

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Jack Pettinger

INTERVIEWER: Betty Cooper

DATE: January 1982

BC: This is Betty Cooper and it's January 8th, 1982. I'm at the home of Mr. John Pettinger and his home is in Suite 306, 1033 - 15th Avenue S. W. in Calgary. Mr. Pettinger, could you give me a little of your background, when you were born?

JP: I was born at Oyen, Alberta, August 9th, 1916. My father had homesteaded 20 miles north of Oyen in 1910. I lived there until 1927.

BC: Where had your parents come from?

JP: My father came from Michigan. He graduated from the University of Indiana in 1905, and he heard that they were opening homesteads in Saskatchewan so he came to Saskatchewan, took out a homestead and found in a year or so that he was sitting on a sand back. They were then opening homesteads in Alberta so he sold his homestead in Saskatchewan, moved to a place called Sedalia, Alberta, which is the place north of Oyen. He met my mother there.

BC: Your mother's family were homesteading there too.

JP: They were homesteading there. My grandmother was a widow and had 3 children and she was advised to come from Manitoba to Alberta, where there was a chance that they could at least make a living. My mother and father met at Sedalia and were married in 1914. Then my father, since he had the advantage of an education was able in the dried out era there, in eastern Alberta, to move out and come to Calgary and get employment. As a matter of fact my father was one of the people who started the Alberta Wheat Pool and he was one of the people who started the old Alberta Hail Insurance Board. So he worked for the Wheat Pool from about 1928 until his death just a few years ago. He was 92 when he died.

BC: My goodness, and he'd been involved with the Wheat Pool all that time?

JP: He's been in the grain business all his life. And of course, on the farm they did raise cattle and horses too in the early days when there was a good market for horses. But they just got dried out in eastern Alberta and like I say, he did have the advantage of an education so he could move and get employment.

BC: I'd like to, before we're through interviewing, I'd like to go back and talk about what you can remember your father telling you about the Wheat Pool because I think that would be most interesting for people to hear.

JP: I'd be willing to do that, as much as I can remember about the Wheat Pool. I know it fed and clothed me all the way through school and my brothers and sisters.

#030 BC: After you grew up, you grew up in Oyen and then how did you first become involved in the oil business?

- JP: No, I grew up actually, in Calgary. I came to Calgary in 1927 and I was in Grade 4.
- BC: Yes, you'd be 10 years old then.
- JP: Went to King George School first and then moved over into Balmoral and then to Crescent Heights High School. Then I went to the technical school and took 2 years industrial electricity. Mr. Earl Haliburton and his brother John came to Canada in 1937, in the summer and came up to the technical school looking for people and I had actually been hired back at the technical school after I graduated, so I was there.
- BC: You were there teaching then were you or assisting?
- JP: No, I was lab assistant there. And I happened to be on the spot so I was given the opportunity to interview Mr. Haliburton and there was 3 other boys. We were interviewed at the Palliser Hotel and Mr. Haliburton hired 3 of us.
- BC: What was he looking for when he came up to Tec?
- JP: At that time there were so many unemployed in Canada that people were saying, no more Americans because there were already a lot of Americans in Canada, hire Canadians. So he came to the technical school and he thought that you had a pretty good education at the technical school, that you would fit in to the Haliburton business.
- BC: What background and education had you had at the technical school that qualified you with the Haliburton?
- JP: None really. I had 2 years of industrial electricity but you know, up there you have shops, you get mechanical training as well as the electrical training. And they had thought, at that time even, that they were going to bring in an electric logging unit into Canada and maybe I would work on to that. But there's a difference between electrical and electronic background. Although I did work in the electric logging for some time, I just didn't have the electronic background to fit in there, as the people who were running it now do.
- BC: You really had to learn much of yours by the seat of the pants then?
- JP: Yes, except that in the days that I started out, the people I worked with weren't a bit bashful about showing you what the job was and being very protective in seeing that you did it properly. The oil field was in a pretty slack time in 1937 when I went to work.
- BC: You went down to Turner Valley.
- JP: Turner Valley. I lived in Black Diamond. That fall, when I went to work there were only a very small number of rigs running in Canada. As a matter of fact, there were so many unemployed in Turner Valley that when I went out there, and the other 2 boys, we were really looked down on and so was Haliburton for bringing outsiders into Turner Valley to go to work. The lady I boarded with had a brother-in-law that hadn't worked for a long time and he had a wife and children and you can understand that.
- #064 BC: What type of work were you doing that they could not have done?
- JP: Nothing really. There was a lot of smart people out of work in Turner Valley. The only thing was I guess, Mr. Haliburton was looking for, well, he said, college graduate. The technical school is not really a college but we did have something beyond high school. And that's what he was looking for. I suspect that he thought that down the road, maybe we could learn more or learn faster or make some more contribution to the company maybe than some of the people who were roughnecking say and only had say, a grade 8

education or something like that. I don't know whether he was right or wrong.

BC: Certainly in Turner Valley, Black Diamond at that time, there would be a lot of people who'd been working in and around the oil field.

JP: When I first started I was on drilling rigs and every man on the crew had at one time been a driller. So the people that had been roughnecks were out of work and the drilling companies were putting their drillers back to work.

BC: What was the first job that you did when you went down to Black Diamond, can you go back in your mind to those first days?

JP: When I first went down I was hired more or less, as an extra hand. They had just built a new shop, a lot of cleaning up had to be done, a lot of painting. I roomed in a room just off the office and I was supposed to answer the telephone at night or when the men were out. If the crews were out and the customer came and we had anything he wanted well then I could give it to him. The idea being that we had 2 major pieces of equipment at that time, we had an acid truck and a cementing truck. Mr. Gibbons, who was the manager wanted to become a pure manager. Up to that time he had been operating the cementing equipment. Of course, all our customers were in Calgary really, so he had to do a good deal of running around so what he wanted to do was turn the cementing truck over to the chap that had been driving it and then I would go on as driver of the cementing truck and Mr. Gibbons would be free to manage the company. And that's the way it worked out. Actually the rigs started getting busy in December, somewhere in there, so I went on a truck in late November or December of that year and I never came off again.

BC: Till when?

JP: I worked actively with trucks for I suppose, 25 or 30 years. As a driver for 2 years, that was considered to be your apprenticeship then. After you had served your apprenticeship of 2 years as a driver, if there was an opening, more equipment or something like that, or somebody moved away, then you had first chance to become the operator. It so happened that at the end of my 2 year period they were starting to work outside of Turner Valley. And we brought in some more equipment and I was made operator on the first unit.

#102 BC: Let's talk about the equipment. You talk very casually of the cementing. What exactly was cementing in 1937?

JP: In 1937 cementing had progressed a good deal from the real early days, say in the early 1920's when oil well cementing actually started.

BC: Could you just give us a little bit of background on early oil well cementing?

JP: Okay. In the early days there really was no such thing as cementing casing in an oil well. Cementing casing is one operation and that is done, #1) to anchor the pipe in the hole. The cement is placed between the casing and the hole. It anchors the pipe in the hole, it also covers various formations because you understand when you're drilling down you can go from fresh water to salt water to gas to oil to gas and a whole series of formation. It's government regulated now, it didn't used to be but it is now, and they want to cover those formations between the casing and the hole so that there can be no migration from one reservoir to another or up into the top of the hole where the fresh water sands or

gravels where you and I are using it for drinking water.

BC: Right.

JP: So that was cementing but in the very early days they didn't recognize this and as a matter of fact, many, many strings of casing weren't cemented into the hole. You can understand, if a string of casing is not cemented in the hole tightly and you get strong flow of gas or oil, then if you close the well at the top, the casing is going to come out of the hole. You have to cement it solid so you have something to anchor your valves, your control head, and/or blow out prevention equipment when you're drilling.

BC: And the cement itself is not just the cement we see in a building.

JP: It was when I started.

BC: Was it?

JP: It was when I started. And this is a very interesting thing. We used the straight construction, portland cement, with nothing but water. Shortly after I went to work we graduated to using some calcium chloride with it to speed up the setting for surface casing. Then we finally got special finely ground cement, we called it 3-X quick set. It came from up here part way to Banff, Exshaw, where they have the cement factory. That was a great boom.

BC: Why was it so much better?

JP: Surface casing. . . you understand a drilling contractor only makes money when he's drilling. Okay, your surface casing which is your original casing which goes into the hole to the first solid foundation that they can cement it to, so it's solid enough to support a blow out preventor. With the quick set cement you can be back drilling in 4 hours. With the old Portland cement you might have to wait 24 hours. So the drilling contractor was losing 16 hours of drilling time, so this was important for the quick set. As time progressed we began adding other things to cement and the manufacturers were making special oil well cement and our lab man told me at one time, this would be about 15 years ago that there were as many as 50 separate additives that you could put with cement in an oil well for certain specific purposes, like slow set, quick set, anti-foaming you name it, just ever so many, light weight, heavy weight.

#147 BC: So it's changed a great deal in the time that you've been involved with the oil business?

JP: Oh yes. As a matter of fact, I really don't know how we got away with using straight Portland cement to cement 6-8 thousand foot holes in Turner Valley, in the foothills, anywhere in the foothills where you have a bottom home temperature that will accelerate the setting of cement quite rapidly. I don't know how we got away with it. But we did I guess.

