

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Peter Putnam

INTERVIEWER: David Finch

DATE: July 2001

DF: Today is the July 26th in the year 2001 and we are with Mr. Peter Putnam at his office at Petrel Robertson at 1700, 300 - 5th Avenue S. W. in Calgary. My name is David Finch. Could you start right at the beginning and tell us where and when you were born?

PP: I was born in St. Catherine's, Ontario on August 15th, 1955.

DF: Now your education, what were your parents doing, your childhood?

PP: I grew up in a family that was involved with the auto industry, my father worked in a auto parts plant for 46 years and I went to school, all through my formative years in St. Catherine's. I did my bachelors degree at Brock University and then subsequently moved out to Calgary to go to graduate school.

DF: In what area?

PP: In geology.

DF: And what got you interested in geology?

PP: What got my interested in geology was, it had nothing to do with science and nothing to with rocks, it was growing up in the classic urban landscape of southern Ontario I found extremely distressing and I wanted to find a career that would pay me to see the world. As it turned out I'd rather have taken history and French, romance languages actually was my main interest. But I got hard headed about it and decided that the practicalities of life suggested that maybe I should do something in science and find employment that would send my hither and thither. So that's what made me go into geology, because geology really is a form of history. It happens to be not human history but it's still an historical context.

DF: Sure. And your graduate degree, you came here for. .

PP: I came here for my Master degree, which I did from 1977-'79. Then I went to work for Husky Oil for 3 years and I went back to school, I was a full time employee and a full time PhD student from 1982-1985. And I did my PhD at University of Calgary and finished it in '85.

DF: Nice gig.

PP: Yes, nice gig. When you're single and you have no commitments you can do things like that because as you can understand you really have no life. Because at the time, I did it because the work I was doing was with Ed Klovan, another past President who used to be the head of the department at the University of Calgary and so I was working with him. And we were doing a long term project and I thought, gee, this is perfect, I can kill two birds at once here, I can work on this and probably get a degree out of it at the same time. Things at Husky, management was quite receptive to that, they let me do that. But in my last year I was transferred into an operations group where I was drilling, the group was

doing 50 wells a month and I was trying to write my thesis at the same time, that was a bit difficult, needless to say.

#028 DF: I'll bet. What was your area of research in the graduate program?

PP: My Masters degree was on channels, rivers, which was an old interest of mine. Actually my bachelors training, even though it says geology, is really in hydrology. I actually came out to Calgary to work on acid rain for the Ontario government. And when I came here I switched fields and went in to rivers, which is something I've always been interested in. That was my Masters degree. For my PhD we were, at Husky at the time, developing a large computer data base, probably the biggest play specific computerized data base at that time probably in the industry. 12,000 wells, done at a resolution of 1/2 a metre over 500 metres of section. My thesis then basically was, the application of that, those automated approaches to assessing thermal recovery pilot sites in Saskatchewan. So that was how I got involved in that.

DF: Great. And your career since then?

PP: I actually left Husky just as I was finishing my PhD, that was in 1985 and I came here to Petrel Robertson. It was called Petrel Consultants at the time. I wanted to learn a little bit about geophysics, I didn't really know much about that when I was at Husky so I left and I've been in the consulting/service sector ever since.

DF: And how much has geophysics been part of your career since?

PP: Not really that much. At the end of the day, I mean, the company I work for now, historically has derived a lot of its money from the sale of geophysics but for me geophysics is a tool, like a pencil or a pen and really, it's the geological thinking that leads to the geophysical business opportunity. So in that sense geophysics has had a major impact from a financial point of view, in terms of this business. But it's still the front end geological thinking that drives the geophysics and I don't claim to be a technical geophysicist in any way, shape or form. I don't know anything about that stuff. But I do have a better understanding of the front end thinking that goes into the design, layout and assessment of geophysical programs. And where one can actually derive significant financial benefit from basically, an intellectual concept that ultimately involves the acquisition of geophysics.

DF: Now if you don't mind me doing the comparison between you and the older geologists, one of the complaints that they have is that you younger geologists don't have much field experience, is that true in your case?

PP: No. In fact, I'm probably one of the more field literate geologists in town. And that was part of the reason why I took geology initially, as I say, to get out of the urban landscape of southern Ontario while I wanted to see the physical world. I've always been true to that premise and when I started at Husky, they were very good to me about that. I made a deal with them, when I first started work I said, look, I will take every one of my weekends and all my vacations and I'm going to go in the field, will you pay for it. And they said, yes, you take your time, we'll cover your expenses. And so all during the summers I would go out with Derald Smith from the University of Calgary and we would run around every back road in B.C., Montana and Alberta looking at areas that he wanted to pursue

research in. So he would find some areas that he would then conduct research and every weekend I'd go out and be an assistant and hang out. Derald is in the Department of Geography at the University of Calgary. And over time, at Husky, I actually requested and was allowed to develop an in-house field program for our staff. So we set up several field trips to Montana with Dr. John Hopkins of the University of Calgary, Derald Smith, we would go to the west coast and to central British Columbia to look at modern environments. We would do specific ones, for example, Grant Mossop of the Geological Survey of Canada now, he was at the Alberta Geological Survey at the time, would do tar sand field trips for us. When I left Husky and came to Petrel, one of our business lines is teaching people, exposing them to the field. And in fact we run field seminars, have run historically from north Africa to the Caribbean, to the west coast, to Montana, to northern British Columbia, to Drumheller, to the mountains, the usual local.

#073 DF: Is that because companies aren't doing that anymore?

PP: I think partly because companies have. . . the major companies used to be of course, breeding grounds for this and at least, in the Canadian context, they don't maintain that capacity here any more and there has been a tendency to send people out. There's always been a lot of people from Calgary have historically used the American Association of Petroleum Geologists field seminars, they are quite popular. But we've developed a kind of local one, it's more of a niche market but it's there. The other thing we did, to come back to your comment about field, is we probably did the last major provincial field party that was done entirely by a private company. And that was done in the middle 80's and that was something that I had pursued when I came here is to work on the Cretaceous outcrops of the front ranges or the inner foothills and outer foothills. And we spent probably 12 months doing field work from the Montana border to the Athabasca River. On a variety of different units for a variety of different companies. I appreciate the comment about the lack of field experience and I see that too, but I think my view has always been, the field experience is how motivated you are to go get it. And if you want to go get it you can get it. And I didn't come from a major field background as a . . . my training had a lot of field exposure as students but when I was a summer student working, we never had a lot of access to summer jobs. It wasn't until I was in my 3rd year that I got my first field position and that was in water, it wasn't in rock. So I think there's still lots of room for the field side of it. I think the people who have seen the field side of it, both outcrop and modern examples, and well site, are the best exploration people, no question.

