



NEIL McCRANK

Date and place of birth (if available): May 9, 1943, Bourlamaque, Quebec

Date and place of interview: May 9th, 2013, Offices of Borden, Ladner, Calgary, AB

Name of interviewer: Peter McKenzie-Brown

Name of videographer: Ty Reynolds

Full names (spelled out) of all others present: Neil McCrank

Consent form signed: Yes

Transcript reviewed by subject:

Interview Duration: 1 hour, 21 minutes

Initials of Interviewer: PMB

Last name of subject: McCrank

PMB: And I am talking to Neil McCrank who is with Borden Ladner Gervais, LLB. I'm going to try my other little recorder now.

REYNOLDS: And Neil, if I can get you not to lean back too far 'cause you go out of focus then.

McCRANK: Okay. Okay.

PMB: Okay, Neil, I would like to thank you for your participation in this project, to begin with. Today's date is the 9th of May 2013, and we're in the Borden Ladner Gervais offices in downtown Calgary and it is about 9 o'clock in the morning.

So I'd like to begin by just telling me about yourself; your career, how did it develop and so on. So just in a general way, who are you? What have you done? Where you born? Where and when were you born, go to school, and then your early career?

McCRANK: Well, I'll start at the beginning. I was born 70 years ago today --

PMB: Happy birthday.

McCRANK: -- in a place called Bourlamaque, Quebec which is in Northern Quebec; it's a mining town. It no longer exists, it's part of Val d'Or and you've all heard of Val d'Or, Quebec, the Valley of Gold. So I was born into a miner's family. My father was an underground miner and my mother came from mining families, grew up in Quebec and in Northern Ontario in small mining towns in Red Lake, if you know where that is, gold mining. Went to university in Kingston, Ontario at Queens University where I took my first degree in electrical engineering, and then I completed my law degree in 1969, moved to Toronto where I practiced law with a large law firm for about five



years, then joined the Ontario Attorney General's department as a Crown prosecutor, and worked with them in and around Toronto for six or seven years, and then moved west; saw the light and moved west in 1979 to become a prosecutor with the Alberta Attorney General's department. Stayed with that department until 1998, in various roles, the last nine of which I was the Deputy Attorney General for Alberta. And then I took this post as the Chairman of the Alberta Energy and Utilities Board which is the regulator in Alberta, energy regulator.

PMB: What year was that?

McCRANK: That was 1998. And I stayed in that position until 2007 at which time I thought I was actually going to retire, and that was the plan. Retirement didn't work out quite the way my wife had hoped, and I ended up getting engaged in a lot of activities with a number of corporate boards that I'm on. I joined BLG, Borden Ladner Gervais, as counsel to this firm. I continue to give advice to most of the governments in Canada on various regulatory issues, but more particularly Alberta and Ontario and Northwest Territories and Nunavut.

And I live in Calgary now. I'm happily married for a long time, and I --

PMB: What is your wife's maiden name?

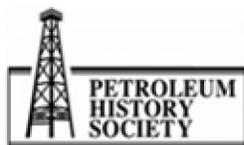
McCRANK: Her maiden name was Susan Vincent. And her father was a professor at Queens University actually, in English. And she and I have been hooked up for almost half a century, and we have four children, all of whom are in Alberta, most of whom are engineers or geophysicists in the energy business, and a daughter who is a teacher, whose husband is engaged in the oil and gas business. So we're connected.

PMB: And just briefly the names of the four kids.

McCRANK: My oldest son is Jason McCrank; he is a geophysicist with a major international oil company. My daughter is Kelly; and she was the teacher and her husband is with a major international oil company. My next son is Darren, who is with a utility electricity provider in the province, the largest one, and my other son is Matthew, and he's a civil engineer -- Darren is an electrical engineer and Matthew is a civil engineer with one of the major water providers in the province.

PMB: Great. Did you ever lead any lawsuits on behalf of government against resource companies, any significant lawsuits against resource companies?

McCRANK: You know, during the years that I was in the Attorney General's Department, particularly the last nine or ten when I was the Deputy Minister of Justice, we would on any given day have probably a thousand lawsuits either for or against people. So probably in the course of that there may have been lawsuits against resource companies. I can't remember specifically any one, but I will say that I was engaged in prosecutions relating to oil and gas, the oil and gas sector, but not



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against oil and gas companies, but against individuals who had done something against their company.

For instance, in one instance an individual stole some confidential title information from the company he was working for, and he was trying to pedal it to a competitor, and we found out about this and launched an investigation, and prosecuted him successfully, and he spent some time at Her Majesty's dormitories.

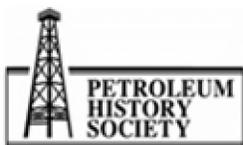
And then another instance where an oil and gas company was being sold, and the owner of it sought from the purchaser advice as to how the purchaser wanted their royalties, or how they wanted the production reported. And the bottom line is that the production, the way it was being reported was a fraud, it was a fraud on the provincial government on the royalty system. It was averaging production instead of reporting true production from each individual well, and therefore avoiding about a half a million dollars' worth of royalties. And I prosecuted him, and he was convicted and spent some time in Her Majesty's dormitories as well.

So I had lots of involvement with oil and gas companies in the course of my years as a prosecutor because there were significant prosecutions that came out of that business.

PMB: That's very interesting, and I certainly haven't heard anything like that from anyone else. Your involvement with the oil sands has been really quite interesting. Can you talk to me about that a little bit on what that's involved?

McCRANK: When I took over as Chairman of the Alberta Energy and Utilities Board which was the successor and the predecessor to the ERCB, that was sandwiched in between an organization called the Energy Resources Conservation Board which is really what it was, but it just had the utility side. When I started in 1998 the oil sands were an item of interest but, you know, oil was \$9.75 a barrel, and there were real question marks as to whether or not the oil sands could ever actually be developed because of the price of oil at that time. Now everybody knew it would increase at some point but they weren't sure when. So we had two mines, we had Suncor and Syncrude. We had some others in the works but they were not making great progress through the system because of the pricing of oil.

In situ development was hardly considered relevant in 1998. That's hard to believe, only 15 years ago, but that was the fact. I mean there'd been a lot of work done on in situ development, a lot of work done on the extraction from a mining point of view, but it was still in the early stages. So during that time that I was the Chairman of the EUB it really exploded. We approved Shell Albion, we approved New Horizon for CNRL, we approved True North which is still in the potential works with Suncor, Petro-Canada, and major upgrades and new projects, expansions at Suncor and Syncrude, and the in situ started to really be developed to the point where we all started to become, everybody, I'm not just saying people at the Board, but society generally started to believe that there was a real potential for the oil sands, and it was going to at some point overtake conventional in terms of its production, and be a source to consider in the world. And I think it was just yesterday I



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noticed the ERCB put out their production reports for 2012 and the in situ has actually exceeded the mining, both of which have exceeded the conventional production in Alberta for some time now.

So my involvement was watching it grow from more or less a great dream to kind of reality in that ten-year time frame, and I was only an observer to most of it, but I was with the regulatory body that oversaw most of that development.

