



# HOWIE DINGLE

Date and place of birth (if available): Norman Wells, NWT

Date and place of interview: 26 November, 2012; Esso Plaza, Calgary

Name of interviewer: Peter McKenzie-Brown

Name of videographer: Peter Tombrowski

Full names (spelled out) of all others present: Christine N. Graves (from Esso)

Consent form signed: Yes

Transcript reviewed by subject:

Interview Duration: 1 hour, 6 minutes

Initials of Interviewer: PMB

Last name of subject: DINGLE

---

PMB: You were born in Norman Wells, North West Territories. That was the part we missed. Your father was helping develop the Norman Wells field for the Canol Pipeline?

DINGLE: That's correct. So, I'm a second generation Imperial Oil employee. My brother worked for Imperial Oil. Between my dad, my brother and myself we got over a 105 years with the company.

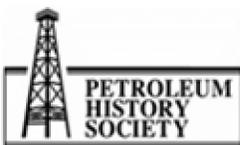
PMB: Good Lord.

DINGLE: Little facts and figures: because my dad was with the company, we moved all over Western Canada and Toronto. I came back here and took my university degrees at the University of Calgary, then hired on myself with the company, starting full-time in 1971.

PMB: In 1971?

DINGLE: Yeah.

PMB: Okay. What department were you with when you began?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: I hired on with our downstream, our refinery operations. I spent five years with them working out of Sarnia. But, as a result I could spend 18 months in La Jolla, California and another 12 months in Montreal.

PMB: What was your degree in?

DINGLE: I have three: a Bachelor's degree in organic chemistry, a Bachelor's degree in chemical engineering and a Master's in chemical engineering.

PMB: So, when did you come out of the downstream?

DINGLE: I was transferred here in 1976 to help design the control system for the Taglu Gas Plant, the same gas plant that has not yet been built.

PMB: That was going to be up in the Northwest Territories?

DINGLE: Yes. Just in the Mackenzie Delta. So, the Mackenzie gas pipeline that has been in the news over the last decade is the second try at bringing that gas...

PMB: It was four decades, I think. It was closed down in 1977, wasn't it?

DINGLE: Yeah. That's correct.

PMB: Yes, okay. So now, at what point did you first hear about the oil sands?

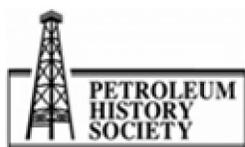
DINGLE: Actually, my second summer job with the company was 1965 when I was measuring the viscosity of Cold Lake bitumen under the effects of various surfactants. That was here in Calgary.

PMB: In nineteen....?

DINGLE: '65. It was just after the company had started piloting operations in Cold Lake. So, I had an early introduction to it.

PMB: What can you tell me about those early operations? I went up to Cold Lake a couple of months ago and I found one guy who had been there at that time, but he was fairly low level. He didn't know anything technically about the company. What can you tell me about those early, early days?

DINGLE: The very earliest pilots and I didn't have all that much association with them, were essentially single, vertical wells, putting steam in the ground and trying to produce back the oil. That was what were known as the May and Ethel Pilots. They ran for a number of years and they got shut down when prices were pretty bad in, I think it was the middle-late 70s. We restarted the pilots at Leming in the late 70s, early 80s. That's where we started experimenting with horizontally drilled



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



wells and from a single surface location. That led to the development of the cyclic steam stimulation process or the CSS that Cold Lake was developed using.

PMB: This horizontal drilling is an extremely important part of this whole issue because you are still using mostly vertical wells, aren't you?

DINGLE: Well, no. They are deviated wells. All of our new pads being developed in Cold Lake have a lot of horizontal wells in them but the original Leming design were wells that were deviated out as much as 70 to 80 degrees; almost horizontal but not quite.

PMB: Now, in some of the research I have done, there is some discrepancy about which was the first horizontal well drilled in Canada. Some of the research that I have says that it was drilled in Norman Wells around 1978; other research says that it was drilled at Cold Lake around the same time. Do you have any idea?

DINGLE: I could not answer for anything that was drilled in conventional production. I know that the first thermal, horizontal well was drilled in Cold Lake.

PMB: And, the year was around '79 or '78 or thereabouts?

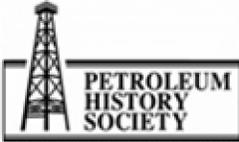
DINGLE: About that.

PMB: Okay, fair enough. Continue with what you were telling me, those very early days?

DINGLE: Well, that pretty much summarizes it. I think the company, given the variations in prices and things like that, took a long time before the company was confident in the production, the thermal production process, CSS. And, in the early 80s began the process of seeking approval for a combined production process and upgrader. That would have been the Cold Lake Mega Project. That is where I got re-involved in the oil sands. I was transferred to Cold Lake in 1983 to head up the operations at Cold Lake. After the company had decided to go ahead with the production project we dropped the upgrader at that time, but had decided to go ahead with the full production project.

PMB: Let me ask you a little bit about that, because I remember about the time of the National Energy Program, which we all still remember pretty well. Imperial/Esso announced it would build this and I think it was a three billion dollar project which would include the upgrader and those facilities. And, that was just before the NEP. I think was '78 or thereabouts. And then, the National Energy Program came in and they just shut the whole thing down.