DF: Why the trend away from that in industry more recently?

PP: Because the industry has been seduced by machines. And as someone who's got a PhD in computer applications, I can say that and I frankly, I wouldn't call myself a luddite completely but computers are just pencils and filing cabinets, really as far as I can tell. It's completely seduced an entire generation of managers and through them the staff and what they look for in hiring practices. They don't look for the best geologist anymore, they look for someone with a geological degree with machine facility and quantitative training. Not that those things are bad, don't get me wrong, I'm not saying those things are bad but if I want a geologist I want someone who understand rocks, the physical earth. And if I

want a computer person I'll go get a real one. But each company has their own. Probably the development of 3 dimensional geophysics really was probably the first wave into this and then the geological community kind of came after that. The whole global petroleum industry is seduced by technology.

#104 DF: Can we spend a few minutes you just telling us a little bit more about that 1985, that big survey, what did it entail and what were you doing?

PP: On the survey?

DF: You said this. . .

PP: The field party, that was 1987. That was when I came here and then we set that up. The whole premise of that was, if you look at Turner Valley, the original production of Turner Valley is not out of the carbonate section, it's out of the sands and the coarser material found above. And we took the idea that you know, there's the current production there, at the time there was a new breaking exploration play in what's called the Belly River formation in west central Alberta and we were heavily involved with that. And we used to do a lot of, what I'll call, roughly path finder exploration work for Texaco. And so we took the idea to Texaco that the exploration for conglomerates in the foothills should open up, in terms of surface work, should open up opportunities in the subsurface in front. And the analogies we used were Turner Valley and these new wells that were just being drilled in an area called Peco, which is west of Pembina. The historical approach to field work I think, the traditional approach in applied geology would be, you go look at the surface and you'd see reefs or channels or whatever and you say, okay, I see that, underground somewhere, in the distance somewhere I should see a similar situation. Well, we had a little twist on this because there was a lot of well control in front of these outcrops. So before we went into the field we had done a series of maps in front and we said, we were looking for channels, going back to this love of rivers and if we were right you could go the other way. If our trends were correct you just follow the river that you mapped in the subsurface and it should pop out in front of you and it did, at Brazeau River. We saw what we believed to be the outcrop equivalent. Well, it's turned out to be a fairly significant oil field. And then of course, what that told us was, okay, so whenever we see a similar feature and there isn't the wells in front, the wells aren't present in front, there's an opportunity in front of this outcrop, which is a traditional approach. So we were kind of iterating back and forth, but it's kind of an interesting approach.

DF: Explain to me why rivers are so important in geology then, in petroleum geology?

PP: They're very complicated reservoirs. They can be extremely prolific when you find them. The most compelling example is the tar sands which are found in a series of tidally influenced rivers, the vast bulk of tar sand assets. But because they're complicated there's a high risk associated with them. They're geophysically very hard to image and there's a lot of failure. So as much as people would like to find them, they're almost always found by serendipity, especially in the oil side. In gas, they have other techniques they can use in geophysics to see them. But that's really the. . . boy, everybody loves to have them but it's one thing to want it, it's another thing to get it.

#137 DF: So what did you do in '87 then?

PP: We mobilized a series of field teams. One was working between the North Saskatchewan and Athabasca Rivers and the other was working out of Pincher Creek, between the international border and Turner Valley, just south of Turner Valley.

DF: And what exactly did they do?

PP: They were measuring sections. And we were specifically looking for conglomerates. The whole idea of that was, in the deeper part of the western Canada basin, as the sandstones become buried to a certain point, there's a real, very systematic relationship between grain size, ??? and the preservation of porosity. So the whole idea was the coarser it was the better it was ultimately for maintaining porosity at depth. And so we focussed on conglomerates. We also, when we looked at the geological column it struck us that there seems to be, it's not an exact relationship but it was qualitative, that when you see conglomerates in different units, they tend to be found in the same geographical areas. So what we wanted to do was focus on those areas and try to stack the different units so you would have a multiplicity of targets if you're going to pursue that style of play. And the other thing was creekology, it also struck us that most of these conglomerates were found along the modern day drainage patterns that traverse the foothills. Because that tells you that they were there first and that the rivers cut down as the ??? belt was growing. So those were the exit areas for these coarser materials into the basin over geological time. So our premise was, let's pick the major river courses, where we know there's conglomerates found in the subsurface in front and let's go look at the outcrop in those areas to see if we can high grade where you might find the coarsest potential reservoirs and those would maintain their porosity in the deepest parts of the basin.

DF: With what kind of success?

PP: The Belly River one, that was really our main focus at that time, has evolved into a difficult but very big field. At the time we started the AUB, or the ARCB had assigned this Peco oil field, 43 million barrels in place with only a 10% recovery. If you do the numbers now it's well over 100 million barrels in place and it's 20%, in fact, it's over 20%, it's produced 20 million barrels. So it's clearly evolved into a significant light oil opportunity and in my biased, narrow view of the world, I actually think it's the biggest light oil opportunity left in the traditional exploration areas of Alberta. Because we think that there are areas where it hasn't been actively explored. That would suggest there are some big, big opportunities still present.

#170 DF: Why such a high recovery rate?