PMB: Now one Premier Ralph Klein's efficiencies was to combine the EUB and the Energy Resources Conservation Board, which was really founded in 1930, so it was a 60-odd year old institution by that time, and I believe the idea was just to save money and to supposedly increase efficiencies. The Klein government combined the two, and then later on they were separated back again. Why is that?

McCRANK: Well, they were combined during the Klein era, which was an era of trying to find efficiencies in government generally, and we're all supportive of that I think. We're the beneficiaries of a lot of what his government did in terms of bringing about a more rational government, and I think we should be grateful for that. But it wasn't just efficiencies. There was a specific reason why there was a debate between the ERCB and what was then the PUB, the Public Utilities Board.

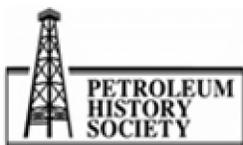
The Public Utilities Board had the authority to approve utilities in terms of their rate base, and there was one in particular near Edmonton that was approved by the -- and I should point out, the other side of it was the ERCB approved the siting of it. So one did the siting, where it was going to be actually physically located, and the other decided whether or not it would be part of the rate base in Alberta, and paid for, therefore, by the customers.

So one particular major generation site, which has now been built and produces electricity for all of Alberta, was sited by the ERCB in a certain location, and then the application was put in front of the PUB to put it into rate base and the PUB denied it. And so the government felt, well how do two arms of the same government operate in opposite directions, because there was a major cost associated with both of those applications. So that was part of the reason why those were joined up as well into one board, so that they would coordinate better the kind of effort they needed for utility regulation.

Now, it's since been separated again, and I know I was asked at the time when I was just leaving the EUB what I thought of the separation of them back into two boards, and my own view is it could work either way. It could work as two separate boards, or it could work together as it did when I was the chair for ten years, it just depends on the particular, I guess, desire of a government whether they want to emphasize one or the other, or both together, but it could work either way, and works fine separate.

PMB: Okay. But now I heard you say that you were appointed to the EUB in 1998?

McCRANK: Correct.



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PMB: And you were there until 2007?

McCRANK: Correct.

PMB: So you were there during that fairly critical period?

McCRANK: From an oil sands development point of view?

PMB: Yeah.

McCRANK: Yes, that's when really things started to explode, and it was fun to be part of it.

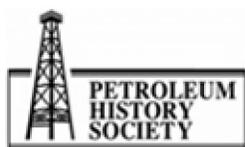
PMB: A couple of questions: In terms of the EUB I'm guessing, and I'd like your comments on this, that what would happen is the EUB would train people they would become involved in reviewing regulatory matters, and then they would immediately, after they'd had a couple of years' experience, join the oil industry. So there would have been personnel or staff-related problems at the Board, but would this also have benefitted the companies in terms of their being very canny of that regulation, having very highly-trained people? What were the implications of that?

McCRANK: You know, that was one of the four main issues that I faced when I first joined the EUB was the loss of good staff. And we developed a process, and a compensation scheme, and a benefit scheme, and an environment that we thought would keep most but not all of the people.

Now, keep in mind that I'd worked for 20-some years in government before that. That's a constant problem in any government department; you train good people, they move on to the private sector. So I had developed a philosophy of my own which was if we can keep a third of the people for their career, a third of the people for ten years, and the other third will leave at any time between one and ten years, we're doing all right because there -- you've pointed out there is huge benefit in having people that understand the purpose of the regulatory environment out in the private sector. They will guide companies, and the companies then will do things in accord -- not that they don't want to to begin with, but they may not know what the regulatory environment and requirements are, they'll have that in-house with people that have been trained by the EUB.

So I never had a problem with some of the people at the EUB moving on to different roles and different companies. In fact, today I'm attending a little going-away party at 11 o'clock for an ERCB lady who's moving on to Cenovus. I don't think there's a problem with that. They have done a good job for the province. They will share that with the private sector. It becomes a problem if everybody is leaving, but if there's a general turnover in sort of the numbers that I talked about, in the way I talked about it, I think that there's a benefit to all.

PMB: You described staffing as being one of four main issues that you faced when you joined the Board. Could you talk a little bit about the other three?



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McCRANK: Well, one of them was at the time I don't think there was a great relationship or connection between the government and the Board, and I don't mean a connection in the sense that the independence of the Board is at all challenged. It shouldn't be and it hasn't been in Alberta, and I don't think ever will be; I think the Board remains independent. But they really weren't talking to each other very much, and the government is the policy developer, so there has to be a connection so that the government understands what are some of the challenges the Board has so that policy can be developed to accommodate that, and the Board has to understand generally the environment from a budget point of view and so on, that the government enters into. So that was one. There was a connection issue between them.

There was an IT issue. There always will be IT issues, I guess. You can never spend enough money on information technology. And we were struggling at the Board, and probably that has never changed much, and always will be the same, that you can use more effort with respect to getting up to date, better technology so that information can be shared with all of the stakeholders.

And the fourth one was really related to how we calculate our reserves at the Board, and the purpose of that is that -- and I'll come to it later if you want to ask me how the oil sands increased substantially in the reserves. There were questions marks, and they were debating within government and within the Board as to the proper way to book reserves, and that was the fourth major stumbling block that we were addressing.

PMB: Okay, that last question is a really interesting one, and I would like to ask you about that. The independence of the Board, in your view there's never or rarely been political interference of the Board?

McCRANK: In my term there was never political interference, and from what I can understand from some of the previous chairs like Dr. Govier and Gerry DeSorcy whom I still see regularly and we're on some committees together, there was never political interference during their terms. I don't think there has been since. I've not been in the post, and I've not asked that question specifically. When the Board was set up it was set up on the principal that you set up an expert board with expert engineers, geologists, geophysicists, to do their job, and then you let them do their job. You give them guidance in terms of legislation, in terms of regulations - that's policy, and that's the government's obligation, but then you let them make their decisions.

And I think this province has been extremely well served by that concept. I know, for instance, Premier Lougheed used to speak of that regularly as one of the foundations of the energy sector in Alberta, with pride, because he honoured that as have all the other politicians.

As I say, at no time did I ever feel that my independence or the independence of the EUB was at all challenged or compromised or even questioned.

PMB: Does the EUB have the authority to fine companies or is that -- and I'm trying to remember what happened. I did an interview with someone in the industry a year ago, and his company had leaked a little bit of oil into the river. There was a fine that came, and he was told this is a daily fine.



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You know, if this is still going on tomorrow then it doubles or something like that, and so it was very severe and it was very swift. But did it come from the Board or did it come from Alberta Environment or what?

McCRANK: You know, I'm not sure of that specific one. I suspect the fine itself, the monetary fine, would have come from Alberta Environment. The hammer that the ERCB holds, or the EUB held, was that they would shut down the operation, and when shutdown orders were delivered from the ERCB they were always complied with by companies. I mean companies in Alberta have been very responsible citizens in that you tell us what the rules are, we comply. We've made a mistake; you've shut us in; we're shut in until you release us. That's the biggest penalty you can have if you shut in a pipeline or if you shut down an operation. So the ERCB generally relied on that as their main hammer to get compliance.

PMB: I'd like to talk to you about Frank Mink who was kind of a legendary leader in the ERCB. Of course he died a few years ago, but he was one of your predecessors. Was he your immediate predecessor?