DINGLE: Well, they shut down the project for a while. It got resurrected when we discovered we could sell diluted bitumen to other people who already had upgraders. So, basically the project was restarted it is just that we didn't build the upgrader. We started using other people's upgraders. Well, some of our own in Sarnia. We had a coker there with Koch Oil in Minneapolis. So, the project did proceed. It is just that we never ended up building the upgrader onsite at Cold Lake.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: Now, I've heard the name and I can't remember what it was but it was somebody at Esso. The thing was shut down for a while and then somebody here said, "Why don't we do it in stages." And, I believe that was around 1981 or '82 and that really led to the resurrection of the project.

DINGLE: That is right.

PMB: Can you tell me about that?

DINGLE: I'm not sure who would be the key individual. The individual who led us through the mega project and got approval for it was Bob Peterson. And, you were asking who else you should interview, he is a guy you should try and interview. When I joined the oil sands group at that time, it was Ted Courtnage was the vice-president in charge. He was there for about six months after I joined the oil sands. Now, whether it was Bob Peterson or it was Ted Courtnage or a combination of the two that decided to stage the productions side and the sell the diluted bitumen to people who already had upgraders, I could not tell you. I was not party to the decisions at that time.

PMB: The person that was named to me is still here and I think he's a vice-president or something. But, I have the name somewhere. If you don't mind, I will get in touch with you on that question. So, we have this period after the National Energy Program and everything had collapsed and then all of a sudden you came back you said, "Well, we're not going to build this upgrader, but we're still going to proceed with this thing." To my mind, one of the really interesting things about it was that you were in an area of oil sands assets where -- let me put it like this, there hadn't been a really good system of production developed. The CSS kind of worked but it, for example, hasn't been as nearly as efficient as SAGD. What do you think about -- which developed much later?

DINGLE: There are a couple statements I disagree with. One, Imperial invented SAGD.

PMB: Imperial what?

DINGLE: Invented SAGD.

PMB: With Dr. Roger Butler.

DINGLE: Yes. We had the original patents on it, as well as inventing CSS. It was our company's determination that CSS was better for Cold Lake than SAGD would have been. So, for that reason we developed CSS or developed Cold Lake using CSS. Based on all the experience I had at Cold Lake that was the right decision. SAGD works in a slightly different reservoir configuration than we experienced at Cold Lake. So, other people had gone ahead and used SAGD elsewhere, where CSS would not have been as efficient and been very happy with that. But, we've always been happy with CSS in Cold Lake. Although, as we get into different parts of the reservoir we're beginning to move more and more to a SAGD type approach.

PMB: One of the arguments against it -- I have no technical background, so let's understand that right at the beginning -- but one of the arguments I have heard is that in effect, you are spending six



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



months steaming and six months producing; whereas with SAGD, you are continually steaming and producing.

DINGLE: That's correct. It is an entirely different process. Cyclic Steam Stimulation, as the name suggests it is a cyclic process. One of the problems that we experienced with SAGD at Cold Lake is that you are spending a long time getting a lot of steam in the ground to form your steam chamber and that is time when you're not producing anything. So, cyclic steam gets you production faster in a Cold Lake type environment. Cold Lake is a very thick, very rich reservoir and it's particularly amenable to using Cycle Steam Stimulation. It's the approach to use at Cold Lake. SAGD is an approach to use elsewhere.

PMB: Remind me about the story of Esso actually acquiring those huge assets in the Cold Lake area. I'm trying to remember. Was it in the 1950s or early 60s?

DINGLE: It was the late 50s.

PMB: You were able to somehow get the best part of the reservoir; well, because you were the only one interested at that time.

DINGLE: That's right. I asked my dad. I cannot remember the name of the geo-scientist that was responsible for us acquiring those leases. I asked my dad once and he knew the name. He knew the individual concerned. But, we had in our shop a very brilliant geo-scientist who staked out the leases and acquired some of the best ones that were available. We acquired other leases elsewhere in the Athabasca region at the same time. But, this particular individual was responsible for us getting the best that was available.

PMB: And, it was quite a bit forward thinking.

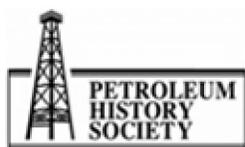
DINGLE: Yes.

PMB: Because, at that time there was a lot of experimentation in the Athabasca area but there were really wasn't a strong sense that it was commercial.

DINGLE: The Athabasca people were looking at mining opportunities. In Cold Lake, it depended upon developing an in-situ process. That is why I say, my first job in '65 was beginning to look at the process: How do you get the oil out of the ground; with a thermal process. So, yes, it took some great foresight by some people.

PMB: And, a lot of patience. As I recall and I think you confirmed this, you started your first test in '64 and really didn't have anything commercial until after I got into the oil industry, which was '75-'76. That was when it was becoming apparent that you'd cracked the nut.

DINGLE: Yes.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: Anything else you want to say about that?

DINGLE: No.

PMB: I have a bunch of fairly specific questions that I'd like to ask you about. First of all and you have begun to answer this question, CSS is uniquely well-suited to the Cold Lake deposit. Why and how? You've told me a little bit about that.

DINGLE: Well, again you are getting into reservoir engineering and I'm maybe not as competent in that to answer that question. The thickness and the richness of the reservoir make it more suitable for CSS than for SAGD. With CSS, we don't need to establish the large steam chamber that provides the gravity drainage that you see with SAGD. It just does not make economic sense to go ahead with that process and that type of reservoir.