PP: I think what happened was the unit is under pressure and in that part of the basin the historical focus has been on deep plays, in the Devonian and in the Mississippian and the old rules governing well drilling mandated that you didn't have to use a proper drilling system or even take drill cuttings until you hit the Cardium. So this particular unit has been completely damaged, abused and overlooked by industry because of these factors. And what happened was, in the middle to late 80's, companies like Dome and Texaco, they decided that this was going to be their main focus in this area because they had some success with some wells. And when they decided the Belly River would be the main

target and not the secondary target while they're drilling for deeper targets, their success rate went way up and the productivities per well went way up because they handled the reservoir in a more appropriate way. But today, I mean, these people still want to find these Belly River targets but as I saw, channels are hard and people are still going for the deeper targets first. Over time we'll see that there will be more and more discoveries in that unit. And as I say, in terms of light oil if you went to any company today in this city and said, here's 100 million barrel light oil prospect in western Canada and you wanted to compare it with what they had, they wouldn't have any. I guarantee, they would not have any. They have gas plays that are bigger but light oil, no, I don't think so. So that was an interesting circumstance that's evolved and we were first involved in it 1986 at this firm. And we've been involved in it every year I've been here, since 1986, in one way or another.

DF: Now you worked for Husky and now you work for a consulting firm, can you compare the two, what it's like to work for. . . ?

PP: Well, in a firm like this you get to dance with all the girls and that's always, I think, better. When you work for an operating company you have more resources and more technical focus and you're dealing with the real tangible wealth creation of the petroleum industry, of finding and producing oil and gas. When you're with a service company, like this one, the analogy would be Wayne Gretzky, you don't score any goals but you might get a lot of assists. We assist, we don't take the credit, we often do a lot of the front end thinking for people's ventures but clearly the people put the money down, drill the wells, find it and produce it, that's what the operating companies do. And really, I think, to succeed in a situation like this you need to have that operations background, that's really where you get the insights into why your intellectual processes have any value. I mean, you really don't know that unless you've been through the war and actually gone from concept to land sale to drilling wells to getting it out of the ground.

#203 DF: Now you've been here long enough to see at least one major boom and bust come and go.

PP: Oh, several.

DF: And some other ones, what do you see as the main factors in that cyclical process at this time?

PP: I think the problem that I see facing. . . it's almost a global problem, not just local but it's definitely local, North American local, there is not what anybody would call exploration going on today in any way near the same form that it was when I first started and I'm sure older people than myself would say, that's not even the same as when they were. Partly it's due to these booms and busts that when sort of the first one, '86 hit, that changed the whole persona of the industry. It basically gutted the risk taking side of the business and companies were so focussed on core properties and squeezing what they could out of existing low risk circumstances that they, basically, I would say, have killed a generation of exploration thinking. Now if you joined the industry in '85, you would be a 16 year person, which is a fairly senior person and you may not have done any exploration and you might have 16 years of one years experience in effect, by knowing everything there is

to know about 1 or 2 properties. The whole idea of core properties and business units really defeated exploration. And the big firms, they're still in my view the best exploration companies on the planet, when oil went to \$10 it was no mystery where they were going to go, they were going to bigger, higher reward areas of the world and they've done that. And whether it's the east coast here or now, northern Canada or whether it's overseas, that's where the A-team of exploration, that's where they're all sent for the more significant firms. Smaller companies don't really risk, they don't have the risk dollars, they don't have the technical depth. I mean, to put a really high impact, like a major discovery and I don't care what the board classifies wells at, I'm not talking about a one mile step out but a real high impact discovery takes time and we're talking years, it takes people and it takes financial commitment and some staying power. Nobody's drilled more dry holes in the foothills than Shell and no one's had more success. To me, it's really no different, people are not prepared to pay the price to have the big score. They really aren't. And I'm generalizing of course, there's always little pockets here and there of companies that will be a little different, like Berkeley would be an example of one that just disappeared off the scene, but they were probably the most compelling example of a smaller firm that grew by really exploring, finding something really new. Not by buying it on the Toronto stock market and not by just buying a throw away property because Esso was getting out of it and going from one well per square mile to 16. That to me is not exploration. And I don't know how you turn that around because exploration is, I mean I know it's a bit of a cliché in geology but it is a state of mind as much as anything. We're now driven by business models and computer technology and if you don't see it on a 3-D seismic section do you really want to drill it. And that permeates. . . and the business course is doing really, really well right now, it's generating lots of cash. But we're not finding anything new, as a society the lack of exploration is really clear right now because we're drilling 20,000 wells and our production went up this much and of that much, 80% came out of one play in northeast B.C. That tells me everything, it tells me that there is no original thinking going on out there in terms of exploration. That's the big difference between now and when I started.

#250 DF: You're talking like an old timer, you've been here 16 years, well 20 years if you go back to your first time but yes, relatively short. Is there original thinking to be done in a mature basin like Alberta?

PP: Oh yes, yes there is. The trouble you get into, and this is actually where the automated filing cabinet is useful and that is that the difficulty and the opportunity in western Canada is that there are so many wells. They're all available for anybody who would like to look at them. It's getting the time and the effort to compile all and comb all that information and then use it in an effective way.

DF: And see something new.

PP: Yes. I've worked on 6 continents and this is, by far, the top of the heap from a technical point of view. Alberta, and Saskatchewan and B.C. lesser, but Alberta of course, just towers over every other jurisdiction on the planet in terms of competition because it lets everybody from one man band to Exxon have access to the same information. And every

two weeks it's a public auction and you put your money out there and you see how you do. And that's fantastic. And it's the most efficiently explored basin in the world. People talk, especially our American friends come up and say. . there is a little, I'll call it cultural arrogance, you know, they have this perception because their drilling densities are less than we really haven't done it right and we're going to be educated by our friends from down south. And of course, for those of us who remember 1982 and the migration to Kansas and how the Canadian industry essentially got wholesale rate down there, I'm smiling because I'm seeing the shoe might be on the other foot here and I suspect a lot of people are overpaying for assets because they think there's all this opportunity and I'm not so sure there is. Canadian companies are extremely efficient at ringing out the assets that are here. The real opportunities are going to be in exploration but if you're coming out from outside you've got to spend some time getting educated because it's a very competitive business. And that data base that the government puts at play for everybody is incomparable, absolutely incomparable. And it's frankly the only reason this province has an industry I think today. Because you look at the production rates per well, they're not that great but it's the fact that the information is just there, it's cheap. And there's all this competition you know, everybody's got their own idea. You know, 9 square blocks of downtown Calgary, I think there's about 1,100 registered oil and gas companies. Now most of them are one man bands but. . And you've got the third biggest concentration of geo-science power in the developed world, outside of London and Houston. And you've got all that public data, oh, powerful combination.