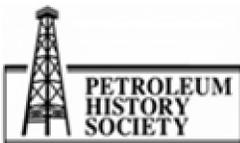
McCRANK: No he wasn't, but he was there when I joined. My immediate predecessor was a lady who was very capable, but prior to that there were co-chairs and they were Frank Mink and Phil Prince, both of whom were there when I joined, and I was very thankful because they, of course, had a huge amount of history with the organization, a huge amount of credibility of all stakeholders.

But you asked me specifically about a Frank, and he was just a genuine treasure for Alberta. He was an economist, he wasn't an engineer, and the ERCB is an engineering organization more than anything, but it has an economic section. As you know, the Board was always to look at projects from an economic, environmental, and societal point of view, balance those interests in the public interest. And so Frank, of course, had huge value from the point of view of his economic background.

His key contribution, and you can look at many contributions that Frank made over the years, and he was such a solid, stable guy that everybody respected; industry, the public, the government, everybody, and of course within the organization. But I think his key contribution was he had the vision I think back in the late '90s to see that the production of gas over the bitumen, where there was connection between gas and the bitumen, might sterilize the bitumen. And there were two or three applications brought during a timeframe prior to my starting at the Board in the late '90s, and also an inquiry held with Frank Mink as the Chair of it, to establish some parameters around gas production relating to the bitumen deposit. And I think that was his main visionary.

PMB: Before we leave that could you explain that? So the notion is that there is a gas field over a bitumen reservoir, and if you produce that gas field then the pressure of the gas is reduced with the result that it's harder to produce the bitumen. Is that basically it?

McCRANK: Yeah, it's a conservation measure. And the Energy Resources Conservation Board was set up as a conservation board back in the '30s relating to flaring in the Turner Valley area, so it was



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a conservation board. So the point of the Board is to ensure that the resources of Alberta, because most of them are Crown resources, not all, but most of the oil and gas, and most of the coal and everything else, it's all owned by the public, so the Board has a desire to try to ensure that those resources are responsibly developed, and sometimes that requires conservation measures.

Specifically with respect to gas over bitumen it's this: It only applies to the in situ development, doesn't apply to mining. It applies to those in situ resources, meaning the bitumen resources that are in the ground with a gas reservoir above the bitumen where there is contact, meaning it's not an impervious layer between the bitumen and the gas but there is contact between the two, and what happens is if you remove the gas and the pressure, then the steam that is injected into the bitumen escapes into gas chamber and is therefore ineffective in providing the movement of the bitumen to allow it to flow where you can produce it. So it isn't as much an issue of the pressure of the gas as it is of the loss of pressure of the gas, which allows for an escape of the steam, and the steam pressure, which really provides the vehicle, the engine for bitumen production.

PMB: Thank you for explaining that. I really, really did not understand that, and this question has come up a few times.

McCRANK: Well it's very important to know that if there were an impervious layer between the gas and the bitumen, and we'll probably talk about the gas/bitumen battle that occurred during my term there, but if there were an impervious layer of clay between those two, the bitumen and the gas, there wouldn't be no concern because the steam then would go into the chamber with the bitumen and stay there, but it's only if it releases into the gas chamber that it causes a problem. And that was the difficulty when we dealt with those battles is which areas had impervious layers and which ones didn't?

PMB: Now, there have been a few cases where steam injection into oil reservoirs lead to an explosion of steam. You know, the most famous one was, the T-Pad at Esso, and that would have been during your tenure, or maybe just before your tenure.

McCRANK: I think that was just before, but there was one during my tenure too.

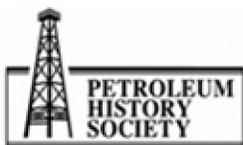
PMB: And then there was the one at Joslyn, was it?

McCRANK: Yeah, the Total.

PMB: And then somebody told me a week or two ago is that there was one at the airport at Fort McMurray; it was visible from the airport. There was an explosion in the '70s or something like that.

McCRANK: Oh, that's news to me. I hadn't heard of that one.

PMB: And so how does the Board respond to that kind of incident?



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McCRANK: Well, the Board responds by the usual practice of shutting the project in until there is a determination as to why this happened, and how you can avoid it happening in the future, because obviously that's a non-controlled explosion, a rupture into the air. And it can happen in both the cyclic steam simulation which is what really happens around Cold Lake with Imperial and others, and it can happen on SAGD, and it happened up north of Fort McMurray on the Joslyn project.

And when you're injecting pressure steam into the ground you are anticipating certain geology and certain formations; that's not always totally accurate. It can't always be totally accurate because obviously you're looking at acres of land, and how this unfolds, you hope you understand it well enough. But pretty clearly in the one near Imperial, near Cold Lake, and the one at Joslyn there was a kind of a shoot, an area where there was no protection between different layers, and the steam, under significant pressure, just blew out through the top.

And I was at the one at Joslyn. I spent some time there just looking at the size of it. It was quite a crater that was created. And the Board took some significant time then in working with the company. Companies aren't ignorant of the worry that that would create, and in fact from their own point of view they lost a bit in this. Lost a lot. They worked with the Board in trying to figure out where we went wrong, what mistake we made. And in the course of that review, though, everything shut in until there's a resolution as to this not happening again, one of the key things that they do today is that they try to determine what the pressure is throughout the area, and try not to exceed that pressure with the steam injection, but sometimes, as I say, it can be exceeded where there's a shut. But it's very much a part of what I do now with working with companies is to look at what the geology is, and what the layering is, and make sure that we're never injecting, or the companies that we act for are ever injecting steam at the higher pressure than the base pressure in the field.

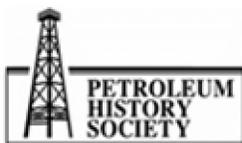
PMB: Actually you've given me a great segue into what you're doing now. With the law firm of Borden Ladner Gervais what exactly do you do with oil sands clients?

McCRANK: Well, I hope what I do is give them good legal advice that is in --

PMB: Are you the primary guy in this firm?

McCRANK: Well, there's quite a team of people that work on any one of these files, but we have some major oil and gas companies that we act for, and some major oil sands producers, and what we do is we try to give them advice as to what's feasible and not feasible within the current regulatory environment. And then with respect to applications we try to work with them in ensuring that the application meets what we believe the standards are for the regulatory authority in Alberta, and ensuring that they end up as responsible operators in this province.

And it goes back to the comment we talked about earlier, and that is that people who've been with the Board for some time, and go out and work on the other side, do they go out with certain responsible approaches to things? And actually I think everybody has a responsible approach to the applications, but those that have been at the Board understand more of the philosophy



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behind some of the regulations which may appear to be just hoop jumping for some people, but actually have a foundation in good engineering and good geology. So that's what I do.

PMB: Now I had an interview with Hans Maciej. Do you know Hans?

McCRANK: I don't.

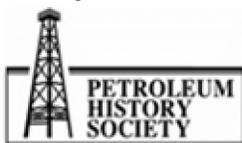
PMB: He used to be the Vice-President at the Canadian Petroleum Association, the Technical Vice-President. And they have a reserves committee at the CPA, and its responsibility was to look after what are the -- they have reserve statistics going back to the '50s when they began this process. But he told me a really funny story about how first the GCOS project came on in '67, and then Syncrude came on in '78, and so these companies were producing oil, really nice high quality oil, but Canada's reserves had not changed. And so the question became well, where is this oil coming from? There are no reserves of bitumen or of this kind of oil booked. There's nothing booked.