PMB: Now when Peter and I were up at Cold Lake a few months ago, one of the things that really amazed me that I did not know. What I was seeing as we were driving around there, was the use of screw pumps; steaming and screw pumps.

DINGLE: Yes.

PMB: Are you using any of that?

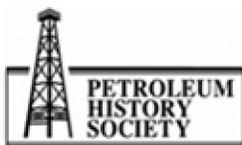
DINGLE: That I cannot answer. We dabbled with it briefly before I retired. But, there's things going on a Cold Lake in the five years since I've retired that I'm not familiar with anymore.

PMB: I thought it was Canadian Natural Resources that was mostly using that system there?

DINGLE: We used it in some of the Grand Rapids Formation, south of Cold Lake. But again, we only dabbled with it at that point in time. Our main effort was still CSS when I left.

PMB: Okay. This is just a really, wide ranging, saying anything you want kind of question. What thoughts do you have about the future of oil sands development techniques at Cold Lake? They're doing the injection of condensates to eliminate the use of steam and therefore, carbon emissions and that kind of thing.

DINGLE: Well, let me back off and say that I am known in the company for making this statement is that: research to oil sands development is the same as exploration is to conventional oil. We know where the oil sands are. We don't necessarily know how to get the oil out of the ground. That involves research. Conventional guys don't necessarily know where the oil is but once they find it they've got a lot of technologies for developing it. So, that's basically I have long-supported involvement in research in Imperial Oil, just to figure out what we need to use to get the oil out of the ground, economically shall we say.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: I spoke to somebody and the name is eluding me right now. But, he had been in charge of Esso's research facility here in Calgary going back to the early 70s. Do you recall when it was developed here?

DINGLE: Well, we've had a research center out at 50th Avenue South. That's where my first summer job was.

PMB: So, that was in the 60s?

DINGLE: Yes.

PMB: Okay.

DINGLE: We've had a production research capability here since the 50s. The new lab, the new research center up at the university was built back in the early 80s. Or, late 80s, I'm sorry. I know I was the second manager in charge of that facility. † I was preceded by Roy Miller who built that facility. But, we've been doing serious research out at that research center since and the predecessor, since '64-'65.

PMB: The fellow that I'm referring to actually moved from Toronto to Calgary to set up -- I think maybe this was the project in '64. I was really lucky to have the opportunity to interview him and this was a couple of years ago. You were the manager of the facility before it moved to the U of C?

DINGLE: No, after.

PMB: After it moved to the U of C?

DINGLE: Yes.

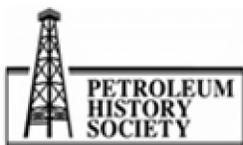
PMB: Can you tell me what you did there, please?

DINGLE: I was in charge of the research center. So, that was all our conventional oil research and all our oil sands research was all focused up there. That group also managed the direction of the pilots that were undertaken out of Cold Lake. It also managed any research that we did collaboratively with other industry partners though outfits like CONRAD, which I was a co-founder of and...

PMB: Remind me, CONRAD stands for?

DINGLE: Canadian Oil Sands Network for Research and Development.

PMB: When did you set that up?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: That was set up in the late 90s, between myself and Thane Waldie who was my counterpart at Syncrude. I was the co-founding chairman of that. The whole focus on CONRAD is to get industry collaboration on what we call, Pre-Competitive Research. Because, the whole business of research is as I said, essential to oil sands. It's very expensive. I did an estimate and it must've been ten years ago, to develop a new process different than SAGD or different than CSS for oil sands. It would have probably cost in the order of multiple billions of dollars just to develop that new technology and that's not something you want to do without sort of having figuring out the alternatives early on. And, that's the pre-competitive research. So, you want to bring together industry players, find out which process is going to work and then whoever has got the money can then take it and make it commercial.

PMB: Now, actually this takes me back to fellow that has always intrigued me. I worked for Gulf in the late 70s. As I recall at that time, AOSTRA, the Alberta Oil Sands Technology and Research Authority was basically matching the funding of companies like Esso, sorry like Gulf and the other companies. So, on condition that AOSTRA got the patents. Now, as I recall there was exactly one company in Canada that refused to take those grants because they wanted to keep the patents and that was Esso. Do you recall that?

DINGLE: It was not so much the patents, it was that we wanted unencumbered use of the technology. So, AOSTRA would own not the patents but also the intellectual property. And, Imperial was not prepared to give away its rights in this regard. And, we had some disputes with AOSTRA because as I said, Imperial did invent SAGD and AOSTRA was the one that took that and ran with it and we thought at the time that there was some dispute as to who really owned the intellectual property rights at that time.

PMB: That's really interesting. One of the things that and I've basically taken the argument that the Underground Test Facility, that it was really proved. Although, I know that Dr. Butler when he was working for Imperial did actually propose a test and he was very happy with the results. But, my argument and I think the common wisdom that is out there, is that it was really not until the Underground Test Facility, that it was really proved.

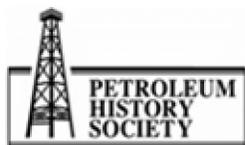
DINGLE: Well, I would agree with that. It was proved in a large scale pilot and it was proved in a fashion where other people could see what the intellectual property was. Imperial did do a SAGD type horizontal well project at Cold Lake. But, we kept the results proprietary and to ourselves.