DF: So it's an interesting role government has played.

PP: Absolutely. And I have to say, the development of the ARCB is really what makes Alberta so outstanding, that and the land system. This data, this public data, you get it for one, it's like athletes right, and you go to other parts of the world and everybody gets a 4 million acre concession or they drill a well and they produce from the shallowest part of the section and they keep all the rights down to the moho and that's not competition. I'm a little bit amazed, as I say, at some attitudes, that you run across from down south because they think that the AUB is the dead hand of big government or incipient socialism and yet it is no different than the National Basketball Association. What have you done lately, you've got it for a year and if you haven't done anything with it, too bad, we can all look at it. And I think that is the ideal and I'm really disappointed that more countries haven't adopted that approach. I don't know if it's true nowadays but years ago it was interesting that Canada had 2% of the conventional oil reserves in the world but 10% of the market capitalization. And there's got to be a reason for that. And I think a lot of that reason is the way the government has managed this industry.

#305 DF: So you think Alberta has something that beats Ottawa?

PP: I think Ottawa has learned that lesson. If you deal with the frontiers, which we do a lot of. The Geological Survey of Canada is a first class repository of information. The National Energy Board isn't. It's a little bit more chaotically organized but no, in terms of well data and core data and production data, the Geological Survey of Canada is a good place to go for information.

DF: So Alberta is going to be developed for a long time yet but where are the big plays in the future and what's going to bring them on line.

PP: Frontiers. And it's going to be driven by U.S. demand. The Mackenzie Valley, my bias on this is, yes, there will be two pipelines but we're not going north to south, we're going south to north. I think it's going to be an incremental, build the line in stages until ultimately you get to the Delta. Because frankly not enough gas is found there yet, I don't think. People are talking about it as if there's all this gas up there and we've just done an exhaustive review of that place and . . . it's there but I don't think it's going to be that easy to find like the gas equivalent of Prudhoe Bay under the Delta, I don't think that's going to happen. So the big opportunities in Canada are going to be in frontier gas, tar sands and maybe the deep, deep part of the basin. I say deep, over 3,000 metres to 5,000 metre plus, the really deep part. And none of those are cheap, none of them are short term and so it takes a different kind of player to really maximize the access to the opportunity. And I don't know if we've got the technical staying power in most of the companies here today, to handle that kind of thing.

DF: What's going to create that technical power?

PP: That's a good question.

DF: Lasting high for oil?

PP: I don't even know if that. . . you could wave a magic wand tomorrow and say the price will stay at \$25 U.S. barrel equivalent for the next 10 years, is that going to make a lot of companies go out and hire new graduates, who's going to train these people. I don't know if you've seen the recent demographics but they've come out, North American demographics, the average age of the petroleum professional in North America, I believe it's either 47 or 49, it's one of those. And what happens in 10 years. Now in 10 years you're just really becoming a value added asset as an employee. Yes, some people are more exceptional than others but really, after 10 years you should have seen it. So in 10 years, if we haven't done it like starting right now, like today, which we're not doing, you can see the industry going into eclipse on the human resource side and what will happen Dave, is we'll do what we did in the 60's, which is open the immigration doors and bring in people from other parts of the world, assuming they've got the skills. And that's a big assumption. No, it's funny, if I put on my selfish career hat, I am absolutely bullet proof career wise. As long as I want to work, I'm sure, as long as I don't do anything that's illegal or immoral I'll be fine. But for society it's not good.

#349 DF: But has it always been thus in the petroleum industry?

PP: No, historically, if you look at historical demographics, in fact, the CSPG publishes the hiring of new graduates, they've done it for many, many years. When I started, like the two big sort of bulges in hiring within recent years, I say recent, the last 30 years, are right after the Arab embargo of 1973 and in 1985, '80-'85, I'll use that sort of broad one. I was hired in '79 myself so that makes me 22 years okay. So I'm 45, I'm a little bit below the peak of the curve. It hasn't always been, when I started I was the bottom of the pyramid, there was a broader pyramid and over time it's done this. And I don't know how you reverse that easily. Because you look at the schools, what happened after '86, everybody

went into environmental earth science, that was a very, I'll call it a fad because that's really I think, what it was. The extractive industries were really hurting and probably have essentially been these dodgy kind of pursuits by students, probably ever since '86. Extraction has been very cyclical, mining probably even worse than oil and gas. Environmental of course, when you're a young person has a cache. I mean, that was my training coming up and I can see that. But as a career path it's probably even dodgier than the extraction industry is because they're at least wealth creation and society, for better or for worse, will value wealth creation over regulatory costs. So career development is still probably better in the extraction industries but students perceive it as you're in and then you're out. Companies have done a terrible job of managing their human assets and have treated them badly since '86. '86 was a panic and I can understand that, it was the first time something so dramatic, of that magnitude had happened. So you can kind of understand companies. . .

DF: What precipitated that in '86?

PP: That was the oil price drop, from basically \$28 in February, to \$10 in July or whatever it was. And it was basically when Saudi Arabia said it was no longer going to be the swing producer. They said, no, market share is more important than price and here we are. We're the 500 lb. gorilla and we can make money at \$1.50 so you guys are going to get in line. And '88 was another example, it went down to \$12 in 1988. Those were the two worst ones and then we've had a series of. . '98 was viewed as a bad one as well because it went down into the low teens. But what's happening is, instead of these broad cycles we're now getting. . . And of course, that kills hiring right, because you can't plan. People are not going to want, managers do not want to have too much staff, they'd rather have too few, work them hard and reward them. Might burn them out but they'd rather. . intellectually it's an easier game to play than to have too many and I've got to get rid of these guys and what am I going to do. Also the first people who get punished are the people with the least amount of experience.

#402 DF: So it's good for consultants.

PP: Fabulous for consultants.

DF: But I'd like to take you back to something you've identified, the booms and busts used to 10 or 12 years, now they're 2 or 3 years. Why?

PP: Why, I suppose. . .why is that.

DF: Let's go back to when you started, you got in just before the NEP.