BC: You certainly did. When you were out there doing the cementing, were you in hard hats. .

JP: No, we were not.

BC: Did you have these big cement trucks? Paint a scene for me of what it was like.

JP: We had for those days, we had good equipment. Ours was brand new, the equipment I went to work on was brand new on January the 1st, 1967 and I went to work in November. So it was brand new equipment, it was good equipment.

BC: Not '67, '37.

JP: '37. It was brand new equipment. The drilling rigs that we went out, without exception were well maintained. Mind you there weren't the regulations covering the drilling rigs that there are now. There were unguarded chains around, there weren't the safety features on the cat head, and no hard hats, no safety toed shoes and very, very few accidents. I kind of think, well the way I was raised in the oil field, it was as much part of your job to work without getting killed as it was to work. And you were taught right from the start, don't be careless, this is the way to do it and if you don't do it that way we don't want you working for us. And in 1937 you were so anxious to get a job you did exactly as they told you.

BC: How much did you get when you started?

JP: \$75 a month.

BC: Did they pay for your board?

JP: No. I paid for. . . I was getting board for \$35 a month until the lady I was boarding with took pity on me and she said, you're out of town so much that it's not fair for you to have to pay straight through for your meals. You'll only pay 35 cents a meal when you're here. And that was good food. Of course, I had a room back at the office, like I said before, so I could answer telephones.

BC: Now you had a room back at the office in addition to boarding somewhere.

JP: By board I mean I was getting my meals. But I was actually living back of that office, I had my room, that was my home.

#182 BC: I see. Now you mentioned other boys that went down with you, who went down with you from the Tec here?

JP: A chap by the name of Don Evers. They took him to the States for training, we were all supposed to go to the States for training eventually but Don went to the States for training had an allergy for petroleum products. So he had to come back and he went to work eventually, when he came back, for Riverside Iron Works. He had worked for them before he left. I used to see his picture in the paper quite often for promotions and I imagine he went right on up in Riverside Iron Works. Then there was a chap by the name of Lyle Thorn and he went to the States and when he came back, he was there 2 years, came back and he left us during the Leduc boom and went to work for another company and he's dead now. He died of a heart attack in the 50's some time. I don't know what's happened to Don but of the. . .

BC: There were just the 3 of you then?

JP: Yes.

BC: Now you mentioned too, Dick Gibbons who was your boss. Tell me about Mr. Gibbons.

JP: Mr. Gibbons was possibly the smartest oil well man that I ever met. It would be between him and Ralph Will that ran Drilling Contractors. Ralph Will was a drilling man, Dick Gibbons was a service man more, although he had worked on drilling rigs. Now you have to understand that the Haliburton company originated in the United States. It was owned, controlling interest was owned by a man by the name of ??? P. Haliburton. There was no cementing company, no service company in Canada and in 1929 there were some wells

being drilled up here, with the main activity being at Lloydminster. So Mr. Haliburton had a black sheep brother, as a matter of fact he had 2 brothers, but he started the Canadian company on his own for some place to put this brother. He sent the other brother with him, Paul, to look after him. George was the black sheep. They went into Lloydminster and then migrated down to Turner Valley later and then Paul went back to the States earlier on and George was killed in the fall of '36 in a trucking accident. So Mr. Haliburton had had Mr. Gibbons working for him in the States. Mr. Gibbons was capable of doing cementing, acidizing, and drill stem testing, which were the 3 services that Haliburton offered at that time. So he sent Mr. Gibbons to Canada, to manage his company, which had no connection with the Haliburton company in the States. It was separately owned but it was still owned by Mr. Haliburton and didn't become part of the other company until 1948 I think it was, in there. But it was put here for this brother. There's some great stories about that brother, which wouldn't be fit to put on this. But he did survive. Now Mr. Gibbons was one of the best teachers that I ever met. I lived on a room off the office and on the other end of the office Mr. Gibbons's house ran off. So in the night when I was out in the office or in my room Mr. Gibbons would often come out and he would give me books, answer questions, and things like that. He was a great teacher and when you were on a job with Mr. Gibbons nothing was too much trouble to show you how to do that job properly. I learned more about oil wells from Mr. Gibbons than I learned from any other man.

#239 BC: Weren't you fortunate at the beginning of your career and the Canadians would be fortunate too, to have someone of that calibre sent up here.

JP: That's exactly right. Not only that, there weren't too many rigs running in Canada at that time. We had the cementing, we had the acidizing and we had the drill stem testing equipment. Now you knew for quite a while ahead when you were going to have to go on a job, on a well. So if the acid truck was going out and you didn't have to go on a job you went along just for the ride, to see how it was done. If the drill stem tester was going out and you didn't have another job to do you went out with him. Just to see how it was done so you learned about the three services. And then as we got more and more services of course, we took them on gradually. It's not like coming into the industry now where it's thrown right at you. As a matter of fact we researched quite a few, like this fracturing and the ??? that they do now, we researched that in Canada. All the bulk cementing units that you see running around servicing oil wells, Haliburton researched that and broke the first ones right in Edmonton. It was just evolution for us, it's a lot different for the people coming in now.

BC: Could we go back to acidizing? Explain exactly what acidizing was, at that time, and perhaps looking at how it has changed.

JP: Sure. Acidizing at that time was simply pumping a solution of hydrochloric acid, under pressure, into the formation. You have to understand that the formation that the oil is coming out of in limestone is very porous and the pores are connected and that's where your oil is. So in order to increase production you'd pump this hydrochloric acid in and it would eat its way in, enlarge those channels in the limestone formation and your

production would increase. Or it would eat its way back into maybe some of the channels that weren't already connected in. And of course, repeat acid jobs would take you further and further back. So acidizing was a repeat performance. Now the only thing that we put with acid then, was what we called an inhibitor, which protected the casing and the tubing and the metal parts in the well, from the acid. The only other additive that we had when, just a year or so after I started out, was a detergent we used to mix with the acid for some purpose, I'm not exactly sure now.

#282 BC: Interesting, detergents were used in the oil before they were used in the home.

JP: It came in an open 45 gallon barrel and the whole top came out of it and after we'd been working in the shop we'd just shove our hands into this open 45 gallon drum of detergent and wash our hands in it. It was really a detergent, some kind of soap. But acidizing of course, has come ahead, just like cementing. There's more additives than you can count that they put with acid for various purposes now.

BC: Can we talk about the drill stem testing in the early days?

JP: Well, early drill stem testing, Haliburton had the first drill stem testing tool in Canada and that come in with those two new trucks.

BC: That would be 1937?

JP: 1937. Now that was a method of running a packer at the bottom of your drill pipe.

BC: What is a packer?

JP: It's a device which will pack off between the drill pipe and the hole. You run your drill pipe in and set a weight on the drill pipe which would expand this rubber packed out against the side of the hole. Below the packer was a valve and the first drill stem testing tool we ever had, all you did was turn the drill pipe and open that valve just like you would the tap on a sink. And it allowed the fluid to come in at the bottom because then it relieved the pressure on the formation from the mud and you could produce, if it would produce, through the drill pipe and then when you'd had a look at what was down there you could close the valve off and come back out of the hole with it. Later on they added, we called them a pressure, well it was a pressure recording device, we called them pressure bombs but they were a pressure recording device, which would register the pressure of whatever was coming into the hole, right at the bottom of the hole, rather than at the top . . .

BC: Why was that better for you?

JP: It gave you the rock pressure right at the bottom. Also, and you see, you're doing this testing in an open hole. If there's production there you can run casing then, if there's no production you've saved the price of a string of casing. But that's become a much more sophisticated instrument over the years too.

#322 BC: Yes, by the time you retired from Haliburton, what was then drill stem testing like?

JP: It was essentially the very same operation. Only the packer, instead of using weight to expand it, had become what they called an inflatable packer. It was just like a balloon that they forced out by pump pressure, out against the side of the formation. They had a much

more sophisticated valve. They have such things as samplers and things that they run on it and they have what they call, straddle testing, so you have 2 packers, one on each side of the formation. A great many things and a great many people in the testing business now. It happens to be the cheapest servicing business that you can get into, if you want to start a servicing business.

BC: When you say cheapest, how much would it cost for one of those?

JP: Now probably, with your truck and everything, I suppose you could get in with one string of tools for maybe \$100,000. Back when I started I suppose you could have got in for \$15,000 likely.

BC: But the \$15,000 in 1937 was a million dollars almost.

JP: Well, we could carry our testing equipment in the tail end of a coupe. Now you need about a 3 ton truck to carry all the equipment that goes with it.

BC: There are some names that I have down here, there were people like Ken Doze, Shorty Smith, Bill Dyson, were they all with Mr. Gibbons at the beginning.

JP: Right.

BC: There were really 5 of you who were at the beginning.

JP: There were 5 of us, right. And Lyle Thorn, and Don Evers who were in the States.

BC: Right. So that really made the 7.

JP: 7, but 2 of them were in the States. When George Haliburton was killed in the fall of '36, then Shorty Smith, who was the first Canadian ever hired by Haliburton, he worked for George for quite . . .