And so it was really, really an amazing process that they went through to finally come up with a way to book those reserves. And it always calculated the reserves from the oil sands at a very, very low level. Now, when you were with the ERCB you changed all that, and it was a very significant change.

MCCRANK: Yeah, you recall one of the four things that I said I was to address, and when I was asked to address certain issues by the government they were all of a policy-related nature. I mean they were just like the bleed of our staff to the private sector is that can we put that together better, the information technology, and the reserve issue. And the reserve issue was just as you've said, a matter of some debate for some time, and why are we booking 25 billion barrels in the oil sands area when we think there may be significant more resources? I take no credit for any of this stuff. We have hugely capable staff, and capable Board members all of whom were there before I was, and are still there, some of them, and they were organizing this on their own, including Alberta Geological Survey which is part of the ERCB, as you know, and has been for 25 years, I guess.

And so when we sat around and asked about it we said, what are we actually booking? And the fact is what we were booking was that which was underneath the actual mining permit that we had approved, so for Syncrude and Suncor, and nothing beyond that. We weren't even going beyond the boundaries of the mining permit that had had approval. We were booking absolutely zero for in situ, which may have been not just a failure to understand that we should be booking it, but also the economics of the time would have indicated maybe in situ was never going to develop.

But into the early 2000 up to 2003 or whenever we made this major change, we started to recognize the economics of in situ, and also the fact that we should book beyond the specific mine approval that we had. And there's a little story behind this, I'll come to it in a minute. But overnight we went from I think it was 25 or 30 billion barrels to 170 billion barrels. And I recall specifically, and if you've interviewed Murray Smith, who was the Minister of Energy at the time, he will, I think, confirm this, that one Saturday morning we were here at the Board, in our old building, and going through this stuff, and finally thought well, it's one thing for us as a regulatory body to become



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aware of this, and if we do produce this are we going to have backing, because we knew that we would be attacked. We knew there would be an attack on the calculations that we came up with, so we needed government to sort of believe in what we were doing. So I phoned Murray Smith on a Saturday morning, and I said "Murray, if you've got time why don't you come down to the Board, and we've got something pretty interesting to show you."

Murray and I had known each other when I was up in Edmonton as the Deputy Minister for some time, so he had enough confidence to believe that I must have something to say if I'd call him on a Saturday morning. He came down; we went through it and he immediately -- Murray was a very quick study on anything, and understands the oil and gas business very well -- and he immediately saw the merit of what we were talking about, not just from the point of view of technically this is a better way to go, but of course what it means to Alberta. So he took on the role of being a great supporter within government so that we didn't get our hands slapped by government, and then we did go public, and we were attacked.

I can recall specifically the *New York Times* running an editorial at that time, and it would have been 2003, 2004, saying that these cowboys up there think they have all this oil but it's really just a joke. And I responded in a letter to the editor, which they didn't print, but they quit talking about it, the lack of knowledge at that point because I said we've got 50,000 logs, we've got 5,000 cores that support our view of what the reserves are in the Athabasca area, and that was a fact. I mean all those years, I mean this was all developing, and as you know one of the key foundations of Alberta's success is that it has been able to get all of this information, and it is public information at the Core Research Centre different than most jurisdictions. So we had all of that. We made sure we had cores. I mean that's part of the requirement of doing business in Alberta that you have cores, or you give your logs to the board. We had all that to support us, and therefore we became at that point the second biggest reserve on the face of the Earth. Venezuela hadn't come forward with theirs yet.

PMB: And this of course raises the question about Saudi Arabia having the greatest reserves, and of course then along came Venezuela which said that it had more. Do you have any comments on Venezuela's claim?

MCCRANK: No. I mean I know the debate, I know what people say, but I take them at their word. I put it more positively this way: anybody can come to Alberta and we can show you how we prove those reserves. I don't know if anybody else on the face of the Earth has that ability. That's all I would say about that.

PMB: I had a quote here about something you'd said on reserves, reserve estimates. A couple of years ago I think you were on a number of panels which proposed an arm's length Environmental Monitoring Agency. Ron Wallace talked about this a little bit. I believe he was your colleague at one point on that, and it sounds as though it was a hugely important issue or agency to create from an environment perspective. Can you explain the background to that, and then how it developed, please?



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MCCRANK: I'll try, and I'll try to be reasonably brief. But there is a significant history to the Environmental Monitoring Panel, and a significant expectation of what they're going to deliver. The history, as briefly as I can make it, is that there has been environmental monitoring going on in the Athabasca area in the oil sands forever, you know, since we started the process of developing that in the '60s when Suncor was first producing.

PMB: And that original project was called AOSERP, Alberta Oil Sands Environmental Research Project. And that did go back into the '60s didn't it?

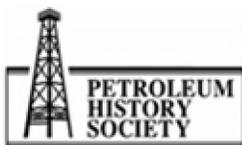
MCCRANK: It did.

PMB: And it was a very scientific base. It studied fish, and it studied bugs and plants and everything, all of the impact of the oil sands.

MCCRANK: We've had a series of associations that have tried to monitor what's going on in the oil sands area, and I think have monitored it fairly well. The Cumulative Environmental Management Association, WEBA, Wood Buffalo Environmental Management -- there were a number of these with different acronyms, but I have to say at the end of the day, in spite of the fact that I think they did a pretty good job -- and Alberta Research Council was heavily involved in monitoring all of this over the last 40 years -- it wasn't well coordinated. It probably wasn't very well integrated, and none of the information was really becoming public, and the public demands that today. There were more demanding public than has ever been the case and I have no problem with that. In fact, I'm one of the public, I demand it too.

So about three or four years ago that reached a peak, that is the criticism of the environmental monitoring reached kind of a peak, and both levels of government had to respond, and both the federal government, which has triggers for environmental monitoring, migratory birds, and caribou and all those things, and the provincial government which has the major responsibility, started to do reports and reviews of the environmental monitoring to come up with a better system. Bottom line is after two or three versions of this Alberta Monitoring Panel review, the federal and provincial government now have a joint agreement, but it's mostly Alberta that's doing it, but a joint agreement to improve the monitoring of the environment from an oil sands point of view, water, air, biodiversity, biomass, all of those things, and it has to be scientifically based. So we have great expectations. And I was on one of those panels and gave advice to one of the other ones that at some point when this Alberta Environmental Monitoring Panel is established, and it's in the process of being developed as we speak, it will have a scientific arm. So we'll have science-based monitoring. It will be independent of government so that it's not a political decision as to what information comes out to the public, and it will be made public.

So there's huge expectation that the issues relating to the environmental impact in the oil sands will be addressed. I think the latest website that has just been put up by the federal government on this issue shows that the monitoring so far, or at least the impact so far has not been



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of significance that people should be worried about it, but let's keep track of it and make sure that cumulatively it doesn't get ahead of us.