PP: Well, I got in right after the Iranian revolution, which was the big spike then. The price of oil was gradually going up from '77 through '78 but in February, I think it was '78 or '79, the Shah was overthrown and the price just rocketed. That's when gold hit \$800 an ounce, I don't know if you remember all that or not but it really, things really took off. And that plateaued, remember oil went to \$40 U.S. in 1980, '80 or '81. And the NEP came in, the legislation was passed I think it was October of 1980 because I was in South Carolina at the time and I remember reading about it. But I think it came into effect in late '81, I could be a bit fuzzy on my dates but I think that's about right. In '82 everybody was getting out and the price went down and interest rates were 18-20%, that's when Dome

finally met its Waterloo. It took more years to die but that's when it really. . . And all those things coincided. I think right now, frankly, the oil things are OPEC driven. Gas is decoupled from that. And I think the spikes now we're seeing, we're getting more spikes but they're kind of different, like the oil spike will be different than the gas spike. And the gas spike is entirely driven by U.S. demand in Canada. And Canada is really, look at the fortunes being made out of the new companies, incipient companies that grew. . . and I think Peter Falconer actually had that documented years ago in his book but it's all in gas. When you look at the companies that have come out from nothing and grown and the people who are behind them, they're all gas driven. Whether it's J.C. Anderson or John Masters or Bob Lamonde, they've all come out of gas companies. And I think that's still the way forward because tar sands is not a game for small companies and conventional oil in Canada, it's Hibernias, it's out there, that's not for small companies either. So where can you make it, gas.

DF: And gas is consumer driven in the heating market and the air conditioning market. .

PP: And power generation.

DF: Yes, down in the States.

PP: Yes. And Canada, the domestic market here of course, in heating and . .

DF: Now is part of that environmental, natural gas being seen to be cleaner?

PP: From my perspective. I don't know whether that's a reality or a perception because nuclear is even cleaner and the coal people will tell you they've got now these higher technology coal fired systems that are very competitive when gas is \$3 or \$4 U.S. So I'm not sure I even know. I think the perception, well it is cleaner than of course, burning bunker oil for heating. But I don't know if that's the big draw, I think the big draw is just U.S. economic expansion and the need for power, electricity, I think that's been a big, big driver.

#457 DF: And you can be more agile with gas too, can't you? Gas is there and it's been cheap for so long that you can produce it fairly quickly.

PP: Yes, well, the gas game is actually more complicated than the oil game. Because the oil game, all you need, you drill an oil well, all you need is a tank and a truck shows up every so often to take it away. Gas, you need gas contracts, and you need tie-ins, you need processing facilities. It's actually a more complex business I think. It's an easier business to manage once it's up and running because you don't have the abandonment liability issues, unless you're in the sour gas business but you don't have a lot of the infrastructure hassles, you don't have as many wells to deal with. And it's gas, you know, you open a valve, you shut a valve, you don't have to deal with a lot of other stuff. So I think from a business point of view, dealing with the commodity is more complicated, from an operations point of view it's easier. It's also easier to find, historically it's been easier to find. So I guess I haven't answered you question about why the booms and busts, I suppose it's OPEC for oil for sure. They seem to be much more disciplined and when they all run amok they get together and get their act together. But I have to say that ultimately, over time, I think the spikes are going to broaden out and the base case price is going to stay higher because of this lack of exploration. Because a lot of these OPEN countries are

producing at maximum capacity and their maximum capacity in some cases doesn't even meet their OPEC quota. And you always have wild cards out there, you know, Indonesia could go over, turn turtle, or Nigeria. You take some million barrels out of the system overnight like that.

DF: For what, political reasons?

PP: Yes, for political reasons. Venezuela is always viewed as a bit of a funny thing politically. So you take out something like that and you're just adding a little bit more volatility to the. . . And then you also have the infrastructure issues, you know, the refineries, nobody is putting money into refitting refineries because nobody is making any money on refining.

DF: Shipping is the same too, isn't it?

PP: Yes. So every now and then you hear about some refinery blows up or has a problem and that takes out oil, the gasoline market in California has a problem and the price goes up. You know, you end up with those things too.

DF: Now at the same time you say OPEC is being more disciplined, isn't the American consumer and the American government being less disciplined, aren't they using more than they ever have, becoming more and more reliant on imported?

PP: Yes, I think all that's true. The American consumer of course, yes, very much so. I mean, things have been so good for like 10 years down there. But I think part of the reason we're seeing the, well, there's no question we're seeing the prices go down is because of the U.S. economy. The Canadian stuff is very clearly dependent on what happens south of the border. Gas price, absolutely. The California crisis is probably a direct corollary with gas.

DF: Right. And the low Canadian dollar means that when the American demand is high we make even . . .

PP: Oh yes. But the Canadian oil people, the things they don't want to see happen, the two things they shouldn't want to see happen are, the Canadian dollar going up to parity and \$10 gas. Because \$10 gas just drives everybody away. Like, it was stupid last winter and I think that's scary because then people look for alternatives and then nuclear power plants come back and coal. And once you build these things, they're there right, you don't just shut them down. This town would love \$4 gas.

DF: Stable \$4. .

PP: Oh yes, they would love it. More than oil even, stable \$4 gas.

DF: Anything else you've seen over your career? We'll get to CSPG on the other side of the tape but what else have you seen happen? Trends in the industry?

PP: You mentioned about consultants, I think there's actually a trend now, by some companies to really out source even their exploration. And some of the bigger firms are on the record as saying that they're basically evolving into the role of a merchant bank, where they'll still have their own staff and they'll do their own high impact, deep water off west Africa stuff, they're not going to give that to somebody else. But they've got assets in western Canada and in the States, they don't necessarily want to sell them, they're probably generating a nice return but they don't want to tie up a lot of their key people managing that but they need somebody to do it. I see this from our business, so we

get asked to do a lot of that kind of stuff now. And we're probably not big enough to do everything we could do. But over time, I look at mining as a parallel with oil and gas and the big mining companies don't explore, they let the little guys go wheel and deal and then they buy them. That's how I see the oil and gas business evolving.

End of tape.

Side 2

DF: Now before we get into the CSPG, I would like to ask you, you lived through the NEP, how did it affect your career?

PP: I was really just a young staff member at that time. It didn't really, I can't say that it affected me greatly. Husky is one of the beneficiaries of the NEP of course, because . .

DF: So you were a Canadian in a Canadian company.