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Tape 1 Side 2

JP: . . . Mr. Gibbons became a full time manager except when we had to run a drill stem test and he ran them until some of the rest of us learned how to do it. And there weren't very many tests done in those days.

BC: Differently from now?

JP: Now they run them all the time. In those days very few were run so he didn't have to run too many tests but we all eventually learned to run tests. So he became a full time manager.

BC: Did Shorty Smith have another name?

JP: James Smith.

BC: But he was always called Shorty.

JP: Always Shorty. And Shorty by the way, was a teamster. When he went to Turner Valley, in the days when everything that went into Turner Valley went in on horse and wagon. When George Haliburton needed somebody on the cement trucks down in Turner Valley they were able to hire Shorty.

BC: How old would Shorty be do you think, at that time, in 1937?

JP: IN '37, let's just see. . . Shorty was '37 when war was declared, I know that, that would be in '39 wouldn't it. Well, he was 37 then so he'd be 35 in 1937. He was from Nova

Scotia.

BC: So he had been there in the first Turner Valley boom do you think?

JP: Oh yes. He was. . . I think Shorty went to work in about 1930, somewhere in that area. He'd worked for Haliburton for quite a few years before I went to work.

BC: In drill testing, in the tools, there was a word I came across which I'd like you to explain to me. It's called a stop cock type of drill testing.

JP: Stop cock type, it was the old original drill stem testing valve that I explained to you.

BC: Ah, that was the name.

JP: Yes. You just turned your drill pipe a quarter of a turn, just like you would open a tap and then closed it. The modern valves are an up and down type of valve, they're a vertical, vertically operated valve.

BC: So the stop cock was simply turning a tap.

JP: Yes. It was made of brass and I remember when I, last time I went back to Turner Valley I was cleaning up the yard and I sold that tool to a junk dealer and it was the biggest mistake I ever made in my life. It's something you'd never find again for an oil field museum.

BC: Can you remember any anecdotes of the time in Black Diamond, the first say 1937, when you began?

JP: Well, I remember that there were so many people out of work. I remember that the drillers on the rig were much more competent than the drillers are now. For example, now you have a tool pusher living at every rig and responsible for that one rig. When I went to work people like Ford Walker, with Imperial or Charlie Visser were in charge of a whole lot of rigs. I can remember one instance where Charlie Visser was telling me about how good one of his drillers was and he said, that man actually twisted off the bit at 4:00 in the morning and by the time I got word he'd already gone in with the fishing tools and fished the bit out and he was back drilling. Well, now they don't even have fishing tools on the rig of course. You hire a fishing company but in those days they had them on the rig. And the drillers would take the responsibility. As a matter of fact, many of those drillers I knew then, eventually owned their own rigs and their own drilling company.

#036 BC: For people who have worked in the oil patch fishing tools and twisting off, those are casual phrases, what do they mean to the non-oil patch person?

JP: A fish is something that you have either dropped into the hole or you have left there. Now it's possible when you're drilling that the bit will stick and you will twist the drill pipe right off, you'll just wring its neck. Then you have to go in with a fishing tool and there are various kinds, there's one type that will fit. . .they call it a tap and it's designed so that you run it in and hit the hole in the drill pipe that's down there and tap into it, just like you were tapping for a bolt and pull it out. I've seen them get them that way. Then there's what they call the overshot, which went over the outside and had a grapple inside of it which, if you were lucky, picked it up. Then if that didn't work they could wash over with what they called a wash over pipe which was a long pipe that would go right down over and then they, in some instances, cut it off in pieces and bring it out. If you couldn't get hold of it then you side-tracked the hole, at the top of the fish and went around it.

BC: So you'd really have to start and drill again, start a new hole.

JP: No, not a new hole, you'd go off above. There's ways of deflecting your drill pipe and you'd go off and make a dog leg in the hole and go down beside the piece that you'd left in the hole.

BC: How long would you sometimes try to get these fish?

JP: That was a matter of #1, economics, if it was cheaper for you to leave it there, and go around it that's what you would do. #2, if it looked like it was going to be any prolonged fishing job, if you'd tried everything you knew and couldn't make it then you'd have to back up and go around. There have been fishing jobs that I've seen that lasted months.

BC: Did you run into any of those in your early days?

JP: Oh yes, we ran into them all the time. Not that we were actively involved in working on them. Now if they got drill pipe stuck sometimes we would go out with our equipment and we would pump oil down around the bit because if you were in the right kind of formation that oil would soften the formation and loosen the drill pipe and you could get it out. And I've seen that happen, a lot of times that's all it took. But after you'd tried that then we were through, we had no more part of it. But it would probably delay a job that we were looking forward to later on and we'd have to wait on that job until they cleaned the hole up.

#065 [stopped for tea]

JP: Are we ready to go?

BC: Yes, we surely are.

JP: I mentioned the purpose of oil well cementing, which was in the beginning was to cement a casing. Now a gentleman by the name of Perkins started the first oil well cementing company ??? California. Mr. Haliburton went to work for Perkins. Perkins had the patent on the cement plug, which is, you pump cement into the casing, you put a plug in which is a divider really, can be, most of them now are about a foot long and they're like a valve on a pump and they clean the side of the casing as they go down, then you pump mud or water in on top of that plug, you force the cement out the bottom of the casing and up around the outside. You stop the plug right at the bottom of the casing. Now Mr. Perkins had the patent on that plug.

BC: Now the plug, the patent, so that you would know where the plug was, I would presume you would have to know that.

JP: You could either measure the amount of fluid that you followed the plug with or in the early days we used a measuring line, which was a plumb bob that followed it down. Now Mr. Haliburton, when he went to work for Perkins, their mixing consisted of a batch mixer. They had a big tank, probably 7' wide x 7' long and 3' deep, something like that and they actually mixed the cement physically with hose and shovels, then the pumped it down the well. Mr. Haliburton invented a mixer and the cement was mixed with a jet action and so he had the patent on the mixer. Then Haliburton wanted Perkins to expand and take in other services and to expand east of the Rocky Mountains and Perkins wouldn't. So Mr. Haliburton left him, and they agreed that Mr. Perkins would use Haliburton's mixer and Haliburton would use Mr. Perkins's plugs. And Mr. Haliburton

went to Oklahoma and started up there. Mr. Haliburton did diversify, he took in drill stem testing, electric logging, acidizing and everything. Perkins remained as a cementing company. Mr. Haliburton had actually loaned Perkins so much money that when Mr. Perkins died, Haliburton owned the Perkins Cementing Company. This was the company that was in the States, that Mr. Haliburton actually, of course, in order to expand he sold shares so it was a stock company with him owning controlling shares. And like I say, when he come into Canada, he did it for his brother but it was wholly owned by himself, it wasn't a stock company at all.

BC: It was a personal company.

JP: It was a personal company. So that is the history of oilwell cementing companies. Those were the first companies. It's interesting that before these people came in and started cementing, the drilling contractors apparently, this is the story that I get, of course, a lot of the holes were cable tool holes which, they could just dump a couple of sacks of cement down, it would fall to the bottom, they would plunk the casing down into it and let it set. So it was very insecurely. And then with the advent of the rotary drilling rigs with the hole full of mud then they had to find some other way and this is where Mr. Perkins plug come in, so that they could pump the cement in, out the bottom and up the outside. And that's essentially what oilwell cementing is. Now there are various other parts to the ??? that we call cementing on oil wells for abandonments, plugging off lost circulations, various things like that, that developed later. But essentially this was the first. Now I don't know. . .how far do you go back in this country.

#109 BC: I go back, not in Alberta, 1950-'51 was when I came to Alberta.

JP: Well, when I came to work there had been some wells drilled west of Bragg Creek, a couple up in there. The first time I went up in there I went further in than these wells. But we had to pass through the valley where these old wells were and the hydrogen sulphide would just about knock you down. And those wells had never been cemented. What they had done, they ran burlap bags to the bottom of the hole and jammed the casing into these burlap bags. And that was what they were using to seal off between the hole and the casing and of course, if didn't.

BC: What would that do to those wells?

JP: Well, they weren't producing them anyway, they were sitting there idle. But eventually, the government told them they had to clean the things up. We went in and tried to pump cement into that casing and that hydrogen sulphide had been coming up there so long that the minute you put any pressure, just any pressure at all on that casing it just blew up. So I think that those wells were just abandoned. They cemented the thing off so that they'd cure the leak on hydrogen sulphide and if there's wells in there now, I haven't been in there in a long time but if there are wells in there now they're probably new wells.

BC: That could be very dangerous, going in there and having in blow up.

JP: Oh yes.

BC: This was in your young and foolish days.

JP: Well, I didn't work on those wells. I just had to go by them to get at another one that was up in probably the next range of mountains.

BC: Could we talk about, there's another part of Haliburton work and that is the drilling fluid the call it now, mud.

JP: Of course, we only went into that business in the last, probably 15 years. Now the drilling fluid in the hole, it's now a very sophisticated type of fluid. In the early days all it was, was a good grade of clay and they put in what they called a great big, mud box, which is a horrendous thing. Made out of wood about 20' long x 10' wide and about 6 or 8' deep, a great big thing. Then the roughnecks would shovel this clay in there and they'd add water and then they would steam it, cook it and that was their drilling mud. Of course, the clay is Bentonite??? and your drilling muds today, most of them I think are still a Bentonite base but it's a very pure grade of Bentonite which they sell in bags. You don't go out with a truck and dig it out of the prairie. And there are a lot of additives which I know nothing about, which go into this. But the prime purpose of the drilling mud as I was taught was to lubricate the bit, carry the cuttings to the surface and to provide sufficient weight to keep the hole from caving in or to prevent a gas zone or water zone or something, from blowing the well out.