So the bottom line is that we're going to have world-class environmental monitoring. When this is established that I think the federal and provincial governments will be proud, and the public will be satisfied internationally, nationally, and locally that we've got a handle on this.

PMB: Well the thing that puzzles me about this since Ron Wallace and I talked about it, I've been trying to get to the bottom of this and it seemed as though at one point it's already in place, but what I hear you saying is that it isn't in place. Now I think I heard you say that there were three panels that have lead up to this.

MCCRANK: Right.

PMB: Would you mind briefly defining each of them? And then second, when exactly will this be formally created and what are the steps needed to get there?

MCCRANK: First question is, Was it already being done? As I say, there were a number of associations that were already monitoring it, the WEBA and the CEMA, all of those different ones, which were mostly funded by industry, but the government was involved. All of this monitoring was taking place from a water point of view, air point of view, and biomass point of view. In fact, at the EUB when I was there, and the ERCB would be the same today, on any approval for an expansion of any of the mines, or any in situ project, the environmental aspect, in conjunction with the Department of Environment, has to be addressed. And we were always confident that those were being addressed, that their environmental measures at that point were not of a worry that we wouldn't allow the project to go ahead.

You often put conditions on these approvals. If you ever saw an approval on a mine approval, which probably had 150 different conditions, similarly on in situ, to address those issues, so it was being done. And I should point out that people have forgotten this, that the Alberta government was the first to ever have a Department of Environment in Canada, in the '70s. So it isn't as if we've ignored the environmental aspects completely. They were being addressed. But as I say, we didn't keep the public as advised as we should have about this. So along came the three monitoring panel reports, and the first one was to address the issue of just what we've talked about, was there environmental monitoring being done? If it was being done how come we don't know about? And what can we do into the future to make sure it's done in a way that is satisfying the public?

PMB: And the years for that were....

MCCRANK: The first one was started I think in 2009, reported about a year later. I was not on that panel but I worked with them on some of the recommendations. And they came out with the notion that there should be a scientifically-based independent monitoring that would have extensive monitoring in the system, and it would probably cost more. In fact, the best assessment that was



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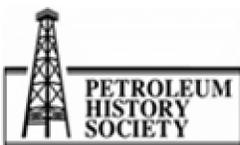
made at the time, before the monitoring panel did its report, was that there was about \$20 million worth of environmental monitoring being done, mostly paid for by government in that area, or by industry in the Athabasca area, and we think it'll cost 50 million going forward. So there's going to be more monitoring, and more coordination, and more public information. So the first one made that recommendation.

The second panel then was to give the government advice as to whether it should be independent or whether it should be part of the government, and at the end of the day we recommended that it should be an independent monitoring panel, to take politics out of the equation, not that politics aren't involved in the policy setting, but they shouldn't be involved in the dissemination of the actual information. And that one was completed. And I was on that panel, and that was completed last summer, last June or July of 2012.

And then the third one, which is in existence at the moment with Ron Wallace and Howard Tennant as the co-Chairs, is a very good panel. They are actually setting up the implementation plan for the organization. And as I think I understand it, they are to report within the next couple of months, and the exact date of when this will start up I can't tell you because that will be part of the plan. But a lot of what we have been talking about of course happens when reports are being prepared. That's always the nature of reports; when people see their issue they address them at the time. So there's already a website that the federal government, in the joint Alberta federal initiative relating to oil sands monitoring, that is on the internet at the moment, and it addresses some of the issues that we've talked about now. But there will be more. There will be more monitoring. It'll be better monitoring. It'll be more scientifically based. It'll be more comprehensive, more integrated (indiscernible) public.

PMB: Now for decades, as you know, there was wrangling within Canada about who owns the resources in basically the Prairies, and that wasn't resolved until 1930, as you know, and a lot of the original research in the oil sands was done by the federal government because they said that they owned the resource. And this has been going on forever. And then the AOSERP project in the '70s, if I understood correctly from Ron Wallace, the federal government kind of initiated it, and then unceremoniously backed out and left Alberta to do the work after energy prices collapsed, and there was the National Energy Program and all of that. So you saw kind of a really unpleasant political -- this thing becoming a political punching bag in that period. And Ron Wallace is very, very diplomatic. He wouldn't say anything like what I'm about to say. He said, and then they came in a couple of years ago and said well, we're going to fund the water studies, and we're going to look after that. And his notion is that this is an infringement, and they shouldn't have pulled out in the first place. Do you have any thoughts on that political controversy?

MCCRANK: Well, I guess in a Confederation we're always going to have a bit of tension between provincial and federal governments, and frankly even within the province you're going to have tension between the provincial government and the municipal governments, even though the municipal governments are a product of the provincial government. So there's always going to be a bit of tension. You always look back at the Constitution and say who is really responsible?



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The federal government has certain responsibilities in the oil sands area, and it comes about through various pieces of legislation, for instance, the *Fisheries and Oceans Act*. Any navigable water, which means runs from one province to another, they have responsibility for that. They have a responsibility for migratory birds, and we may not think that's a big issue, but it is to them and it should be to us, that fly across this country; emissions that move from one province to another.

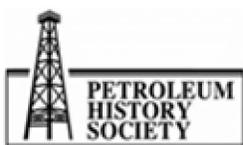
So what I'm trying to do is defend the federal government's initiative to try to get involved in some of this because they have federal responsibility. Beyond that, from a political point of view, you will recall three years ago Canada was being plastered and belittled all around the world for this dirty oil that everybody talked about. So the federal government, to their credit, just didn't say well that's an Alberta problem they said "No, no, no. This is a Canada issue and we're going to try to deal with it." So they started to do some reviews, and some studies on all of these issues.

The Species at Risk Act, for instance, which includes the woodland caribou up in the Athabasca area, there have been suggestions that they are in threat, so they started to look at that. There were actions brought by Aboriginal people in our First Nations in federal court to force the federal government to react to some of these pressures that I've talked about. So the federal government had a legitimate interest in being involved. Provincial government, of course, has the mainstay because they own the resource, through the Crown, and they have to respond from an environmental point of view within the province.

So there's going to be a little bit of a tension. I think the federal and provincial governments have actually worked it out pretty well in the last while. I think the feds pushed a little bit perhaps because they didn't think the province was pushing hard enough back. The province has now pushed back. The feds have now worked out an arrangement whereby it's all going to be put together and through this joint Alberta, federal government implementation plan, of which Alberta will lead most of it. So long way of saying that I think that it's a joint issue that we have to deal with, and I think the governments, to their credit, both federally and provincially, are making it work out.

PMB: What do you know about the technological developments in terms of environment and sort of the achievements in the oils sands? And here is an example of what I'm thinking about: 20 years ago or so, I guess it was 30 years ago when Syncrude came on-stream, it might have been longer ago. There was a lot of concern across the country about acid rain, and the plants up there were producing a lot of sulphur emissions, sulphur dioxide and trioxide and so on. And the notion was that this would blow toward the Canadian Shield and it would come down as acid rain, and it would poison lakes and so on, and a very deep concern.

And partly in response to that, the oil sands companies have reduced hugely the amount of sulphur emissions that they made in those days. An interesting example of good technology being developed in order to reduce environmental problems on the one hand, and on the other hand creating an economic product, sulphur.



