were ???, it was a federal political thing that was just something to give I think, a nice hand out. It was also ??? as far as I know ??? It turned me off on government situations anyway, because they couldn't have cared less about what we felt about the whole thing. But I was looking at it I guess, from the point of view of running a company and trying to run it efficiently and it's very difficult to do when you don't have personnel that are there to work on time and ??? Governments and I don't get along too well. I have a short fuse with governments.

#069 TC: Yes, well, it's understandable. And I'm sure you're not alone, other people must have that same. . .

BS: Well, I think they forced the industry into doing things that cost a lot of money that they're just not required. The cause and effect isn't looked at properly. Over the years with government we've done so much work with them on erosion and ??? cutting and the forestry and this sort of thing. And so much of the stuff, I think, is ridiculous. You go back in the early days when we used to cut straight line seismic, we cut thousands and thousands of seismic line and now you can't do that because it's supposedly all this problem that you've caused, you've killed fish because you went straight across streams, you didn't put bridges in and this sort of thing, you just used snow fills and whatnot to cross creeks. Well now, you can't leave a thing in the creek, when you're finished you have to pull all that stuff out, you've got to get a backhoe in there and clean it out so that you don't have a [fish with any silt in the spring]???. But we used to do it and walk away and leave it and in the spring the ??? would come out and wash it all out. Now I suppose maybe we damaged the fish but there's still fish there so we didn't kill any stock. If you

look at it on the big scale it wasn't a big problem. And I know working in the muskeg, I've seen tracks work in the muskeg when they cut the muskeg back and they would have to keep stepping over the muskeg and taking another trail because this one was getting too weak. I thought some of that stuff would scar the area forever and I've gone back in the next year and you couldn't tell ???, if just folds in on itself and heals itself. Mother Nature does a lot of healing on her own without any help from mortals, I think sometimes we try to help her too much. I had a deal in Saskatchewan one time, I went out and it was an environmentally sensitive area. When I was called down I thought the crew had done a very good job of keeping from doing damage, there was a few little spots where the drill had just caught the top of the hill and it had moved the turf back a little bit. They were going to shut us down for virtually no reason at all. I blew my stack with the environmentalists out there, the Saskatchewan environmentalists because this was on what they call a grazing lease or whatever. So there would be maybe a half dozen farmers or ranchers that grazed cattle in this big area, no fences and these farmers and ranchers come in with 4 x 4's and they run all over this place. And the first thing that they do is they get on top of the biggest hill that they can find and look around and see where their cattle are and whatnot and they just go wherever they want to go. They do more damage than any geophysical crew ever did but nobody ever says a thing to them, because it's a grazing lease. And we go through there to look for oil and they put instructions in there that virtually you can't follow, they're too rigid. But anyway I blew my stack with that guy and they were going to shut the crew down and charge it and they let the crew keep working. They said, you're going to have to reseed that, I said, that's fine, if we have to reseed some of that, that's fine, don't shut the crew down, that's ridiculous. Anyway this is digressing, this stuff doesn't really mean much to anybody else.

#116 TC: It's a day in the life though, issues in the field.

BS: It's issues in the field, that's true.

TC: When you were in the Arctic with the marine project there, were you Party Chief there?

BS: No, I was the division Manager by then. The only time I was ever on the ship was when it was in Vancouver. We went and christened it and that was it.

TC: Is there anything else you'd like to tell me. Okay.

End of tape.