#149 BC: So it becomes a very sophisticated science.

JP: Very sophisticated science. Now the first mud man as such, that I remember, worked for Royalite Oil Company and his name was Jim Todd. He was the first one in Canada. Royalite was the first one to actually employ a full time mud man to my knowledge. The other drilling companies, the derrick man was also saddled with the responsibility of making sure the mud tank was full and that it wasn't too heavy and all this sort of thing, but he wasn't a technician.

BC: The mud that you used in the early days, was that just mud you found around or did you truck it in from somewhere specifically?

JP: It was trucked in, unless you could find a good clay pit close to where you were working. I don't know where it was but out at Turner Valley, somebody had a good clay pit out there because they weren't trucking it very far and everybody was using the same guy and I guess he had a pretty good business selling clay from his, probably his farm or his ranch.

BC: Get rid of the clay so that he could start farming on the good soil that must be underneath somewhere.

JP: Well no, there wouldn't be any underneath it, out there it would probably be rock.

BC: Let's talk about your work in the oil patch here in Alberta during the war years, that must have caused some particular problem.

JP: It did. You see, during the war. . .now, the war started in 1939 and our only base of operations was Black Diamond. We had done some work in eastern Alberta, around Brooks. We had done quite a bit of work at Vermillion and Lloydminster. So at the start of the war. . .well, at the start of the war I was transferred to Vermillion really. I had a crew in Vermillion and we actually started a base camp in Vermillion. Now that's very heavy oil there and the CNR at that time, were using heavy oil as bunker fuel in their locomotives. So the CNR came in there and drilled an awful lot of wells, I don't know how many, to get this bunker fuel to fuel the railway engines.

BC: Because of course, their would be no other source.

JP: That's right. Now myself, and 2 or 3 other fellows were, well in our company at least 2 or 3 other fellows, there were a lot of people in the oil field were exempt from military service on the grounds of essential services. So I was in Vermillion on that, it had to be renewed every year but the company did it.

BC: You would have to be exempt because the oil was essential, you couldn't be bringing it in by ship.

JP: This is right and they were desperately looking for oil. It happened to be at Vermillion they had this oil that the CNR wanted and they drilled there.

BC: So in the field, were you then working with people who were perhaps over military age to a large extent.

JP: This was one of our main problems during the war years was that, if you were already in the oil business you could be declared exempt but somebody couldn't come in from outside, in. So you were getting people who were unfit for military service, for one reason or another. Some of them, if you were over 35 or if you had so many children or something like this, there was an exemption, so we were getting those but we couldn't get enough men. Our ordinary crew was 2 men to a truck and there was the operator and the operator had either a pick-up or a car which he drove with the truck. So in Vermillion I had 2 trucks, I eventually wound up with 3 trucks but at first I had 2 trucks, I had an electric logging truck and a cementing truck. I operated both of them and sometimes I had a driver for each one, sometimes I didn't. Many times I left Vermillion with both trucks for a long journey because we worked clean over, as far as Cansite???, Saskatchewan. There would be the 2 trucks, no car, no pick-up, and if anything went wrong on the road you either flagged somebody down or sent the other truck in to get help. Whereas ordinarily you would have your car or your pick-up there.

#210 BC: Did you find that you had a lot of the breaking down of the cars?

JP: Towards the end of the war we did. Not the cars but the trucks, towards the end of war. We had a special truck, we had what was called a 4 Wheel Drive, made by the 4 Wheel Drive Auto Company. It was the genuine 4 Wheel Drive. The government used to have a lot of them on the snow plows. But we had them, primarily because our company in the States owned part of the 4 Wheel Drive Company. Nobody but us and the government had those things, except the army, the army had a lot of them. But we couldn't go to the army and get parts, they wouldn't give you any parts. But we worked it out eventually, so that we used to swap off between us and the government. Our master mechanic got to know the government man and they worked back and forth. But we had an awful time getting parts.

BC: 4 Wheel Drive would be what eventually became the Jeep.

JP: No, no. The Jeep was a Dodge innovation originally. No, the Jeep was a different vehicle altogether.

BC: Could you describe the 4 Wheel Drive truck then?

JP: The 4 Wheel Drive truck, the ones we had were quite large of course, we had pumping equipment mounted on them.

BC: When you say quite large, how big?

JP: I wouldn't know the tonnage. . . I wouldn't know how to describe how big they are. Bigger than what you would consider a good sized gravel truck on the road now. And you consider your ordinary car has what we call a differential at the rear end and your drive shaft comes from your transmission, through the differential and then your power is split between the two wheels, one wheel spins, you're dead. Okay, we had another differential in the middle of the truck. So we had a drive shaft going to the front wheels, where you had another differential and to the back wheels where you had a differential. Then if you got in the mud, if one wheel spun you were dead. But then you could lock that centre differential and make it turn. So then you had to have both the front wheel and the back wheel spinning to stop you. Now if you had a green driver on the truck, or somebody who was liable to lose his temper, as soon as he started spinning of course, he'd bury himself. You'd get in so deep, you couldn't get out. If he was sensible he would stop before he'd buried himself so that he could probably get a farm tractor or something to pull him out because if you ever got those things buried you were in sad shape. It would take something like a 60 cat to get you out.

#250 BC: It would be hard to find farm tractors around too at that time.

JP: Actually if you weren't too badly off, the farm tractors didn't have rubber wheels. Remember they used to have the old iron wheels with the cleats on. And they were pretty good, they'd pull a lot, the only thing, they weren't very heavy horse power. But with a little help and like, ours were 4 Wheel Drive. We'd put all the wheels to turning you know, and get one of those tractors on in front of us and I've got out of some pretty sticky situations, with just the help of a farm tractor.

BC: People that look at Alberta today, with the criss-crossing of the roads all over, could we talk a little about the roads or lack of same, say in the pre-war and war time Alberta.

JP: When I first started work of course, you had gravel from Turner Valley to about where the LRT station is here now. It was Turner Siding then. Then there was a stretch from about Turner Siding to about the Cemetery Hill and that had been paved with tar sand, as an experimental process. Then you had pavement to the Nose Creek Bridge and then it was gravel to Edmonton. The road made every little town, you actually went through Beddington, Balzac, Crossfield, Carstairs, Olds, you made everyone of them and then you hit that pavement about the same distance out of Edmonton as it was out of Calgary. And you of course, didn't have any all night service but we travelled all night. No all night service stations or cafeterias.

BC: Were there any service stations at all?

JP: No service stations that I can remember of, between Calgary and Edmonton. There was one in Edmonton, the old Turnbull Motors had an all night place there. There was an all night café right where you crossed the bridge at Red Deer, Molly's Café. And Molly catered to truck drivers. You could pull in there in the middle of the night, stick your head in the door and say, Molly, wake me in 2 hours. Molly would wake you in 2 hours and you'd go in and have your breakfast or something and away you'd go again. Then there was an all night café just on the outskirts, on this edge of Edmonton. Of course, we were going to Vermillion in those days, the next one was at Vermillion. Vermillion was the

divisional point for the railway so there was a beanery in the station, there and at Wainwright. Wainwright and Vermillion had the 2 cafes in the station. So you carried sandwiches or. . . and then war of course, the gas stations closed at 7:00 at night and you weren't even supposed to carry gasoline to spare, although we did. We had a couple of 10 gallon cans that we carried in the back of the car and hoped we didn't get stopped.

BC: You never had the Mounties stop you?

JP: No, I was only scared once. I went past Leduc, towards Edmonton, it was about maybe, 1:00 in the morning on a Saturday night and got stopped by the police but he was stopping people coming out of a dance at Leduc, looking for liquor. As soon as he saw a company car, he let us go right ahead, never smelled us I guess.

#306 BC: There were some secondary figures that you might be able to talk about, there are 2 names I have here called Reuben and Zanmer???. Do you know them at all?

JP: Reuben and Zanmer were very high powered promoters. When I went to Vermillion first in 1939, just on trips in and out and Reuben and Zanmer were promoting in that Vermillion area.

BC: What were they promoting, oil?

JP: Oh yes.

BC: Or oil companies?

JP: Trying to raise money to drill these little holes you see. In those days you could put a well on production at Vermillion for \$15,000. So it appealed to the small investors and they were slick people, Reuben and Zanmer. You don't need to publish this but they were. And they were promoting these wells, not as a big company but each well had a different name, so it was an individual promotion. Now you hear stories about Zanmer, typical promoter like Neil McQueen was, broke and back up again, and broke up and back up again, you know, the typical type of promoter. And then when CNR took over that stuff at Vermillion, Zanmer left there and then in the 50's I ran into him, he was down on the Blood Reserve, south of Fort Macleod and he had taken over the National Petroleum. Now National drilled some wells in Turner Valley in the early days, it was owned by George Harris here in Calgary. George Harris Wonder Health Cure or something like that and he put his money into National Petroleum and Zanmer took that over. By that time Reuben had left him and Reuben had started the pulp mill at Hinton and as far as I know the Reuben family is still mixed up in that, and his son is head of one of the oil companies here in Calgary now. Zanmer, the last I heard of him was that Blood Reserve stuff. During the war he had, he's quite an inventive guy, he had visions of a new type of well stimulation and he took over a well at Little Chicago at the south end of Turner Valley and what he was going to do, he'd got just thousands of Pyrex balls, about 5/8" in diameter.