PP: yes. In fact, what it did was it made them go off to the east coast and now you hear about White Rose and Terra Nova and that's how they got into those things was back then. So from a Canadian point of view, a company like Husky, which at that time, wasn't heavily laden with debt and was doing fairly well, it wasn't a hurtful thing. So in that sense I don't consider that for my career, the NEP really did anything. Except from a psychological point of view I thought it was kind of a bad move and as an Albertan of course. But I'm going to give you my political spin on that, I have to say the NEP and I think part of your question Dave was about the federal government, but I remember, the burning memory I have is Peter Lougheed and Pierre Trudeau both with a champagne glass. Both of them. So I have no warmth for the Alberta government of that time too, they did the deal.

DF: Well, everybody saw the \$100 barrel of oil.

PP: And the Alberta government was every bit as bad at gutting the industry as the federal government was.

DF: Not everybody remembers that.

PP: No, no, that's not the politically convenient thought process but that is what happened.

DF: How did you come to be associated with the CSPG?

PP: As a graduate student, 1978, my Masters supervisor was Tom Oliver who was the gentleman who set up the University of Calgary's geology department and was a past Vice-President of the Society and he encouraged me to join.

DF: Is he still around?

PP: No, he passed away a few years ago. And I joined then, I thought this is a good thing to do, I should plug into the local geological fraternity. When I started work I thought, this is how you get to meet everybody. So I thought this is great because I wanted to go on the field trips. And they had all these one day field trips so I thought, oh, I want to be involved with this. And I find the CSPG has been, just from a selfish point of view, the greatest career thing and all our staff, I always recommend they belong, they can participate, they can do whatever they want. It's so important. In our business where knowing people is rather important, that's where you get to know everybody, from

Presidents to the most junior staff member. Great, great. Very few organizations like that. So that's how I got involved and I was asked to run in '82 as a Director and I did. And I stayed involved with various committees, the conventions and was always involved. It was good, it's a great way to. . . I'm not necessarily the most social person in the world and I don't do it for the social contacts as much as anything but it was just good interaction with the fraternity, as it were.

#030 DF: So it's one thing to be on the Board but another thing to be on the executive and be headed for the Presidency and you're a busy guy, did you weigh that?

PP: Yes, you always weigh that. I was asked to run again, once again Ed Klovan approached me and he said, we'd like you to run, what position would you like. I said, at that time, this was 1992 I guess and I had a lot going on here and. . . A lot of people don't realize is this company has more past Presidents of the CSPG than any company. A lot of people don't know that, this itty bitty firm actually has probably. . . and certainly on a per capita basis, has contributed more to the Society than any organization in this country.

DF: Because?

PP: I'm here because of the CSPG. Neil Hutton hired me and Neil Hutton knows me through my involvement with the CSPG. And Easton Wren, who is one of the other founders of this firm is a past President of the CSEG. I was brought in and when I was asked to run, Ed Klovan actually was a consultant here and of course, he's a past President. Gerry Reinson used to work here and he's a past President of the CSPG, I'm a past President of the CSPG, Brad Hays is the current President of the CSPG. So we've had a lot of involvement. So clearly there were no borders to me taking on the role if I wanted it and I mean, you've got to give something back. You have to do that. It sounds maybe a little idealistic but you do, you can't just take out of the system and the oil business, for all its ups and downs, is a very remunerative business to a lot of people and you just can't take, take, take and not put anything back in. From a selfish point of view, yes, you generate. . . people think, they think we get a lot of business out of it and we don't. In fact, it's probably the other way around, we probably know more people through our business and are more valuable to the Society for that reason than the other way around. When you're a young person, like in your 20's, like when I first was involved, it's different, you don't know anybody. But by the time you arrive in a firm like this, you're probably not very desirable as an employee unless you've got a good contact base. My CSPG involvement as a young person made me more hireable here. But I still asked my other partners about it, I wasn't going to just take it because I know what kind of a job it is and it's a 3 year commitment. I realize the last year isn't as heavy as the first two but you're committee, you can't not be there. And I travel a lot so I also have to work that into the mix. So I ran it up the pole and everybody said, oh yes, you should do that. And so I did that. And when Ed said what position do you want, I'd already been a Director, if I hadn't been involved in a business like that I would have asked to be the Business Manager because I would have thought, oh it would probably be nice to know something about how the ins and outs of dollars and cents work because you don't really get that in a big company. But I already had that in spades here, so I said, well, I'll go for the Vice-Presidency because I

have some ideas about what I'd like to bring forward. And that's the only reason. If I didn't have any ideas I would have said, no thank you, get somebody that's got some ideas.

#061 DF: So what were your ideas, what were your challenges?

PP: The big issues there I think, were continuing education issues. I could see then and I think it's even more revealing now that we had this demographic issues which cuts two ways, one you had young people who weren't being adequately trained because of the pressures on the more experienced staff. And you also had a lot of people who were laid off in '86 who'd been out of the business for awhile and you had the demand for experience, you want to bring them back but they may be a little rusty. So the issues of continuing education, the CSPG always has had a continuing education program but we talked about maybe doing something a bit more exhaustive and that would be, like the Advantage program that started. And now that's evolved. . .

DF: Explain what that is.

PP: The Advantage program was just the setting up of these week long courses on various topics of geology in western Canada that drew on, not one instructor but several. We set up a few, Bill Ayrton was brought in to spearhead that because Bill had spearheaded the SIFT program and he was quite interested in that topic too. So it was up and going and I really don't know how it's doing lately but I am involved with the University of Calgary, which is almost the son of Advantage program, which is this Geo-Science Professional Development program that they're setting up now. And I still think that's a really important issue, there's a real need for something that isn't academic and yet isn't just operational. It's that bridge between how to drill a well and the theoretical basis of geology and we're still missing a lot of that. That I think, needs ultimately, to involve the GSC, which will make them more relevant to the local community, the University of Calgary, which the geology department needs to be more integrated with downtown and the downtown community itself. And really, the seeds of all that came out of the Advantage program. And that was really the big thing as far as I could tell.

DF: Just reviewing your annual report for the year you were President, there were a number of things you wanted to do, do you remember what you wanted to do and what you did? Just glance through that and see if there's anything else you'd like to talk about?