PMB: Okay. Now, you kept the result proprietary. Did you ever patent them?

DINGLE: Yes.

PMB: You did, really?

DINGLE: We actually have the patent on SAGD. And, I know in one of my various jobs, the whole issue of who owned the intellectual property rights came up time and time again. And, I'd have discussions with various companies about that.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: What was your argument? But finally, just letting it go?

DINGLE: Well, the patent rights finally expired and we weren't prepared to apply it at Cold Lake. So, again, it was a case that we much rather see someone else. As long as our rights were not encumbered, we were happy to see other people spend the money to prove it up.

PMB: Okay, good. Going back to the good old NEP and there were a couple of things that happened around that time. Of course, the NEP was written during a period of very high oil prices and expectations of hundred dollar oil by the year 2000 and that kind of thing. So, remembering that, what was the impact of that policy on oil sands development? And, of course, as you point out in '86 wasn't it, oil prices collapsed. And, I believe that had quite an impact on the Cold Lake project.

DINGLE: There are two completely separate things. One, the whole development of NEP, the resolution of that through the Western Accord really was before I got into oil sands in a big way and I was not a senior enough person in the company to be able to speak firsthand to what impact it was. So, I was managing our conventional operations based in Red Deer at the time. And, I know that we had severely cut back on all the things we were doing because of the cash flow and the company was so crippled with NEP. I do know, like anything else, because the cash flow was crippled, the company backed off on a lot of things. One of which was the Cold Lake Mega Project at the time and also the Norman Wells development at the time was cut back.

'86 was an entirely different animal. There was the collapse of world oil prices, over supply of world production. I do know one of our senior imperial people at the time based at corporate headquarters sort of foresaw this coming. And, I did see communications taking place at the time where he anticipated that something like this was going to happen and his predictions were correct. I was in Cold Lake at the time. We were drilling up the wells for phases seven and eight when the prices collapsed. And, we literally shut off spending money in mid-well. I remember phoning the drilling manager and saying, "Stop drilling right now," because the financial impact was so great. As, I mentioned to you before we started this, February the 14th, 1986 was a grim day in Cold Lake.

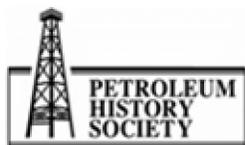
PMB: That was Valentine's Day?

DINGLE: Yes. We call it the St. Valentine's Day Massacre because my boss in Calgary phoned and said, "You can have X number of people," and on St. Valentine's Day, 1986 I and my managers got into a very smoke filled room and figured out, starting with zero, built up and organized what we had for people and it was grim.

PMB: How many people did you lay-off at that time?

DINGLE: We didn't lay-off any.

PMB: Really?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



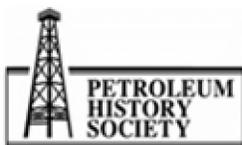
DINGLE: No. What we did was we stopped hiring. We were actually in the throes of building up staff to staff seven and eight. The numbers we got were ones that we had not quite achieved, so it was a matter of just saying, how are we going to manage within the numbers we have got and reallocate the folks that we had?

PMB: Now, after '86 as I recall oil prices moved up a little bit during the Gulf War. And, '91 I think it was there was a little spike -- and then they just went really south. And then, I think it was '97 or '98 there was that couple of months, you remember when The Economist ran that famous cover story that predicted that oil would drop down to \$5.00 a barrel and stay there into the indefinite future?

DINGLE: Well, I went through all of that. We cut developments. I know that we completed phases seven and eight and then it took a long time before we resurrected the next set of phases which were nine through ten. That took a while to do but we never stopped, because one of the things that we learned in that whole period of time was that when the prices collapse at a place like Cold Lake you've already invested the money in steam. And, you can stop pumping but why would you do that because it's money you've already invested. What you do is you continue to produce it. You sell it for the best price you can get, so as to minimize your losses and you look very carefully at what you're doing to do in terms of investing more steam in the ground. It's an engine that can't sort of be turned on and off like a conventional oil field, you can just flip the switch and stop producing. You can't do that with oil sands. So, what I used to tell my folks is, "You can't be feigned of heart in the oil sands." You've got to think in biblical terms. You've got seven fat years and seven lean years. And, that's the way you're going to run your business. And, that's the way we ran our business.

PMB: I encountered the idea somewhere. I forget my source on this; I thought it was fairly reliable. But, at that period when The Economist made this forecast about oil prices at the very bottom of the market, pretty much the day after the magazine hit the newsstands oil prices started to rise again. So, it was kind of a classic case of a bad call. But, I do recall reading somewhere that at about that time Esso was so worried that it really, deeply, deeply cut back in the spending. And, this was '97 or '98, something like that. Do you recall that? There was virtually no new investment up in Cold Lake.

DINGLE: No. Not entirely correct. We did pull back on our next phase of development which would have been nine through eleven, or eleven through thirteen. I forget what the numbers are anymore. What that says is, well we're not going to spend three, four, five hundred million dollars to develop a new plant, develop new wells and things like that. But, we never stopped drilling wells, what we call productivity maintenance wells, which is the ongoing development of new wells to maintain the facilities that we already had. We just got very careful about doing it. We did it in the most prudent fashion and then we invested in steam in the most prudent fashion. But, we never stopped. We stopped on new phase development or suspended that or slowed that down. But, we never stopped developing Cold Lake. If you take a look at the production plot for Cold Lake, you will see some ups and downs. But, it never did come to a grinding halt which would have been very difficult.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: What I find interesting about Cold Lake is that it seems to have sort of peaked at around 150,000 barrels a day and it doesn't seem to be going up. It seems to have maintained at that level for quite a number of years. Why is that?