BC: Like marbles?

JP: Very much they were, Pyrex marbles, thousands of the things. So he dropped them down into this well and then he ran nitroglycerin in, among these marbles and he shot that. . .

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Tape 2 Side 1

- JP: Well, he put the marbles into the well, and then the nitroglycerin and his idea was that the nitroglycerin would disintegrate this Pyrex and shoot it back like shrapnel, into this limestone formation but it didn't work the way he thought it would but it was a very peculiar thing. You see, this was at the end of the war because he bought 2 war asset, Chrysler trucks and trucked the nitroglycerine in. He got it someplace in the east and the trucks took separate routes and the police watched them very carefully and guided them. They were giving reports in the papers of the locations of these trucks. Of course, he was quite a promoter you know, he wanted to talk this up. And they finally got the nitroglycerine down there and they did this job and then we bought his trucks and used them to make new trucks for ourselves. But this was different of course, than shooting a well with nitroglycerine like they did. . .it was the standard stimulation technique before the days of acid.
- BC: Maybe we should talk a little about that, about the nitro people. Whenever you hear anyone talk about nitroglycerine they talk about it in an awed voice and they say you should always stand 100 yards back.
- JP: Stand well back, yes. When I first went to Turner Valley acid had just become a stimulation practice. Prior to that, in very hard formations like limestone, which was what Turner Valley was mostly, they would drill the well and if it looked like it would be a producer they would get the nitroglycerine man to come in and plant the charge of nitroglycerine down the hole and blow it. The disadvantage of nitroglycerine was, it did stimulate the wells in many instances but the disadvantage was that it wrecked the bottom of the hole.
- BC: It made a hole just like dynamite.
- JP: And you've got all the rubble in there, so then the clean-up process to get the stuff out of the hole was quite expensive. Now the man I knew was named Charlie Stalnacher and he came from Cutbank. Charlie Stalnacher, just as a matter of interest, graduated from the University of Indiana, in 1915. My dad graduated in 1905. I understand that he graduated in chemistry and took training in nitroglycerine shooting and eventually, had his own manufacturing plant at Cutbank or somewhere down around there. And he told me that all the people that trained with him had been killed in nitroglycerine blasts and he was the only one left.
- BC: Did he live to be a ripe old age?
- JP: Oh yes, he just died here a couple of years ago, he was an old man. But the story that I got, he couldn't get life insurance. And he bought diamonds and he had 2 beautiful diamond rings that he wore and when he was going to go out on a job he would deposit his diamond rings with the manager of the hotel in Black Diamond. He'd put them in a safe for him until the job was done, and then Charlie would pick up his rings. We were the only people that had what we called measuring lines, which was a line you could drop down the hole any depth you wanted, run various things on it and we would go out and run the nitroglycerin for him. Shorty Smith did it before I went there and then when I got working, it would depend which one of us was there when Charlie wanted to use the

measuring line, we would go out. I'd have to say that only one incident that I ever ran into it, for some reason the charge couldn't get down the drill pipe, they couldn't get it down and there was a time clock on it of course, so there was a great scurrying around to get it pulled back to the surface so Charlie could disconnect this time. Now I don't suppose it was really too dicey, he probably had lots of time but you know, we thought that really, things were running short but I suppose we probably had a couple of hours.

#045 BC: It would be like seeing the long dynamite stick getting shorter and shorter.

JP: Well, this was liquid that he was using. He used to get a furnace man to take stove pipe and put it together in 3 and 4' lengths, and solder it all and fill that with his nitroglycerin and put a handle on top so he could tie two of them together or whatever.

BC: There wouldn't be too many nitro men around.

JP: When I went to work he was the only one that I knew of. I guess in the early days there were a lot of them because you take the oil activity in Texas and Oklahoma, it predated this country by a long way and I understand they used to use it down there an awful lot. But it was at the end of the road when I went to work. Same with cable tool, cable tools were at the end of the road when I went to work.

BC: What are cable tools?

JP: Cable tool was the old original drilling rig. It was just as it says, the bit was on the of a cable and it went from a drum of cable that had power on it so you could wind it up and down. ??? what they called a walking??? beam, which looked a lot like these pumping wells, you know, the walking beam??? up and down. Then the driller could run the bit to the bottom of the hole and then he regulated it so that when that came down it was a snap action, like a whip action that actually hit the bottom of the hole and chipped it. The bottom of the bit was shaped like a wide coal??? chisel. And very heavy. And then sometimes they had what the called jars on top of that which added weight to it.

BC: Sometimes when you see buildings today, in 1982, they have these sort of hydraulic hammers, is that a similar type of thing at all.

JP: No, that's a pile driver, that's a direct hit on the top of the post. This was on the end of a cable. Now some of these cable tool holes were quite deep.

BC: By quite deep, how. . .?

JP: Oh, I think that old Sentinel well there at Black Diamond was about 8,000' deep, 7 or 8 thousand. And it drilled off and on as long as I was in my first tour in Turner Valley, it drilled off and on. ??? owned it and he used to drill whenever he could raise enough money to drill a few feet, he'd get a crew together and they'd go out there and do some drilling. But at the time that I went to Turner Valley, rotary was established. There was the odd cable tool rig and the procedure then, other than wild cat wells, where fuel was an item, rotary had taken over. The wild cat wells there was still some cable tools, but in Turner Valley there were a few that, they would drill a well with cable tools down to 3,000' or something like this and then they would change it over to rotary. But I don't suppose I worked in Turner Valley on more than half a dozen cable tool rigs. I worked on a lot of cable tool rigs outside of Turner Valley, in wild cat areas.

BC: You mentioned you had 2 tours in Turner Valley.

JP: When I moved to Vermillion during the war, then at the end of the war the Vermillion field became uneconomic really, and diesel power was coming in on locomotives. So the only thing left for that oil there was road oil, now they're doing something with it and taking a lot of it out up in that area and doing some kind of refining process to make diesel fuel out of it. I had the choice of moving to Lloydminster which was opening up then, or going to Edmonton, because Leduc had been discovered. So I took Edmonton. Then I was in Edmonton, I moved to Edmonton in 1947 and then I moved to Black Diamond in about 1951 and I was there for 3 years. Then I moved back to Edmonton again and then I moved to Calgary for the last 12 years of my career with the company, I was in the office here.

#091 BC: Down in Black Diamond, the home that you lived in, I think it was called Haliburton House, or you called it Haliburton House. Could you tell me about it, what it was like?

JP: Well, George Haliburton had built himself a house. You see, his shop was about 5 miles south of Black Diamond actually, on a farm where he kept his equipment and stuff. But his house and his family were in Black Diamond. It was a little 2 room log house.

BC: Had he built the log house himself?

JP: No.

BC: No, he had it built?

JP: A fellow by the name of Louis Marino, who was quite a famous log man out there, built it. So Mr. Gibbons come out and there were these 2 rooms, which were not much of a house from what they'd been used to I guess. Anyway they were going to build an establishment there and these 2 rooms were in line. So Mr. Gibbons got hold of this Louis Marino again, he was still around there and they built, on those 2 rooms then they built a dining room and a kitchen, bedroom and office. It was all in a long line. Impossible to heat. Then he went out the door and they built a big, ??? roof garage out at the back of that. It was kind of a unique place, you're right. It was all log and of course, when Gibbons had it rebuilt and added to they fixed it up real nice and the chinking on the logs was all painted white and the thing was nicely kept and a nice yard and a nicely kept shop too. But that was the Haliburton House.

BC: Have you ever gone back since. . .you lived in there for . . .

JP: Oh yes, I lived in that thing for 3 years.

BC: . . .tried to cope with the heat. 1961 was a pretty cold winter too, I remember.

JP: I don't remember. But yes, we had radiants scattered all over the place, there was no furnace, it was all just radiant heaters. And one bathroom. The kids had the bedroom right out by the road, then there was the living room you see, then the dining room, the kitchen and then our bedroom. If the kids wanted to go to the bathroom in the middle of the night, they went all that length of the house, down through our bedroom and into the bathroom. It was a fool of a thing but. . .

BC: Is it still standing?

JP: Oh yes, but somebody bought it with the idea, the garage is gone. But this fellow bought it about the time that people were getting licenses for lounges and things like that, so

what he did, he was going to have a stopping place between Calgary and fishing and hunting west of Turner Valley. So what he did, he built 2 wings on to it, I think that's the way it went and was going to have a café and a lounge in there and whatever it took. But he couldn't get his license so I understand that somebody bought it later on and lived in it again.

#123 BC: You mentioned a moment ago Leduc. Could we talk about that period, the before and the after Leduc, the changes you saw in the oil field, in the oil patch?

