Darwin – Pauline Cass

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Speaker: Pauline Cass

Pauline Cass: So, my name is Pauline Cass and I'm appearing on behalf of myself as a community advocate. Hence, the shirt change. I've also e-mailed in, the link and the data house for core site with the advertising the Shell gas investment opportunities for the government's ... on the website.

Hon. Justice Pepper: Ah, thank you. Alright, thank you very much. Thank you.

Pauline Cass: ... so that went up, there was one that went up in February and the latest was updated on the first of November. So just a few months ago, advertising the imperial gas memos. There's a few of them listed there.

Hon. Justice Pepper: Alright. Thank you.

Pauline Cass: It's very concerning. Okay, now, onto what I'm speaking about today. Thank you for the opportunity to be here. I've reviewed the draft report and I can really appreciate all the work that went into compiling that report. It's very extensive. You've covered, I'm going off script a bit, You know, you've covered so many aspects and angles and issues and things and I commend the inquiry for all that work.

So, I've also found that the report creates more questions than it answers. You've made 120 recommendations in the report. Of those, there's some that I wholeheartedly support. Such as, the reversal of onus of proof, I think that it's very important. Also, the recommendation where if the pastoralist has issues and goes to court, then they might be held liable for the costs. That's another very important recommendation.

There's other recommendations that I take great exception to such as, not granting the right of veto to land holders, I really feel that land holders should be able to have a say in what happens on their land and a mandatory agreement is really no agreement at all. So, there's also, on the whole, most of the recommendations are on the right track, but they don't all go far enough. One of the main things that I've picked up in the recommendations, and the ones that I really liked is, they're all addressing production licences and the productions stages and they're not aimed towards the exploration stages. But there's really no difference between an exploratory well and a production well. They still drill down through the aquifers. They still pump

the chemicals in the sand down to do their fracturing. So, the conditions that apply to production should also apply to exploration. In many ways, an exploration well carries more risk than a production well because they're exploring. They're still learning. So, the recommendations ... pretty much all of them refer to that production level ... they need to encompass the exploration level as well.

The report identified 115 risks, and these risks are a significant concern. Reducing or mitigating a risk is not the same as eliminating the risk or making fracking safe. Defining low risk as people losing access to their water for two weeks is misleading. That to anybody, is not a low-risk gain without their bore water for two weeks. If you were to ask anyone reliant on their bores for their bore water, I'm sure that going without fall water for a day is a major imposition. And how do you make good on that? Trucking water in is really not a solution if your whole system is setup to run off your bore. So, saying things are low risk, I think we've got different definitions of what that low risk is. I'm sure many people have a different definition. So, Territorians clearly and repeatedly stated that any risk to our water is too great, and completely unacceptable. Especially ... low risk that is just as unacceptable as a high risk; it is still a risk.

Many Territorians have been expressing to me, that overwhelming disappointment over not having the staunch opposition to fracking recognised in the draft final report or in Coffey's social impact assessment. So many people have voiced their discontent and disillusionment with the inquiry due to this, and that's a shame because you guys have done a lot of work, you've done a lot of consulting. And you've been given a lot of feedback and the fact that that wasn't included in the start of the report ... chapter two and three is it, where you discuss what work you've done and what people have said. In the interim report, you spoke about the community's overwhelming opposition that you came across, and that was totally left out of this draft report.

Hon. Justice Pepper: That will be put back in.

Pauline Cass: Thank you.

Hon. Justice Pepper: I can tell you that right now. I entirely accept that criticism and that will be put back in.

Pauline Cass: It's such a shame. There's so many good things, the report ... and there is a lot of good things in the report and that was just one blemish that so many people picked up on and felt was unfair. And it also put people off from wanting to participate in the inquiry, because it's like they have been to the consultations, the work centre submission or have done whatever they've done to contribute. Why should we bother doing it again if we weren't heard last time? Obviously not everyone feels like that, I'm here.

Hon. Justice Pepper: Exactly

Pauline Cass: So, that's great that it's going back in, thank you very much. There's many more issues that I would have liked to have raised, but we'd probably be sitting here for days on end, so I'm going to focus on two topics. The topics of flooding and fracturing.

So, flooding. I've given you each a copy of this presentation so you can follow though with the maps that are in here. The first map that I've got is map one, which is from the report, just so you can see as you're looking at the other maps with the boundaries of where Beetaloo are. As you know, as you're experiencing today, our annual rainfall is seasonal. It happens over the space of a couple short months every year. So, it leads to a very uneven weather map, if you look at maps by season as opposed to an annual map. We have negligible rainfall in the dry season and the wet season is extremely wet and results in pretty much all of the top-end flooding. And you would have seen that as you were flying to Daly Waters. Did you fly or drive? Driving would have given you a more close-to-the-ground experience, but flying over the top end for your recent consultations you would have seen the extensiveness of what's underwater.