PP: Well certainly, as you can see, continuing education is front and centre as number 1. The other ones were sort of, of a lower priority but they were also important. The lack of young people in the academic world is a very big issue. If you look at U. of C. the professors are all, the average demographics of professors are actually older than the average demographics of practising professionals. And there was really not a great attraction to getting them into the system because universities were cutting back at the same time. And that was the beginning of Ralph Klein's tenure because he had to repair all the damage from I guess it was, Don Getty before him. So the university got cut back and so when I was President of the. . . I thought, this is a great chance to do a partnership here and I went to Ian Hutcheon and said, look here's an idea, if we can raise some money can you match it because we know the National Science, Engineering Research Council

had matching money for new professorships. What we did is we acted, we put some money up and we said, we'll help you raise money from industry and we got industry, 5 or 6 companies to each put in \$2,500-\$5,000 for 3 years, each for 3 years. So that we could get the salary up and then the National Science Engineering Council would give the matching money for the research program. It's a beautiful program and our mandate was, we want to sit at the table to assess the candidates and we want the university to make this tenure track, we don't want this just to be a temporary position, the minute the money's gone. . . you have to commit as an institution. That was a great. . . I got a lot of flak from outside of Calgary for that because it was viewed as the Calgary Society for Petroleum Geologists. But the fact is, if you can't get it to work here, why would you ever go to St. John's or Toronto or Saskatchewan or UBC. It doesn't make any sense. So we had to do the prototype here. It worked. Cindy Riediger got the position, who actually, she used to work here, on a temporary basis. When we did those big field parties, she was one of our geologists. She has a Masters and a PhD and wanted to be in an academic setting so she applied and there were some other candidates who were quite good and for whatever reason the department picked Cindy and she's been there ever since. But I think that is just a great model for any department now who wants to go do something like that. Now the trick is getting guys downtown to fund it. Then once there, we asked our hiring summer students, we had a little summer student fair and that's actually continued every since, and that's good. In fact, we've interviewed some, most of them get jobs, the ones who don't have jobs outside often get hired while they're here. Because that's actually a very good group to deal with. In terms of some of the other ones, consultants directory, visiting international petroleum geologists, I think the consultants directory was created. The other one, the visiting international one has not matured. And you know, you try a few things and some happen and some don't so that one didn't get off the ground.

#117 DF: Getting the Society on positive financial fundamentals, was that. . . ?

PP: That's wasn't me. No, I inherited that. When I was there it just stayed there and it stayed there even since. The people who really made the Society work financially were the people like Clay Riddell, who took over in '86 or '87 when the Society was in terrible financial shape, through nobody's fault, it just got caught in the cyclone of the industry. To him go the credit for turning it around, not me.

DF: He told me the story yes. He took his secretary and basically made her almost, well, she turned the thing around, turned the books around and made them make sense.

PP: Yes. No, I fully appreciate what he did. I just walked in the door and inherited something that was already working.

DF: What do you see as the future of this organization?

PP: I think it's got to merge with the CSEG and the CWLS. And I said that back then, it was one of my discussion topics when I was President and I believe it even more now. I think this fragmentation of societies, it goes back to demographics, we're going to lose members, they're going to be non-productive, they're going to retire, they're going to go out. Plus the merger of disciplines is absolutely a wave that's crossing the planet and there's no point in fighting it.

DF: And the other Society you mentioned, CWLS?

PP: Yes, the Logging guys.

DF: Canadian Well Logging Society.

PP: I can see all these things all fitting together perfectly. And I realize there will always be battles and disagreements but to me, it is absolutely inevitable. You cannot read an exploration science article anymore without a seismic section in it and any geophysicist who is not using geology and interpretation isn't worth reading. Yes, there's always going to be specializations right, guys who do wavelet processing in geophysics are going to be in their own world, far removed from the guy who studies the evolution of nano-fossils. But the fact is you always have the ability to have the divisions and the separate little interest groups that have their own little technical areas that they want to pursue, the Society has always had that. And I can see it's just a matter of the wills of the respective executives and it will be forced on them. Because at the end of the day, if you've only got 50 members, you might as well have 100 members and join up with the 50 down the road. Especially because you have common interests, we have common challenges. The integration of the disciplines is very far advanced right now and the practice. So to me, it makes sense. We have joint conferences, every 5 years and there was a move afoot years ago to make them more frequent. My view is, and I can put my service company hat on, I'm not going to advertise in more than one, I want one stop shopping. And I could see the service companies saying, why don't you guys just do one every year, we'll have a big one and you can bring all the people in from overseas, it makes Canada much more interesting than you. It might not happen of course, but to me it's a logical progression of the evolution of the science. And I could even argue that you could go with CIM and some of the engineering groups too, ultimately. Because really, everything is becoming seamless.

#154 DF: Can you say the same thing for APEGGA?

PP: No. Completely separate. APEGGA is a regulatory, licensing agency. I could see, in my mind's eye, being on the council for APEGGA there, I'm in my second year for that, and I'm not an APEGGA fan, I view it as necessary, it is important to have your designation, you licensing that says that you are what you are, I don't have any problem with that. We've all had our issues with APEGGA as geo-scientists. I could ultimately see not breaking off with APEGGA, which is always the discussion point, I'm sure you've got an earful of this Dave, in your discussions with people, I don't think that's constructive in the least. I think Gordon Williams is right about this. But I can see actually, going one step further than where we are now, is within the act, to have a wholly administered geo-science section with geo-scientists as the staff members, geo-scientists doing the administration of the licensing of geo-scientists. That doesn't exist now. And I can see that ultimately evolving, if there's a will for it in the geo-science community but it's got to come out of the geo-science community. And the CSPG has historically avoided being a lobby organization, which is right in my view. But I can see that it, and the CSEG have to take charge and find out what its members wishes are because if the membership, in a majority sense, not a few vocal people on either side, say we would like to explore this

and pursue this, they I think it can at least be explored and pursued. And anything that you do that does not require changing the act can be done. Once you change the act you've got a problem because that's, you've got to get the legislature to agree, you've got to get on the order committee, it's got to get a priority or something, status of some kind. So changing the legislation is not the way to go, but within the act itself, I don't think there's anything magical about going to the superstructure of APEGGA and saying, if APEGGA Council agrees with it, you've got to convince all the other people but if they agree with it say, we need to have a geological or geo-science. . . See, I can see getting rid of P-Geol and P-Geoph and just calling it P-Geo Scientists. Because once again that's the blurring of the disciplines. And that would be better, I think everyone would be better served. Geologists always whine about, oh the engineers just tell us. . and you know, I have to say, the engineers are very sensitive to the needs of the geo-science community. I'm not so sure the geo-science community has done anything other than whine and not come up with a constructive way forward. The people I deal with are first class, I'm impressed with a lot of these people. So it's not the will of the engineer that's holding us back. I think that's a red herring.