JP: Of course, Leduc was discovered right after the war. Now in the oil field, during the war, we'd had a hard time getting men, we'd had a hard time getting equipment. And I assume during the war, I know there was not an awful lot of drilling as we know it today, there was a lot of drilling but it was wildcatting, looking for something. Leduc was discovered while I was still in Vermillion. As a matter of fact, the fellow that I had working for me as a drill stem tested, tested that well. And I think Aubrey was on that well, him and 2 or 3 other fellows in the geological department that I knew on that well. Now when Leduc was discovered, it was a major discovery and it stimulated exploration. It was something that they hadn't been looking for and had never found. It's a whole new lease on life for the oil industry in Canada, it's something that they can get their teeth into that will pay for future exploration. So immediately we got a lot more equipment, there was more available, and then we could hire men, we needed them, they were available, they came out of the army and they were looking for work. The same with the drilling contractor. A lot of small companies in the service end of the business located in Edmonton. And of course, by this time we had a lot of competition that we had never had before. Up until that time Dow was a competitor in acid and cement, I think they had a testing tool too. Schlumberger in logging, McCullough was there for perforating and then eventually Lane Wells came in and some of the other perforating companies. Some of them that were formed locally came in later on. But those companies started to come in and the service industry became very, very competitive. Where before that, you could put. . .you know, if somebody had a job you could say, you'll have to wait till I get there. But then when all this equipment started to come in then we had to get salesmen on the road, which we had never had before. Mr. Haliburton used to say that his operators were his salesmen. Well, that all changed with the tremendous competition that came in, in the service industries especially.

BC: Did it also stimulate new ideas for ways of doing the logging etc.

JP: Oh yes, very much so, very much so. But you see, research in that sort of thing, and money for research had not been available during the war, everything was for the military. But then, after the war there were a lot of ideas that came out of military research that were funnelled into industrial uses. For example, in motors, during the war they had improved diesel motors to a great extent but the army was getting them. And in the oil field for example, the explosives that we used for perforating, that came out of the war. I believe it was from bazooka shells that they finally developed this jet??? perforating. I'm not sure of that but I think that's what it came out of. We used what they called FM, frequency modulation, which you have in your radios and televisions now. That came out

of the war you see. And we were with the FM, you were able to send several signals up a single conductor wire, from the bottom of the hole. Up one conductor and then separate them again at the top of the hole. We adopted that. Schlumberger, I don't think Schlumberger do that yet, Schlumberger had a multiple conductor cable that they were using. They had problems with it in their measuring. We used a steel cable and our measurements were quite accurate because there wasn't too much stretch. You could compensate for it in a steel cable but Schlumberger were using a multi-conductor cable which had quite a lot of stretch to it and they had considerable problem with accuracy. Although they did very well. But I mean they did have problems with that multi-conductor. And of course, if you had more than one conductor that's more than one thing to go wrong.

#184 BC: Is this when your mud salesmen sort of came into their own too?

JP: Oh yes. And a lot of trucking contractors, when trucks became available, a lot of people went into the trucking business. Their drilling rigs had to have a water truck and it was all independent contractors. And machine shops, look at that run into Edmonton, from this way, there's Barber's Machine Shop, there's a pipe factory, there's the Cameron Iron Work Factory there. And over off the road to the east, there's just ever so many manufacturing and servicing businesses, over in there, just more than you can count.

BC: There wasn't one up until Leduc?

JP: No. There was only one oil field machine shop really, and that was Barber Machinery, well, Hector's. Hector's was the oldest machine shop in the oil field, they were at Little Chicago. Barber came in to Little New York and put a machine shop in there. Then of course, they expanded greatly when Leduc came in because there was a lot of wildcatting, a lot more work, a lot more rigs and then of course, in later years there was the pipe mills. And they're building rigs in Canada now. They're actually building equipment similar to ours in Canada now. I don't think our company builds any here, I think we still bring ours in from across the line because that's where our manufacturing centre is but I notice our competitor, Nousful??? has completed a deal for the same type of equipment that we use, pumping equipment which is our bread and butter for India. The Indian government is sending people over and he's training them here to run that equipment.

BC: When you started in with the cementing, you were just using the sacks of cement, when did you change to the bulk cement?

JP: Let's see.

BC: Would that be after Leduc.

JP: Oh yes. That would be in about 1948, '49, or '50.

BC: What difference did that make in the oil field?

JP: It made a lot of difference. If you can imagine, in Turner Valley, the standard production string of casing was 1,000 sacks of cement. And it was in sacks. Now if we got out on wildcats it was lesser amounts but 1,000 sacks of cement in Turner Valley, every one of those sacks was picked up by a man. And on our hopper to our mixer, for that size of a job we'd have 2 cutting tables. At the front of the cutting tables, at the edge of the hopper was a knife blade that stuck up in the air. People would carry the cement to that cutting

table, put it on crossways, there would be a man on each side of the cutting table, they'd grab the sack and whip it across the knife and then it would dump the cement into the hopper. Every one of those sacks you see, was handled at least twice, after it was put in a pile there. Now we figured that if we had a good run, we could run, the fastest I ever ran 1,000 sacks of cement with our equipment at that time was 28 minutes. But look how many men you had to have.

#232 BC: You had to have awfully strong backed young men too.

JP: Well, they were all strong back then. But now, let's supposing, like I say, then we started using calcium chloride. Okay how are you going to put the calcium chloride in that hopper. You had somebody there with a pail and he's dribbling it in with a shovel. Or you put it in the water. But you have a 20 barrel tank of water, you say, I'm going to use 25 or 30 barrels of water for this so I'll put that much calcium chloride in. Well, you know how even a mixture that would make or with bentonite or anything you were mixing with the cement. It was a very unsatisfactory way of blending materials, which we had come to realize we had to have for proper oil well cementing. Okay, in the bulk, when you get the bulk cement and we call them bulk cement plants. You see, we had tanks that have cement which we got out of railway cars or a truck from the factory in a tank. We have a big mixing tank, maybe it holds 250-300 sacks. You put your 300 sacks of cement or whatever into this big mixing tank. Okay, you want 2% calcium chloride, you run it into the tank, you want so much get, you run it into the tank. Then when you've got it all in there, you've got air jets. And it just rolls that stuff in there, you've got a uniform blend. Then you come to the rig and ordinarily, if it's a very large job we have a field storage tank which has a sloping bottom. And from our delivery trucks we put it into this tank then the spout from that tank is right over top of the hopper. When you get ready to make cement you open the supply tank into the hopper, it's not touched by human hands and the cement is uniformly mixed, you know exactly what it's going to do.

BC: Were your, I don't like to call them gofers, but your cement boys, with carrying the sacks, have they been replaced then really by chemical engineers?

JP: No, they haven't been replaced, they're still there, but they're roughnecks. You see it was the roughnecks that used to do that. The only thing is that now, all the roughnecks that are on the lease when you go to cement are the ones that are actually working on shift. But when we started out the poor guys would be held over, waiting for that cement job to start. And sometimes it took a long time after the casing was actually on the bottom, they'd have to circulate it, condition the mud, make sure the well was circulating properly, it took hours sometimes. And here are all these poor roughnecks. Now sometimes if they knew it was going to be awhile, if they didn't live too far away and then have them come back. During the Depression there was always men hanging around. And if they knew there was going to be a cement job there would be 10 or 15 of them there, and the tool pusher, if it was a big job he'd just herd them all in and I think roughnecks were getting \$4 a day then so he'd give them all one shift, \$4. Some of them would wait there all night, just for that cement job, to get that \$4.

- #285 BC: But now, with the exploration going so much farther out from the settled areas, you can't have men hanging around waiting for a job, or couldn't have, even at Leduc time.
- JP: They probably wouldn't be there now. There are still jobs done with sack cement in these outlying areas. Sometimes they hold the crews over. If it's a camp job you've got your crews there anyway. So when you get ready to cement you can call them out and pay them overtime. During the war I went to a job at Pouce Coupe, up in the Peace River and we shipped in by train. We unloaded this thing and went out to the rig, it was about 5 or 6 miles north of Pouce Coupe, a place called Rolland???. Went in to the rig and there wasn't a soul, except the tool pusher and the geologist and the cook. He said, well, do you want to do this before our supper. I said, I couldn't care less and he said, let's have supper first. So as soon as the tool pusher had supper he just went down the road and tracked a whole load of farm people. I guess one of these guys must have been his driller because he came back and handled the drilling rig and the farm boys did the manhandling of the cement for us. I thought it was the funniest way of getting up a crew to do a cement job I ever heard tell of.
- BC: Let's look at some of the other technical problems perhaps, that you've run into in your long career in the oil patch. Any really big problems that you ran into?
- JP: Offhand, the biggest problem, for years, when I first started, was roads. Because we didn't have gravel roads, except the main highway from Calgary to Edmonton and the one from Calgary east, which wasn't even a very good road anyway, even as a gravel road. That was the biggest problem because we only had the one base of operation and we were servicing wells as far away as into Saskatchewan, up at Vermillion, and we even went to the Peace River country. And our equipment was limited, so you had the long distances and this was a major problem in that area because once you're off the main roads it's mud and if it starts to rain on you, you had a lot of difficulty getting back and 10 chances to 1, there's somebody waiting somewhere else. This was one of the main problems. For ourselves of course, during the war, was being able to get equipment. Because you couldn't buy trucks then. It was all reserved for the army. You couldn't get men, although, at Vermillion, I'd have to say that I had. . . I didn't have a full crew but I had good men, people you could trust. Sometimes, like I say, we rarely ever had 2 men on trucks, many, many times we would, one of us take off in each direction with a truck and do jobs all by ourselves you see, things like that. But you can do it. And if you get along well with the roughnecks at the rig you can get a lot of help from them. If the roughnecks didn't like you, you were in trouble anyway. So you generally tried to get along.
- BC: Can you think of any anecdotes, stories that happened, problems you had driving on some of these long treks, into Lloydminster and up to Vermillion?
- JP: No problems really. You'd have the odd breakdown or something like that. I do remember one breakdown during the war, we went from Vermillion to Kamsack, Saskatchewan, which is a good long trek. The 4 Wheel Drive truck was a logging truck and we took the front rear end out of the truck. And there we were of course, you can't get parts. We had a cracker jack mechanic. . . .
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JP: . . . in permanent fashion out in the bush but I would have to say, it would go back to your mechanics in those days being so capable. What I find with mechanics nowadays, in garages or even our own mechanics in the company, they're replacement people. They don't repair anything. If a generator goes out they send down and get a replacement or a rebuilt generator. If the carburetor goes out they don't get the pieces and rebuild the carburetor, they get a replacement carburetor. Or like this mechanic I was talking about, he installed a half breed front end, right out in the middle of the road.