DINGLE: It's the reservoir. We've hit all the sweet spots. We're now moving into less and less attractive reservoir and it's harder. You cannot grow the production but you can maintain the production with new investments. But, the growth really is over. The development sweet part of the reservoir is over.

PMB: So, that's kind of it. That's where you're going to be unless you discover some great new technology?

DINGLE: Yes, exactly. Or likely, develop different oil sands. We've got lots of leases with that on it rather than expecting a big turn-up in Cold Lake.

PMB: What percentage do you think might have been produced from the sweet spots, as you describe them?

DINGLE: I can't answer the percentage. That's a moving target. You'd have to talk somebody on the reservoir side. All I know is that, a year after I retired we hit a billion barrels. Which we have never accomplished with any other conventional reservoir, even Red Water which was one of the best conventional oil reservoir, it never produced that much.

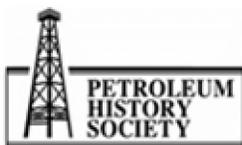
PMB: So, that was about the same time that Syncrude produced its billionth barrel?

DINGLE: Syncrude did it a couple years beforehand. But, Cold Lake's been the quiet sister behind the scene. They haven't produced as much as Syncrude but they've done very well.

PMB: That's one of the reasons I was so anxious to get this interview because nobody talks about it. When you talk about the oil sands you talk about the Suncor Plant, you talk about Syncrude. But, never anybody really seems to talk about Esso. So, I'm pleased that we had this chance.

DINGLE: And, there's a reason for that. Imperial Cold Lake is 100% Esso owned and operated. It has been very successful for us and we have no need as they have in Syncrude to advertise because we don't have a bunch of partners that are trying to tell the investment community how well they're doing.

PMB: Two questions for you and of course, your annual report gives the statistics of production every year. Would you just for the record, describe how the system works? You have the various pads, so that would be one thing that I'd appreciate you describing. And the second is this diluent, mixing it with diluent and sending it through pipelines has been a key part of your strategy for 40 years. Have you ever been worried about supplies of diluent?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: Talking about describing the process. It's one of my managers thought well, it's a pretty simple process. You put steam in the ground, you heat up the oil and you pump it back to the surface. True, to a certain extent. But, as compared to SAGD, it is the cyclic process. You put steam in the ground and then you produce back through another well. What you don't realize, is I forget what the well count is now, it was around 2,000 when I left the company. Now, you've got to manage 2,000 wells where every well is in a different part of the process of receiving steam, pumping back and all this sort of thing. So, it becomes a gigantic logistics management process of where do you put the steam so that you're not adversely affecting existing wells. How do you produce the optimum amount of oil? So by comparison, SAGD is relatively straight forward where you're just heating one well and producing back in a second well fairly close by. I forget the second part you were asking me?

PMB: About diluent.

DINGLE: Diluent, yes. Management of natural gas to make steam and management of acquiring condensate to dilute bitumen is always a concern. There are a lot of people in the company that spend a lot of time making sure that we have both in the quantities we wanted at the time we want them to be able to move the oil. Part of the research that is going on is what happens if? What happens if we don't have enough natural gas to make steam; solvent injections are another way of solving that. What happens if we don't have enough diluent to dilute the bitumen? Well, there are other ways of doing it. You can make diluent by doing a partial upgrading of the bitumen onsite. That's another way of doing it. We don't do it if we don't need to. But, that's another way of handling it.

PMB: So, you actually can do that onsite now?

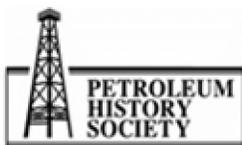
DINGLE: Yeah. Well, we know what the technologies are. Another one is emulsify it with water. That's again, a proven technology. There is a power plant in New Brunswick where they use emulsified bitumen. They fire that directly into their big generators. So, there are ways of doing it but as long as we have the diluent available to us it's still the most economical way of doing it.

PMB: Well, I think we've kind of answered this. But, how successful has this project been in terms of contributing to Imperial's oil production? If you're talking about 150,000 barrels a day or so and it's been like that for 20 years or 15 years, maybe something like that. What percentage of Esso's...

DINGLE: Well, it should be growing over time. It used to be 2,000 barrels a day when we were producing maybe 250,000 barrels a day, equivalent of conventional oil and gas. It's now 150,000 barrels a day and I don't think our conventional production is anywhere near that right now. It's slowly supplanted conventional oil and gas production.

PMB: I want to go back again because I'm sure you were active in this: The Oil Sands Task Force.

DINGLE: Yes.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



PMB: I think that was the Alberta Chamber of Resources claims credit and Syncrude claims credit for coming up with that idea. But, can you give me your perspective on that? It was in 1994 was it or '95 that that idea came up?

DINGLE: Let me give you the background. You have interviewed Eric Newell?

PMB: Well, someone on our team has, yes.

DINGLE: Eric and I are old friends from way back. At that time...

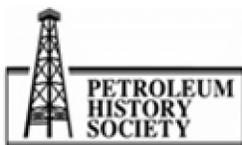
PMB: Eric Newell is the past President of Syncrude and he was involved in this project.