- #187 DF: Yes. APEGGA has a lot more engineers for example than it does geo-scientists but I think you've made a good point, if you don't like the way it is now make a constructive suggestion as to how to improve it.
- PP: And I think, rather than say let's have the CSPG become the regulator, I wouldn't want that, it's a science organization, that's what I want it to be. I think though, they of all the groups, can say, this is what our membership want and our membership are most of the APEGGA geo-scientists. So I think that would be the way to start the process rolling, to change it.
- DF: 75 years after the creation of the CSPG here in Calgary, or ASPG as it was called then, what kind of a publication would you envision to commemorate that first 75 years, any ideas on that?
- PP: A photographic, historical companion to pictures. Geology is a very visual field and I think something that is very heavily weighted to images is a good thing to do. That isn't to denigrate words but I do think so. And in my mind, I realize coffee table books collect dust but once again, are you trying to sell them to the average guy in the street or really to the people whose careers have evolved and that's really the kind, I can see that as the kind of thing that, a well done photographic companion of the history, going back to as far back as you want to go, to today. And the thing about that, you can do it digital now so you can easily update it 50 years from now, assuming there's still one around, or at the 100 year, which is obviously the next logical one.
- DF: Anything else you'd like to say about the CSPG?
- PP: No. I mean I would say that I owe a lot of my career evolution to this point, to the CSPG and what it's done. And we always hire young people, we always have 1 or 2 new graduates and I always tell them, don't just belong, go get involved because it's good for you. Even if you quit, you want to go work somewhere, how are you going to find out who's out there, that's how you do it. Great organization, it's historically been quite

unique. It gets a bit of flack from outside of the city, understandable because people view it as a little parochial but I've gotta say, like anything it's not perfect, but it's done its job magnificently. I really think it's a great model of a volunteer organization and a science organization.

DF: The past President's dinners, ever learn anything at those?

PP: I enjoy those immensely but I can't say that I've got any interesting anecdotal stories. I've missed the last 2 because I've had to travel but I love those things, I always go to them when I'm around.

DF: When you were VP and President did they help you in any way?

PP: I think it's good to get the views of the people. Help, I don't know if it really changed anything that we did but you always get feedback, even if it's just cautionary ????. What I like about it is the historical context. You think you have these ideas, you know, you have this idea and you think, it's original, well then you hear, yes, we tried that and it didn't work because of the blah, blah or we tried and it didn't work but it's still a good idea, why don't you do it and maybe do it this way. And I liked dealing with the past Presidents and I think the Society doesn't use them enough. I'm not saying that they want to. . . part of the thing about being a past President is, you've got to get out of the way. I'm not involved with the Society anymore, after I was past President it's like, no, I've been there, I've had my stay in the seat and you've got to move over. And that's the biggest problems facing the Society now, is getting young people in. You see it in the conventions, you see it in the publications, the same people, they're all getting older. And that's the big challenge for the Society is getting younger people in. And that's why we need to talk history though, it's funny, you need to talk to these older people so younger people can see where it's come from and where it might go. I have a great idea to go back to a field conference here, you started this thing talking about the field. And the original conferences were field conferences. And I think there's a huge, huge need, it would be fabulously successful. But you know what, you can't have 3,000 people. And that always kills it because oh, we've got to have 3,000 people, no you don't, if you could do it for a couple of hundred people I think the benefit of that would be enormous. I think it's back to the beginning because that's what's needed.

#241 DF: That would be neat wouldn't it. Some overview questions before we end here, which of your contributions in your career do you consider most significant? Time to brag.

PP: No, you won't draw me out on that much I don't think Dave.

DF: Well, not brag but I mean, what's really excited you?

PP: Oh, the physical earth. That still inspires me. It's watching the landscape at sunset or sunrise, it's going out in the field. And I can be happy as a clam stomping around Drumheller as I can be in the most exotic places in the world and that has never left me. And as much as you get drawn into corporate stuff and dealing with lawyers, like in hearings and articles and meetings, you never lose the fact that you're here because of what's outside the window not because of what's inside the office.

DF: Now your love of rivers, is that just buried rivers or do you like. . . ?

PP: Oh no, all of them

DF: So you like rivers that have actually got water in them too.

PP: Oh yes. And coasts. Well Derald Smith, that's his forte, he's one of the world's foremost experts on how rivers work, modern rivers and we run a course on modern rivers every year. And we go out and putz around, every year he and I go off for one week to do our thing, whatever our thing might be and John Hopkins and I, every year we go off and do our thing for a week, whatever it is. Not a plan, we just pick an area, we just go explore and just see what's there and to me, that's what it's all about. The rest is a ticket to the party. Finding oil and gas or being a service company is a ticket to the party and the party is out there.

DF: Good for you. Any regrets?

PP: None.

DF: What things do you still want to do?

PP: I just told you. That's really it, I just love getting out there. I don't want to be a mountain man, I'm not a woods, outdoors man who can go, give me a knife and blanket and I'll go live off the land, I'm not that kind of person. Though I do know people who are like that. But no, I just love getting out there and just seeing it, just taking it all in, I just love that. Got me out of southern Ontario, it's going to keep me out of southern Ontario.

DF: Yours is probably the only organization I can think of that goes camping together out west of Turner Valley area, it's kind of neat.

PP: Yes, we do a lot of that. And we always bring our staff.

DF: Well, on behalf of the CSPG and the Petroleum Industry Oral History Project, I'd like to take this opportunity to thank you so much for spending this time with us and we'll end the formal part of the interview at this time.

PP: Great, well, thanks Dave.