BC: Would this be in the summertime?

JP: Yes, fortunately. Although I can remember one time, out, it would be north of Vegreville, way up in the country there. There was a well there that had been drilled years before and improperly abandoned. There was no machinery there or anything but the government hired General Petroleum to go in with their service rig and abandon it. So we went in there and they had a little service rig on the hole and we eventually abandoned the thing but while we were there it started to snow. And trying to get out of there, one of my drive shafts broke. That was during the war, you couldn't buy antifreeze either, so you had to drain the water out of your radiator there, send for your parts. So we went back in there, another fellow and I, with the parts. I didn't even know if that truck was going to start, it had a 6 volt starting system on to begin with, it wasn't diesel it was gas fortunately. So while we were putting this thing together, the cement tubs that we had were about 3' long and 2' wide and a foot and a half deep. We shovelled them full of snow you see, and built a fire under it to get some water and kept doing that and we got water. While we were working I took a quart oil can and put a little oil and then diesel fuel or whatever, down in there and some cotton waste and I lit it and I put it under the pan of the motor. Then every once in awhile, we had a crank on the motor in those days, and every once in awhile I would turn the crank on the motor to try and stir the oil up a little bit. I remember I was about half done underneath and we had about half enough water and I flipped the crank and the motor started. So we had, like I say, half enough hot water in this tub I guess, so we poured that in and started the motor and kept it going and then we finished up on our drive shaft and then we got out of there. I was never so glad to get out of a place in my life I don't think.

#026 BC: I have a couple of names here, that we haven't talked about when we were talking about Reuben and Zanmer, Neil McQueen.

JP: I didn't know Neil McQueen well. I'd run into Neil McQueen quite frequently. These wells that we used to work on in about 1938, '39, out in eastern Alberta, I think Neil McQueen was on them. That was out in that Princess area. Now that might have been later that he was out there. But I know that he was involved in the Leduc field, in the early days. But I didn't know Neil McQueen well. I had heard of Neil McQueen when I was in high school because he was involved in mining, gold mining, in British Columbia and I

had an uncle that was involved in gold mining over there. Neil McQueen was involved somewhere, I think it was in the old Bralorne gold mine, over in the Bridge River country.

BC: And then went into Pacific Pete.

JP: Well, he started Pacific Pete but I don't know that when I first knew him that it was called that. See he, I can get Neil McQueen confused with the McMahan's too you see because they were coming up at about the same time. The McMahan's were working over in Princess, that's who it was, was working over there. Neil McQueen was in Turner Valley. Actually Ken Doze, when Ken Doze left Haliburton, he went to work for Neil McQueen. Now what company that was I can't tell you.

BC: What about George Clokey?

JP: I only ran into him occasionally. He was a promoter. Not as sharp a promoter as some I've seen but he was a promoter. He was involved in Turner Valley and then last time I ran into him he was up northwest of Cochrane, involved in a well up there. But that was years ago, that was in the 50's.

BC: That would be junior or senior.

JP: Now I couldn't tell you.

BC: I have another note here about fracturing and we haven't really talked about fracturing and that is something that Haliburton. . .

JP: We pioneered it in Canada. It's a process that was developed by the then, Staniland Oil Company, who eventually became Amoco after a couple of different changes in name. We wanted an exclusive but they wouldn't, they gave it to the service industry period. But we brought it into Canada and as far as I knew, the first well we fractured in Canada was in Virden, Manitoba.

BC: Could you explain what fracturing means?

JP: It is simply pumping a fluid into a well, and applying hydraulic pressure enough to it, that it will actually split the formation at the bottom of the hole. Then that fluid that you're pumping in has to be viscous enough to carry sand with it. So you're pumping a sand-oil mixture, or a sand-some other fluid. When you take the pressure off then the carrying fluid will flow back into the well, the sand stays and props the fracture open so that the production can come through it. And that's all fracturing is.

BC: It sound simple but obviously isn't.

JP: It sounds simple but there's hours of work with cores in the laboratory, they've developed other kinds of propping agents besides sand that they use in certain instances. By working with the cores they can tell how the formation will fracture, how much sand you have to pump and then they analyze the porosity and permeability and tell you how much fluid you have to pump to get back. A lot of this is done on computer now.

#066 BC: And all this of course, is to make sure you get as much production out of that whole well as possible.

JP: That's exactly right. In a formation, now Aubrey could explain this a lot better than I can but in layman's terms, in a rock that's containing oil there can be porosity which is holes in the rock. Now in certain areas those holes will be isolated, so that if you drill through

there and open up the well, only the holes next to the bore hole will produce because they're not connected. This is sometimes, you can get a certain amount out with fracturing back and opening that up. Now the ideal situation is to have porosity and permeability. Permeability is connected pores if you want to call it, it's connected. . . what do you call it. . . I said to you, you have these cavities, minute. . . Now mind you, in a formation, even a good oil producing formation those pores and that permeability is very, very fine. So fracturing or acidizing, whatever, will open that up. Now acidizing of course, is a limestone stimulation product because the acid will eat the limestone. Now bentonite and clay and sandstone, hydrochloric acid doesn't work on that. Now they do use it in some instances on sand formation where they use hydrofluoric??? acid. And that does do some good but in a sand formation such as Drayton Valley and places like that, fracturing then becomes your ideal stimulation tool. Now they do it in limestone too, but it's not ideally suited to limestone as it is to a sandstone formation. Actually the second time I was in Turner Valley, I moved back into Edmonton because we were just going to start fracturing and I went back to start it, take over the chemical department. And I ran both acid and fracturing at that time, out of Edmonton. So I didn't introduce it because there had been about 2 or 3 jobs done before I got there, one of which was the Drayton Valley, initial well. If it hadn't been for fracturing, Drayton Valley would not be a field.

BC: Why is that?

JP: Because the permeability had to be opened up so it would produce. And that's what made that field was fracturing. Because as soon as you fractured it you had real good wells. And of course, there's fracturing all over the place now. They're doing huge fracturing jobs. What we did then were small jobs, we didn't have the equipment to start with, like I mean now they'll use thousands of gallons of fluid and hundreds and hundreds of sacks of sand, well we didn't even have the capability of pumping that as rapidly as it needed to be pumped or we'd have had a hard job I guess, in some instances, getting the stuff to the lease to work with.

#101 BC: You wouldn't have had the roads, that's for sure.

JP: No, in Drayton Valley the roads were very, very poor. It was a muskeg when we went in there. Over the years, they built roads all through there with deep ditches and that's what drained that muskeg in Drayton Valley to a large extent were those ditches that they put beside the road. But man she was tough going when we first went in there. And there was nothing to Drayton Valley, there was a grocery store with a gas pump and I think the post office was in the grocery store if I'm not mistaken.

BC: What year would that be?

JP: When I first went there it would be about '52 or '53, I'm not sure of the date. There was a church and I think there was a bit of a service station. You couldn't eat, you went into the store and bought cheese and crackers or something like that.

BC: So did you bring the whole camp out and set up a camp?

JP: Oh no, we went out of Edmonton. I can speak of this first job that we went to, we left Edmonton about 4:00 in the morning and went out to the well, we got to the well probably about 8 and set up, it probably takes 2 hours to complete the job and then we

were ready to go home again.

BC: What about the people who were working on that well?

JP: There was a service crew on that well. The drilling rig was gone, it was just a service rig and a service crew and I don't know where they lived. They probably had a camp there somewhere but I never found it. I never looked for it, we didn't bother.

BC: You were just in and out.

JP: We were just in and out. And that's the way we handled that for a long time there. There was no place for you to stay out there, so we just handled it from Edmonton. It didn't seem so bad in those days. Now you couldn't get anybody to do that, you've got to provide them a house beside the well.