DINGLE: He and I worked together for my first five years with the company. We have a long history together. Eric is probably in my mind, the biggest driving force behind the Oil Sands Task Force. The reason for that is Syncrude's development was hand-cuffed by the agreement that they had with the Alberta Government. So, neither Syncrude nor the Syncrude partners could actually economically see a way to increase the development of Syncrude unless the agreement they had with the Alberta Government was changed. It was a similar story with Suncor. That was the driving force for Eric and his counterparts at Suncor and other people within the industry was to get a different, more appropriate agreement with the Alberta Government. And, one where the playing field was level for all players. It was a need to come up with that that drove the Oil Sands Task Force. That led to a long series of discussions with the Alberta Government and the Canadian Government to come up with a set of agreements instead of rules for developing oil sands, it created a level playing field and eliminated the hurdles that stood in the way of the development of places like Syncrude. That was the big key. So, it was driven by necessity on the part of Syncrude and Suncor and it was led by people like Eric with the assistance of the Alberta Chamber of Resources. But, I would say Eric and the partners of Syncrude were the main proponents of this.

PMB: Now, as I recall at the time that it was proved Ralph Klein had just come into office as the Premier of Alberta. And, I think it was also about the same time that Jean Chrétien (the former Energy Minister) had become the Prime Minister of Canada and basically they both bought the idea very quickly. First of all, Ralph Klein was the free market proselytizer, but of course Jean Chrétien has a lot of experience with the Canadian Oil Industry through his years as Energy Minister; any thoughts on that?

DINGLE: Well, I can't speak to Ralph and his vision on it and Chrétien. But, the key individual from the Alberta Government when we dealt with it was the former Energy Minister, Pat Black. And, she was the principle person that saw the need to change the existing agreements particularly for Syncrude to enable Syncrude to grow. So, it was really the agreement with the Alberta Government that drove everything behind this Task Force. So, Pat was the front-runner in the Alberta Government that led the charge.

PMB: One of my colleagues has interviewed Pat Black. So, I'm sure we have perspective on it.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



I want to ask you about a topic which I'm sure is fairly sensitive in your mind. When Peter and I were up at Cold Lake, we heard a lot about it and I actually saw a photograph from the explosion at T-Pad. Can you tell me a little bit about that, please? It sounded awful.

DINGLE: Explosion is not the word I would use. What we had is we had a casing failure which is the principal tube taking the steam down into the reservoir and containing it when you're producing back the bitumen. We had a major casing failure where the casing literally split and released the high pressure steam that was in the reservoir at the time. So, it was quite dramatic. I wouldn't call it an explosion. I would just say it was a failure to contain the pressure.

PMB: Okay. I heard that the trees were covered with bitumen and that, maybe there were 50,000 cubic metres of material that blew all over the place. But, a lot of it wasn't steam.

DINGLE: Well, it wasn't a lot of bitumen. It was a lot of steam and a lot of water and a lot of dirt. That is correct. I wouldn't say 50,000 metres. I don't know what volume it was. It was messy, yes. But, you realize that as the reservoir de-pressured and it de-pressured very quickly the material comes to the surface very quickly. It was a horrible mess and we spent as a company and I was vice-president in charge at the time, we spent millions of dollars to determine how did this happen and what are we going to do about it. So, we know the answer. We know what caused the casing to fail.<sup>1</sup>

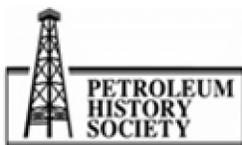
PMB: You know what caused the casing failure?

DINGLE: Yes. And, we know what we had to do to prevent this happening again. We knew what we had to do with the existing well, because we can't change their configuration and we put in procedures to monitor those wells to how we would steam them, how we would soak them, how we would manage them so we didn't have similar casing failures in the future. And, we knew what we would do with the new wells that were drilled because we put different casing in with different casing joints to prevent this happening again. So, it was like a pipeline failure. What caused it and what do we do about it; but, both for existing pipelines and future pipelines.

PMB: Okay, good. This is essentially the same message that I've had from the one senior guy I spoke to, at Cold Lake. It was a casing failure and a huge amount of effort, time and money was spent to prevent it from ever happening again. During your years with the oil sands, what would you say were the main achievements or the main highlights of your involvement? What were your personal contributions?

---

<sup>1</sup> Dingle later added: "The regulators were fully informed throughout the emergency response, clean-up and post-incident investigation, and approved the procedures we put in place to ensure that a similar incident would not occur. The public was aware that we had had an incident since, for reasons of safety, we restricted traffic on the roads on our lease during the incident. The media was aware and the Leming Superintendent, responsible for managing the incident, was interviewed by an Edmonton television station immediately following the incident."



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: Well, I mentioned when we went from 2,000 barrels a day to over 100,000 barrels a day in production, I was physically the manager onsite when we went from a pilot operation to the first six phases. Those first six phases were supposed to have been done over a ten year period. We did them in 18 months.

PMB: What?

DINGLE: Yes. But, we got really excited when they worked the first time. So, we decided let's do more of these.

PMB: What were the years on that?

DINGLE: Well, I went out there in '83 just as we had approval to do the first pair. And, we were drilling up the first pair of phases and it was going so well that we did phases one and two, then three and four and then five and six in 18 months.