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MCCRANK: Right. Well, from the question it's pretty clear that you know that Alberta government and the Alberta regulators take a pretty strong position on sulphur emissions and, for instance, flaring has been reduced dramatically in this province, which hydrogen sulphide often associated with it. So there have been technological developments that have had to be put in place because of the fact that there was a desire on the part of the larger royal "we" to stop sulphur production or sulphur emissions that have provided for better mechanisms.

During the course of one of those Alberta Environmental monitoring panel studies we met with the Alberta Research Council, and there are apparently, and this is part of what I said earlier about the environmental monitoring that isn't known by the public, there are about seven locations I think in Alberta where the Alberta Research Council has for years, monitored acid rain to see if there's any increase or decrease or how it's operating. And they had one up in the oil sands area, and they picked up about ten years ago or I may have the dates wrong, but something like that, that there was a slight increase in acid rain from one of the smokestacks, one of the stacks in the mining area. They went to the company and said, "Can you change that?" They changed the combustion process, eliminated the source of that toxic issue and it disappeared.

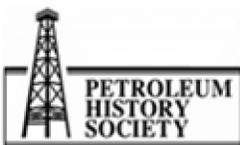
Nobody knows that. I mean here was Alberta Research Council with these monitoring sites across the province that are doing it. I venture to say that there aren't many provinces that have as much environmental monitoring as we have, and a lot of the technology that comes out because of that has been leading edge in Alberta that could be used elsewhere in the world. And I'm sure you've had a chance in your career to fly at night the Middle East, and you see what happens to the flares in that part of the world; you can see Paris from the Persian Gulf.

So we're leading edge, and the companies develop those because they're responsible citizens, and also because they believe the government will be responsible in urging those kinds of changes.

PMB: Carbon emissions; and you mentioned that a few years ago there was, what was it called, Lush Cosmetics did its thing in Vancouver, and damned the oil sands, and there's been a lot of that. It still continues around the world, the notion that we are the purveyors of dirty oil, and we're environmentally irresponsible and so on.

In your view is that really going to continue to be an issue or did it kind of peak a few years ago and now it's in decline, partly because of the initiatives of the federal government?

MCCRANK: Well, I think it's always going to be an issue. I mean it is a heavier carbon footprint than some of the other reservoirs on Earth, although maybe if you take into account all of the other features such as transportation and so on, maybe they all average out. I'm told, I have no firm evidence of this, that it's not any more carbon intensive than that from Northern California where they have the heavy oils. I mean I think we've got to be alive to the fact that the hydrocarbon production is going to be carbon intensive and do that which we can to reduce the footprint. Why not, if we can?



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And so I don't think the debate is going to go away, and I think it should always keep the government and the industry and everybody else's feet to the fire all the time on that issue. I think we should continue to do so.

PMB: In a related issue, you've seen the argument about ethical oil?

MCCRANK: Yes.

PMB: Now the oil sands are governed within a jurisdiction and in a country that believe in law and protect human rights and so on. By contrast, in those countries where most of the oil produced in other parts of the world these are secondary and tertiary issues.

MCCRANK: Well and that's part of the cost, as I say. One of the costs of doing business is that we believe that in Alberta the oil sands are developed very responsibly, and there's a cost associated with developing it really responsibly. Other jurisdictions I can't speak for, but as I say, if you can see Paris from the Persian Gulf as a result of the flaring you know something's happening.

PMB: Well what do you mean by that? I don't understand that expression.

MCCRANK: Well, they don't try to collect their natural gas that comes --

PMB: No, but you said you can see Paris from the Persian Gulf.

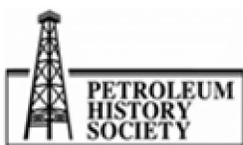
MCCRANK: Well, at night the flares are so huge on the Persian Gulf -- you can't see Paris, but I'm using that as an indicator of how -- the entire night is lit up. At 12 o'clock midnight you'd swear it was broad daylight, which apparently was the way it was back in the Turner Valley days and '30s before the ERCB was founded. But the huge, huge flares that are flaring off (indiscernible).

PMB: Crises that affected your involvement in the oil sands. What were you doing during the National Energy Program? Were you at all involved in the oil industry then?

MCCRANK: No, I wasn't. I was with the Department of the Attorney General and I was prosecuting some of those cases, but they didn't relate to that issue. I was an observer.

PMB: And then we went through a period when you were on the Board when oil prices were just ghastly. I think it was around the time you joined the Board that oil prices dropped down to ten or \$12 a barrel and they stayed quite low, and then of course suddenly in the early 2000s they rose very rapidly.

MCCRANK: Yeah, it was a remarkable change. I do recall, in fact, the day I joined, which was late July of 1998, I remember, and not that I would have known enough to ask this, but somehow I found out that the price of oil was \$9.75 a barrel and gas was \$1.60. So I remember asking people, "How can we find out what the price of oil is going to be in the future. I mean how is this going to change us, and that kind of stuff?" And the best advice I got was that *The Economist*, the magazine



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from Britain, had the best fix on the price of oil. And so I was reading it carefully, and in March of 1999 they predicted oil was going to go to \$5 a barrel and stay there for the foreseeable future. And of course it went to \$150. So what it showed me was that there's no predictability in this marketplace. It's going to happen and you're going to have to live with it, and you've got to be flexible enough to deal with it. But it was absolutely remarkable. Had it gone to \$5 I wonder if we'd be having this interview about the oil sands?

PMB: We certainly wouldn't have.

MCCRANK: Exactly.

PMB: But the funny thing about that issue of the magazine, because I subscribe to *The Economist* as well, is that the day it hit the news stand was the day oil prices started to rise.

MCCRANK: There you are.

PMB: It was the strangest thing. It was the worst call in history. And I don't believe you can download that issue on *The Economist* website anymore.

MCCRANK: Isn't that interesting.

PMB: Yeah, I think they've just deleted it and left a few things up.

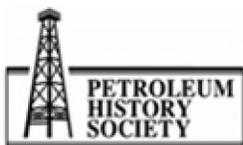
MCCRANK: But *The Economist* made other predictions; for instance, on the oil sands. I recall that I was interviewed about the oil sands, it would have been about 2003, 2004, and I remember saying, and I wasn't the only one saying this, so it isn't as if I'm the visionary. I'm not in this respect at all. But I said I thought the oil sands would reach 3 million barrels a day, and I was written up in *The Economist* that month in a negative way in saying that, here's McCrank, the head of the energy regulator believes it's going to be 3 million barrels a day and he has got no idea what's going on in life generally, that this -- it will never be anything more than a backup, these oil sands, to real production.

PMB: *The Economist* said that?

MCCRANK: And I met the author about three years later and he said I guess I was wrong, eh?

PMB: That is really good. I do want to ask you one of these optional questions because your comments have kind of fed into this. I have two questions; one of them is what's been the role of government in oil sands development? What has it been? You've talked about that. What should it be in your view?

MCCRANK: I think over the years if you put them altogether, there have been hiccups along the way, but I think the government has been a responsible steward of this energy development in the



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public interest through a variety of measures; through the Board that it set up, through other government departments, and through its promotion of this energy source.