BC: ??? certainly not with radiant heaters down beside the log wall. What about the perforating service, we haven't really gone into that too much?

JP: The first perforating company of course, were Lane Wells. I can't remember the dates but I think it would be about the winter of '38 that Lane Wells came into Calgary with a perforating service.

BC: ??? with the perforating service, I think that would be important.

JP: Did you know Spi Langston, have you run into him?

BC: No, I have not.

JP: Are you going to because he worked for Lane Wells then, he'd be able to give you the history of Lane Wells in Canada. Perforating is actually running a gun down into the well. Now the gun is cylindrical and the bullets are placed in the gun crossways. You think of a gun barrel as a 30-30 or a cannon or something, a great long barrel. The gun barrels are only 4" long or so. This is one type of perforating I'm talking about. It's an actual bullet and in your gun, I think our gun, each section of the gun had 10 barrels. They were staggered around. On our gun you could fire them individually, one at a time. Or if you had 2 sections, you were firing 2 barrels at one time. That was designed to pierce the casing plus the sheath of cement, then go into the formation to allow your production to come in.

#142 BC: This would be done after you'd done your logging?

JP: Oh absolutely, you do your logging before the casing is done. Then you run your casing. And this is done in an are where you're running your casing through the production horizons. Sometimes, in the olden days at least, I don't think they do it anymore but in the olden days they ran the casing to the top of the production horizon and left the hole open below that. Now they run the casing through so they have to perforate to get to it. Which is another thing they figure out scientifically now, how many holes you need per foot in that casing to let a given amount of production.

BC: How did you figure it when you were . . . ?

JP: By guess and by god. Now the perforating they do nowadays, they still use bullet perforating, it's available. I don't know how many people use it, probably not many but they what they call jet perforating which is this type of a bazooka shot I was talking about, it's . . . I don't think I could explain it but it's not a solid projectile, it's a stream of energy actually that just. . .

BC: So like a laser beam.

JP: Like a laser beam. The way they explain it to me, it's a stream of energy. Now Lane Wells came into Canada with the bullet because the jet wasn't available until after the war. They didn't stay in Canada very long that time, they left in the fall of '37. They were here for 2 years and they pulled out, there wasn't enough revenue for them. Then we had got ourselves an electric logging truck by this time and we didn't have [perforating service in Canada but we had perforating service]???. Now Lane Wells had perforating here after we got the logging truck because they pulled their perforating out and then we brought our perforating in, in connection with the logging truck we already had here. Because we didn't have to have perforating, it wasn't our only source of revenue like Lane Wells was, so we were able to operate it in conjunction with the other services. So we brought that in and I think that would be about 1940. But it was strictly bullet perforating at that time. There wasn't an awful lot of it done for a lot of years. We perforated at Vermillion, in those wells there.

BC: Most of the wells were just to the top of the formation?

JP: Yes. The only thing, at Vermillion, it was such a thin producing horizon and so much sand came in that they used the perforating, ran the casing through and then perforated and the holes kind of screened the stuff as it came in. But we did perforate there. That was good revenue country for us, we had the cement jobs and the electric logging and the perforating. And sundry other little jobs that you picked up now and then.

BC: Are there any other stories that you can think of or areas of your expertise in the time that you were in the oil patch that we haven't covered?

JP: No. I don't know of. . . my expertise, I don't know if you would call it or that or not. I considered myself a pretty good technician in the various services the company had. I probably wasn't their best one but I don't think I was their worst one either. I got out of that field work a long time before I quit and I went into safety and training. Then I wound up as personnel manager here in Calgary for the last 10 years.

#191 BC: That must have been quite a step too, in going into safety and training for safety. When you went in they didn't have hard hats.

JP: No. I'll tell you, we were having such a terrible problem. I was a district superintendent, no, I was in charge of the fracturing and acidizing, which is equivalent to a district superintendent because we didn't have district superintendents in those days, we had service superintendents. We were having a terrible time with accidents, both vehicle and personal injury.

BC: Why, do you know?

JP: We were expanding so fast that improper training, not time enough for training. I have a letter somewhere from management when they made me safety supervisor and they actually, right from the President said, you are now in charge, you can go out and clean this up and you don't have to answer to anybody but me. That's how serious it was. And of course, I was full of vinegar so I went out and if I do say it, I did do a real good job. We cut our vehicle accident damage in one year, from about \$90,000 to around 30.

BC: What did you do?

JP: Just got hard. And I made a lot of enemies. And I did myself a lot of harm by doing that because I could actually go out and fire people over the head of a district superintendent which didn't go down very good with the men. And I did myself a lot of harm and it took me a long time to come back from that. But I did.

BC: You might have saved a few lives too.

JP: Well, it's possible. But then I think that I probably, if I had the whole thing to do over again, I might pick the spot where I was going to get hard and I might work through the district superintendent. Because actually those men are working for him, at least they think they are and here comes some rank outsider in and says you're through.

BC: Why would you fire someone, as an example.

JP: As an example, we had some intoxication. We had some out and out carelessness. I remember one time I went to Whitecourt, we'd had a truck turn over and the man was telling me about it and he laughed at me. Well, he's not even sorry that he dumped a unit worth 75-80 thousand dollars, so I said, good bye. You at least want a fellow to be a little bit sorry. But intoxication in many instances, or liquor involvement.

BC: You find that today in the oil patch, that because it is so highly technical and you need to have so many skills, they find to work in there that the safety factor is one of the major factors in running a good team.

JP: Definitely. Safety is one of the prerequisites of any job because it will cost you more to have accidents than it does to prevent them. In other words, here Haliburton, these cementing units which are now worth, probably 125-250 thousand dollars, okay if you train a driver to drive that truck properly so he's not going to roll it over and do \$100,000 worth of damage, the amount of money you're going to spend training him is peanuts. If he is on that truck and the driver is the one that has to operate the pumping equipment, okay, if you don't train him properly it's possible for him to close the wrong valve and blow the whole pump sky high.

#248 BC: And himself.

JP: And himself. And also he could do incalculable damage to the well he's tied into. Okay, the amount of money you spend in your own yard with a tank full of water, getting that guy to run the pump in every configuration, until he knows how to run it, it's not the same as on a job but at least he can get familiar with it so he's not going to blow himself up, that money is money well spent. And I've got to think that anybody in industry will recognize that fact. I know in the oil field they have a very strong safety association, they did when I was there.

BC: So this is what you would have them do, you'd have them practice in the yard.

JP: I never got to that. They didn't get around to that until after I left. When I left they hired a permanent driving instructor. By the time I left I was in the Calgary office as personnel manager and my main job was safety paper work, keeping track of safety awards. Also dealing with insurance companies over accidents but I never was actively involved in the field after that point. The company went in quite strongly for sales training and supervisory training and I had gone to the States, my first trip down there would be in

about 1956 or so, I went to the States and took the University of Oklahoma management training course. It was a concentrated, shortened course that was given to about, maybe, probably 15 of us. Then I went back each year after that and then in addition to the Oklahoma University we had Ohio University courses and then I went to the Banff School of Advanced Management for training. Then I took some training through Xerox also. So at the end we were using, the basic supervisory training was our own company supervisory training which we put together to suit our own people. Then as a dessert if you like, we were using the Xerox training courses. They're pretty high powered, anybody that's ever used the Xerox knows that you can't be successful by starting off with the Xerox, it starts at too advanced a stage. It's for advanced managers so if you want to make managers you have to use your own, that's type written for your own company. and we used the Xerox sales training also. And that was what I was putting my time in at, at times when we could organize these courses. You can't have people out of the field too often, because training is kind of expensive but I think we did a pretty good job. When we took the mud company over, one of the people we inherited with the mud company was Jerry Keeling and I had him in several of the sales training courses. I think Jerry Keeling was the sharpest mind that I ever had and I could understand him being a good quarterback. His mind was just as sharp as a tack. But then of course, I got up to retirement. Well actually, in any company, when you've been with a company, and I'd gone through about 3 or 4 Presidents, it seemed like there was a new philosophy of management in. And I'd been there 40 years. I was in the shape where I could retire, my wife and I had our retirement planned. Anyway, so we retired and we did exactly as we planned. We had 2 really good years and now she has developed arthritis, so we're not as mobile as we were but we. . .

#326 BC: You've seen a lot of changes in the 40 years you were in the oil patch. What was the biggest?

JP; There were several. The first change that I actually witnessed was the change from cable tool to rotary drilling. Then the next major change was from steam power to gas and diesel power. And that was a major change. That was in the drilling rigs. Then in our own company of course, our equipment, when I went to work, our pumps for cementing were steam powered and we hooked those into the rig steam plant. And then we changed to gas and we changed to diesel. Then of course, the major changes were in the cementing techniques and cementing materials, the stimulation techniques and the stimulation materials because we went from nitroglycerin to acid, to sophisticated acid to fracturing and now they're doing these mammoth fractures and acid now. Cementing, we went from your ordinary sidewalk cement to the various quick setting cements to the cements actually manufactured for oil well use and all the various additives that go with that. Drill stem testing, we went from the old stop cock testing to the sophisticated type of valve packers, sample chambers, you name it, that they have now. Electric logging, we went from the old audio-modulated, which told you very little else but the top of the. . .

End of tape.