PMB: That's amazing. So, at the end of 18 months how much production did you have?

DINGLE: We would have had -- I'm just trying to convert it now. Each one was about 20,000 barrels a day. So, we went from over 2,000 barrels a day up to over 60,000 barrels a day.

PMB: In 18 months?

DINGLE: In 18 months. And, we were also expanding our pilots at the same time so it's hard to separate the expansion. But, that was how successful it was.

PMB: That is amazing. Good for you.

DINGLE: Then, I was the representative on the management committee for Syncrude at the time that we had the Oil Sands Agreement, Oil Sands Task Force and we literally approved the doubling of the capacity of Syncrude. During my stay I was a research manager when we finished developing the CSS process and started moving into SAGD and solvent. And, all sorts of other "gee whiz" types of technologies. So, those are the three things that I remember very fondly.

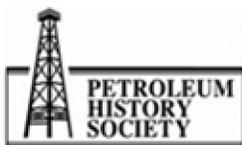
PMB: The first one was getting Cold Lake up and running?

DINGLE: Yes.

PMB: The second one was doubling the production at Syncrude?

DINGLE: Syncrude.

PMB: Doubling it from what to what?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: When I joined the Syncrude Management Committee, our share was around 50,000 barrels a day which was a quarter of it. So, it was around 200,000 barrels a day. It now has the capacity of 350,000 or more barrels a day.

PMB: And the third on was...?

DINGLE: It was all of the research, continuing the research out at our research center and in the field that continues to provide us with the new technologies we need today.

PMB: For how long were you living in Cold Lake or the Cold Lake area?

DINGLE: Four years.

PMB: Four years? From when to when?

DINGLE: From '83 to '87.

PMB: Okay.

DINGLE: Then I came back as the Cold Lake Engineering Manager. And, then I was the Research Manager which again, I had a big involvement in oil sands. I took a six month hiatus as the Technical Manager for the total company [Esso Resources] and then became the oil sands vice-president.

PMB: Terrific. Now, you've mentioned a number of people that we've already interviewed like Pat Black and well, we wish we could have interviewed Roger Butler. But, we've interviewed a few of his disciples like, Harbir Chhina and Chi-Tak Yee whom I'm sure you know...

DINGLE: Yes.

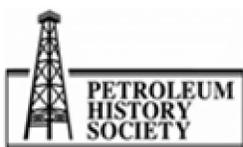
PMB: ...very well. Who else that you can think of would be really great people for us to interview? Who were pioneers in this?

DINGLE: Well, as far as I was concerned the principal author of Cold Lake was Bob Peterson. He was the vice-president that led the charge that got the project approved. And then, he took over as CEO of the company.

PMB: I've had some email correspondence with him and he says that next time he comes to Calgary he will get in touch with me. I hope he remembers so that we can arrange an interview.

DINGLE: Two players, there was the chairman who led us into Syncrude and I can't remember his name off the top of my head.

PMB: He died about two years ago.



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: He was the author of Imperial Oil in Syncrude. And then I would say, Bob Peterson was the author of us getting in to Cold Lake and those are the two individuals.

PMB: He's definitely on the top of my list. Role of government in oil sands development, and I know that even during your period it's been fairly mixed. The NEP was sort of the devil but then there were other good things like the Task Force that were very positive for the industry.

DINGLE: Again, NEP precedes me. I can't speak to that. But, I've always been very happy with the Alberta Government and its positive approach to developing the oil sands. Up until the time I left, they've been very supportive of developing the oil sands.

PMB: The regulatory process. I heard from somebody I interviewed a couple of weeks ago that he was unhappy that it took so long. He said they were trying to get a SAGD project up and running and their application they made four years ago (I think he said four years)...

DINGLE: I can't speak to what it is now but it was never a problem when I was there.

PMB: Okay. So, you found that it was always very effective?

DINGLE: Yes.

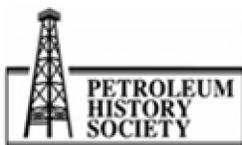
PMB: You went through the ERCB process or then it was later the EUB process and now it's ERCB again and soon to be EUB again, is my understanding. They are actually planning to move back to the EUB.

DINGLE: No, we never had any serious problems with the Alberta Government. The involvement of the Federal Government up until the time I left had not been a big issue because it wasn't a federal process up until that time.

PMB: You mentioned CONRAD as an organization that you helped to found and which has been very influential. Can you think of any others?

DINGLE: Well, I was involved with CONRAD. I was involved with the Canadian Heavy Oil Association, CHOA. For a while there I was the chairman of the Alberta Energy Research Committee which allocated energy research dollars to various projects including oil sands. So, those are the principal -- I have been the President of the Board of Directors for the Petroleum Recovery Institute which is I would say a think tank developing some recovery processes. I'm just trying to think of them all now, those are the principal ones.

PMB: Now, as an operations guy the discussion of First Nations rights and treaty obligations and those kinds of things often comes up. To what extent were you involved in those discussions? How well do you believe that Esso and Imperial handles those issues? What more can you say about it, please?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: I can't speak to Syncrude because it was managed by the Syncrude Management. I do know that I did have a fair amount of involvement with the Cold Lake First Nations when I was in Cold Lake and then as vice-president I would keep my finger into it. It seems to have worked reasonably well at Cold Lake. We seem to have dealt reasonably well with the Cold Lake First Nations in terms of advancing the Cold Lake development. As far as Syncrude goes, again the noise you hear on the news these days is more recent than I.. [trails off]

PMB: One of the things that has really happened up in the Fort McKay area, of course is that there are a large number of extremely successful First Nations companies that have developed. Did that happen to a large extent in the Cold Lake area?