It can be more of a salesperson and leave the development up to the regulator, and that's the way it should be. But if you go back, in fact I was reading this last night, that in 1950 somebody in the senior level of government, the Alberta government, predicted that the oil sands was going to be a huge energy source in Alberta, in Canada. And for a long time that was still not believed, but that was 1950, 60-some years ago when the government was saying that, and the government, of course, promoted some of the mining projects. As you know, it promoted a lot of the research through the Alberta Research Council, it promoted development through a regulator that it gave authority to make sure it was done in a responsible way, and in the public interest.

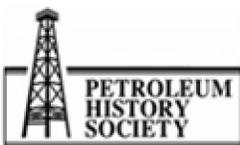
So I think the Alberta government, in particular, and I'm not as close to the federal government, but I think the federal government were very much engaged in the Syncrude, for instance, projects. So they were of belief that there was a resource there that could be developed responsibly as well.

What they can do in the future? I think more of what they have been doing. I don't think we've told the story well enough in the past to comfort the public that we're responsible in this province, and we've got hugely sophisticated companies that know how to develop it in the public interest, and if anybody wants to go to -- just comes to mind because I, not long ago, was at Imperial Oil's plant in Cold Lake, and you could eat off the floor. I mean it is so well run and so capably put together. And I think that applies to Syncrude, and Suncor, and Shell, and CNRL, and all the ones I haven't mentioned.

So I think that if the federal government and the provincial government have to continue to convey the message that we're not state owned, development of the oil and gas industry, but it's very much in the public interest and controlled, if you will, if you want to use that word from all of the public interest points of view, to be a strategically important, and well developed energy industry, and they'll support it.

PMB: Now Peter Lougheed, I told you he was the first person I interviewed, he really stressed - and you'll remember his term in office - that the people of Alberta own the resource. It's a very unusual situation in Alberta that most of the resources are owned by the people. To what extent do you think that that's an important fact in the creation of the kind of industry that we have?

MCCRANK: I think it's extremely important. And I've heard it said. I used to say it, others used to say it that, this industry should keep in mind, and it does keep in mind, and the government should keep in mind, that the resource is owned by the public; it's usually developed on their lands, it should be developed in their interest. So while the public is very content to have the development by a company that is going to make a good profit out of it, they've got to keep in mind where this is all coming from, and who owns it, and whose land it's on, and you should do it responsibly. And I think that sort of fear here, that sort of culture has pervaded the development of the industry.



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As I say, having worked with industry from a regulatory point of view, and being a representative of the public interest, by and large the industry has tried to be, and in most instances has been successful in developing the product in a responsible way, with all of those other features in mind.

PMB: Now Joy Romero of CNRL stressed that environmental benefits come from having a publicly-owned resource, and economically motivated private sector developing the oil sands. She said we can do all kinds of things to reduce our carbon footprint, to reduce our environmental impact, but we have to make our industry more efficient to do that, and this is very successful. And she actually said that one of the rules, and it had to do with the size of the tailings ponds, one of the ERCB rules about tailings ponds, they can exceed what the ERCB is calling for, but the ERCB specifically says no, your tailings pond has to be this size, and she says they can make it very efficient and make it smaller. And so in that sense her argument is that, first of all, the value of economic development, but secondly that in some cases the Board, itself, is actually holding progress back.

MCCRANK: Well, that's an interesting observation. And the tailings pond directive came out after I was there. We were working on it when I was there and, of course, there was huge opposition at the time. The prices were a little different during the time that I was there from '98 through to 2007 such that some of the tailings ponds issues that we were trying to address would have made the operation uneconomic in 1999, wouldn't make it uneconomic today.

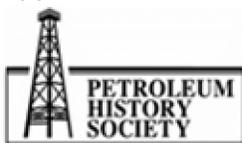
So I think the Board always tried to find an easy balance whereby they would set a minimum and expect people to exceed it, and companies can exceed it, but at least from the point of view of the environmental impact, it has been addressed, and if you can do better, that's fine.

I'll give you an example of doing better. I remember not in the oil and gas sector, but on the electricity sector while we were approving a number of electric generation plants in about 2004, just after we got into deregulation, and we had three of them, and the first one - I won't mention the names of the companies - came up with it was going to be coal fired, but it was going to be critical combustion such that the carbon footprint would be reduced. And we said that's fine, we approve you. And the second one came along and said we can't afford that, and we said well, if the first one can you should be able to.

So once the standard is set, once the standard is set by a company after the minimal amount is set by the Board, if a company comes along and beats that, then that gives the Board a benchmark to believe that economically everybody can do that, and then they'll up the ante, if you know what I mean.

PMB: Very good. I promise you this is my last question. Aboriginal communities and other local communities that are affected by development, is that adequately factored into these decisions?

MCCRANK: If you look at some areas of the province, and particularly the Athabasca area and I'm thinking of the most impacted First Nation in that area, they would say yes. I mean there's certain opposition to certain applications, but by and large they have been comfortable with the



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development. Others have not been. That's a continuum. I mean some nations are not going to be happy with any development, just like the public, just like the public generally, and some people are going to be happy with development almost next door as long as it's done responsibly, and you have to accommodate all of those.

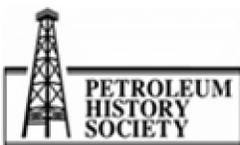
But I am a firm believer that the mechanism that is in place for consultation, and I mean meaningful consultation with our First Nations is absolutely paramount, and if we do it working with them, and try to accommodate their concerns, most of the issues will be resolved. Some won't, and that's why you have regulators to deal with them.

PMB: Fair enough. I think that covers it all off. Is there anything that you would like to kind of wrap up your thoughts?

MCCRANK: Yeah, I'd just like to comment on one point that I don't know if I covered significantly enough earlier when we covered about the gas over bitumen issue, and that is that it all relates to the reserves, and those two things I didn't tie together earlier, and that is the gas over bitumen initiative that was started in the last '90s and took until 2003 was a conservation issue. That's what it was. It was a conservation issue in the sense that if we hadn't taken that action the reserves might very well have been sterilized forever. Maybe there would have been a technology that would have come along and allowed for their extraction without the steam that had escaped into the gas reservoir, but if no technology had come along, we might have sterilized a huge resource. And as a result in 2003, 2004 we took action at the Board to shut down not just a number of individual applications that were brought forward by bitumen owners who were coming forward and saying stop these guys from extracting the gas. That was, you know, a dozen at a time. We didn't have the geology, the regional geology mapped well enough to know exactly where all of these impervious layers were and where the gas was going to be a problem.

So you may recall in 2004 we announced that we were going to shut down 2,000 gas wells, but we had a reverse onus associated with this, and this is a judicial term, but something I've learned from my background, we gave companies the ability, if they had information that we didn't have that would show that they weren't going to cause damage they could keep the gas flowing, but if they couldn't show us that, and that was their obligation, they had to shut them in. At the end of the day we shut in about a thousand. The other thousand we were convinced by the companies who had more information than we had at the time on their geological reviews that we didn't have to shut those wells in. But we had to shut in a thousand.

And then we did a more regional geological review of the entire area. Since we had limited staff at the EUB we asked industry to supply us with one or two geologists from each of their staffs for nine months, which they did, and we set up a big a situation room, as they call it on CNN, where these people worked together, the Board staff, and the industry seconded a geologist to come up with a regional geological study which then gave us more ability to make sure which areas should be shut down.