DINGLE: We had a program of trying to facilitate the development of the Cold Lake First Nations. For the longest time and it may still exist, they used to provide the services for collecting our waste on the site or managing all of our waste management bins. There were a number of areas they were involved in and to what extent those things are still going, I don't know.

PMB: Were there First Nations people working on the rigs, for example?

DINGLE: Yes.

PMB: So, they really did generate a fair amount of employment?

DINGLE: There is a particular well servicing company in Cold Lake which is First Nations run and operated and we used to give a lot of our business. So, yes there has been a lot of involvement. Maybe, I would say by and large it has not been as successful overall as I would like. There are a variety of reasons for that. But, I think we just keep working away at it.

PMB: And, the environmental questions always come up. What can you say about that?

DINGLE: I spend a lot of time worrying about the environment. But, as far as I was concerned we did as good a job as anyone could do. You cannot drill holes in the ground and you cannot produce oil without making some disruption. But, I think we did as fine a job as possible.

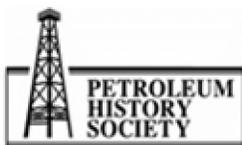
PMB: And, the carbon, the CO2 issue?

DINGLE: Well, I'm not going to go into that.

PMB: Reclamation, biodiversity, ground water, surface water?

DINGLE: Again, I think we've done everything we could to safeguard all of those things.

PMB: Economic costs and benefits of oil sands development: in your view, where do they stand as an engine of growth?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: I think the one message you want to take away is that, Canadians need to understand how much of the balance of payments of this country is dependent on the energy business and now primarily the oil sands business. It's huge, absolutely huge.

PMB: It's really an engine of growth for the whole country.

DINGLE: Exactly.

PMB: I don't know how familiar you are with the IUA Report that came out a week or so ago?

DINGLE: Yes.

PMB: Okay.

DINGLE: I try not to spend much time on the source stuff anymore.

PMB: Well, that was kind of amazing actually. But, we had a friend over last night and he was with a senior guy at Cenovus and he said, "The reality is, is that we are having to eat these fairly huge differentials and those issues are only going to get worse." You may have heard that the pipelines are now full?

DINGLE: Yes.

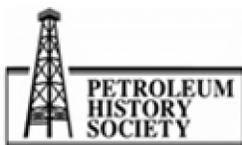
PMB: Yet, companies like this fellow's company are still doing six, seven billion -- his was a seven billion development. So, how exactly are they going to export that stuff. And, I'm not asking you that question. I'm speculating wildly here. Media coverage and I know because I've done a lot of research to try to find out information about the Esso Cold Lake Project and there isn't a lot. What is your view about the impact of media coverage mostly of environmental views on this, how has that affected the Esso Cold Lake Project or has it affected it at all?

DINGLE: I would say it's been relatively quiet at Cold Lake. Again, the advantage of Cold Lake is it is 100% operated by Imperial Oil, so we can control its development or its story reasonably well. We also have not caused any major problems. There have been a few glitches along the way. T-Pad is a good example. But, we have managed those and been very transparent. We've talked to the regulators and the media about what's going on.

PMB: Well, T-Pad was a classic. As far as I can tell, there was nothing covered in the media that talked about that.

DINGLE: The reason for that is it was an operating problem. It didn't hurt anybody. It didn't cause any significant environmental damage. It's a hazard which we've dealt with, so what's to report?

PMB: Fair enough. Anything you want to say about your life, your career or your retirement to kind of round out this interview based on whatever thoughts you have?



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.



DINGLE: I had 38 years with the company, loved every second of it. Probably the best job I ever had was being the Cold Lake Operations Manager. It was something that I would willingly do again. It was a lot of work but a lot of fun as well.

PMB: Sense of achievement?

DINGLE: Yes, very much so. And, I have been happily retired for five years and I have no desire to go back to work.

PMB: You're living primarily in the Sarnia area? Is that correct?

DINGLE: No, no. I have a house on the ocean in Nova Scotia.

PMB: Okay. Then you come to Calgary for the winter? There are those who would say, "You're crazy? Why aren't you going someplace warm?"

DINGLE: I can always go down and mooch off people if I want to go somewhere warm.

PMB: If you want to go Mexico. Do you have documents or photographs that you would be willing to contribute to the Petroleum History Archives?

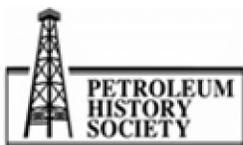
DINGLE: I saw that question. I don't really have much that isn't already in the files.

PMB: Anything we've missed?

DINGLE: I don't think so.

PMB: I'm going to thank you for giving us this time. It was a lot of fun.

[END OF RECORDING]



Sponsors of The Oil Sands Oral History Project include the Alberta Historical Resources Foundation, Athabasca Oil Sands Corp., Canadian Natural Resources Limited, Canadian Oil Sands Limited, Connacher Oil and Gas Limited, Imperial Oil Limited, MEG Energy Corp., Nexen Inc., Suncor Energy and Syncrude Canada.