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The reason I bring that up is that's associated with the reserves, because when we announced we had 170 billion barrels of oil, bitumen in the Athabasca area, had we not taken that conservation measure which we took very shortly thereafter, we wouldn't have been able to say we had 175 billion barrels of oil. And it was the key argument that I had with the government who were not all that happy. We were an independent body, could do what we want, but I knew they were unhappy because gas at that time was the main source of income from the government from a royalty point of view, and we were shutting in a good portion of it.

But the answer was, the difference in energy content between the bitumen and the gas is 600 to 1. And so we, as a conservation board, have a firm obligation to ensure that 600 parts are well protected, and we're shutting in those wells, and we shut in a thousand of them at the time. And I said afterwards to them now you can continue to say you've got 175 billion barrels, but you wouldn't have been able to had we not taken that action.

PMB: Very nice. There's an author named Jeff Rubin. I don't know whether you know him. He's an economist.

MCCRANK: Yes.

PMB: And he's just written a book called *The End of Growth*.

MCCRANK: Yes.

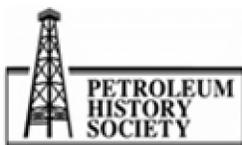
PMB: And his basic thesis is that worldwide energy costs have become so high, specifically oil, that normal economic growth, as we've known it for the last hundred years which has been basically driven by oil and by hydrocarbon energy, is not possible because of the high cost. It immediately is draining a great deal of money out of the economy and so growth in the advanced countries is not going to be the kind of thing that we're accustomed to, and this is partly because of the growth in China and other countries which are demanding more and more oil, and therefore helping to keep these prices high. Thoughts on that?

MCCRANK: Well, I've read some of Mr. Rubin's dissertations and I've listened to him a few times; very interesting speaker, and he was with CIBC, I think, before that wasn't he, or one of the banks?

PMB: That's right.

MCCRANK: He's been saying that for some time. What I'd be interested in is whether, over that ten-year period when he's been saying it, whether he's observed that this is actually taking place. So far I don't see it. I mean he's talking about going back to smaller villages that people live in, more self-contained, you can walk to --

PMB: Smaller houses.



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MCCRANK: -- walk to your stores, all the rest of that stuff. And it's kind of a nice little dream actually, but I'm not sure I've seen it happening yet, anyplace. But I'd be interested to hear his observations on that.

PMB: Following up on [an earlier] discussion, I'd like you to say something about the technologies, please.

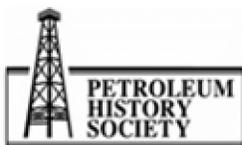
MCCRANK: Well, you had asked earlier about whether technological advancements have been made, and whether we're capable of exploiting them, and as I said earlier 15 years ago in situ development of any sort was questionable. But along comes good Albertans, with good companies, that are leading edge in many ways in technologies, which now are advancing around the world, and they developed SAGD which is the Steam Assisted Gravity Drainage process, and that seems to be reasonably successful. But there are other possibilities as well. And, of course, prior to that we had Cyclic Steam Stimulation in the heavy oil area. But the THAI process that is being developed by PetroBank, Toe to Heel Air Injection, and I feel like a bit of a promoter in this respect 'cause I'm on the board of PetroBank. But that's a combustion process that is directed, and actually the product that is being produced has been upgraded slightly from the usual bitumen. We're at the moment trying to bring it to commercial success; it's slow, it's a new technology, it's tough to develop because technology is slow to develop.

But, for instance, when we talked the gas over bitumen issue, and a number of the parties came forward and said we are soon going to have the ability to develop this in a different way, not relying on steam at all, and that's still in the works. It hasn't been proven yet, but it may happen. So there's lots of technological developments that are made in Alberta for our environment, and encouraged by government because there are royalty reliefs that are allowed, and there is incentives that come out of some of Alberta Innovates which helps develop some of this technology that can be and are being exported around the world. And you'll see why companies like Petrobras in Brazil, and companies in China are coming to Canada all the time, and particularly coming to Calgary to find out how things are done.

Why is China buying so much of our resource? Because they like the fact that they've got -- then involved in the technology that exists here in Alberta, and that has to be the environment that is created by private companies working together with the government, and the regulatory, and the public in developing the resource.

PMB: Very interesting. Now, do you have anything else on your list?

MCCRANK: I was going to mention that we've talked about the provincial government and the federal government, but we should keep in mind that there are municipal governments involved. And the Municipality of Wood Buffalo, particularly the current mayor, Melissa Blake, has been absolutely a marvelous political person to have in place in the height of a very big boom in that part of the world, and she protects the municipal government well, and the people in that area, and still allows development to occur in responsible ways on the assumption that the governments respond



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from a health point of view, and from an environmental point of view, and all those other points of view. So you really have to have all levels of government working together.

PMB: Now I started following the THAI process a few years ago. I haven't heard anything on it recently. Is it being kind of proved as a successful system, or how much has it advanced?

MCCRANK: We just had a meeting the other day actually, and put out a short blurb in the paper for our annual general meeting which is coming up. We have not proven commercial success yet. We have proven that it works in a lab and we've proven that it works in the field, and in particular we have a field in Saskatchewan called Kerrobert, just across the border actually, and we're working with that reservoir, which was a depleted reservoir. So we're going back and taking a depleted reservoir that was depleted from a conventional point of view, and producing oil, and we're trying to get it up to commercial levels, which we haven't yet, but we're still hopeful that it will come about. All of the lab tests, all the pilot tests show that it should, but on a bigger reservoir you've got lots of -- the pressure has to be just right, and it has to work in a commercial way.

PMB: In 1994 a group -- and I can't remember from your chronology where you were at that time, the Alberta Chamber of Resources and a group of industrial partners put together a plan whereby the provincial government would give a certain benefit, in tax terms, it's a difference of taxes to oil sands producers. What were you doing at that time, and what was the impact of that, in your view?

MCCRANK: You know, I just know about that through history. I was working with the Attorney General's Department at the time, and not involved in this at all.

But I do know, for instance, the THAI process, the government has been engaged in providing some funding through Alberta Innovates and Alberta Research Council to try to bring this to a successful conclusion because it's in everybody's interest. The THAI process, as you would know from your understanding, there's no water use because you're not injecting steam; there's no energy use so you're not having natural gas to produce the steam, you don't have any of those things and it comes out as an upgraded product. So obviously it's of interest to the government and to others to try to make it successful. So they've been engaged. And I suspect back in those days, being the government the way it has been, that it provided some royalty relief to allow for development, which is the way it should go.

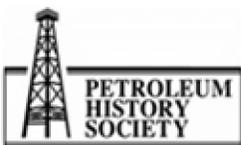
PMB: It was very nicely situated when oil prices started to go up.

MCCRANK: Yeah. Right. Right.

PMB: Anything else?

MCCRANK: I think that's it.

PMB: Thank you very, very much.

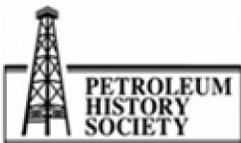


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MCCRANK: Thank you.

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