In the draft final report, you've got this map here, which is the annual map and it shows that where the Beetaloo is, is that light blue colour. It's not really reflective of how a map would like if you took a week of monsoonal weather. So, in the monsoonal weather you can see that in the Beetaloo region there is quite a lot of rainfall. And that heavy rainfall from a week of monsoon weather is shown by the multiple weather warnings, storm warnings, flood warnings, thunder storm warnings, wind warnings that occur in the wet season. Every year ... it's not just that this year has been exceptionally wet, it's every year. I have driven through there with my kids and been stranded in towns like Dunmarra barbecues you couldn't continue any further north and you have to stay at the roadhouse until the rains go down. So, maps fourteen to thirteen are just the storm warnings and flood warnings that I could find for this wet season and as you can see, there is quite a few warnings that went out in that time. So, I'll let you browse through them more at your leisure. Sorry, the printing's small ... I tried to fit them to a page.

Hon. Justice Pepper: It's alright, thank you.

Pauline Cass: So, there's regular severe storms and floods that happen every wet season, every year pretty much. They cause their own issues and these issues are also an annual occurrence. Roads are becoming passible due to the water levels. Creeks go up and ... not even where there are creeks ... even flash areas and low areas of land become totally submerged in the wet season. And occasionally the road surface will totally wash away. The road will laminate, and that whole top beechman sheet will go. If you add to that the weight of trucks and road trains they do major damage to our road surfaces in the wet season just through the weight of them over the wet underlying surface of the roads. This will make access to the wells and to the infrastructure for inspections almost impossible. It will be highly difficult to get out to a well to see what's going on if you've got to get your vehicle

across a river that's flooded several metres. And flying in by helicopter is not always possible either. There's not always somewhere dry to land.

Another issue that we have with our flooding and with our wet seasons is dams overflow due to the amount of rainfall. This makes fracking ponds, an unacceptable risk. We heard Origin this morning speaking about how they don't want to use storage tanks. Storage tanks do have their issues. They can float away if they're not properly anchored or if they're not full. But dams equally or more so hazardous. Where it might be great for a pastoralist to have his dam overflow, we definitely don't want fracking dams overflowing. The consequences of that would be catastrophic for our countryside.

To propose that fracking will only take place in the dry season is misleading. You can't pack up your well and take it away and bring it back when the dry arrives. It's there permanently. To say that we're not gonna frack in the dry season doesn't fully account for all the risks of having the equipment, having partially prepared sites, having the wells all exposed over the course of the wet season, and vulnerable to failure as a result. How will they cope if they're submerged under water for long periods of time. Nobody seems to know. That's my discussion on flooding.

Now, faults and fractures. There was a new report released last month. It came out in January 2018 called Spatial and temporal variation in detrital zircon age provenance of the hydrocarbon-bearing upper Roper Group, Beetaloo Sub-basin, Northern Territory, Australia. Now, this report attempted to map the faults in the Beetaloo basin, and from that report, I've called out map 14, and map 15, which shows they attempted to map the fault zones, and the fault lines in the basin. This map is far from complete.

They've done a pretty good job of trying to map all of those faults and fractures, but they've only really picked up the most obvious major ones. To demonstrate and highlight the difficulty in picking up faults and fractures. When they were drilling, the Amungee NW1H well in Beetaloo, they actually came across a fracture. They drilled through a fracture, and that fracture wasn't known to exist until they drilled through it. That's shown in the draft final report. Sorry, I forgot to print that map out. It's on page 81 of the draft final report, figure 6.5. That very clearly shows the fracture that they encountered. The reason why they encountered that fracture, and the reason why, even though these maps from these latest reports show a lot of fractures, it's not extensive, it's not all the fractures, is because geologically speaking, there is no such thing as solid rock. It doesn't exist.

The sub-surface is a maze of fractured and faulted material. The Earth has gone through numerous upheavals and uplifts and all sorts of different processes over the period of the Earth creating, and it's resulted in this maze of rocks. In conventional rock strata above a conventional oil or gas reservoir, the materials developed at impermeability that can be observed and it can be trusted to remain as the oil or gas is extracted. The very fact that that reservoir of oil or gas exists as a reservoir is because of the impermeability of that overlaying rock strata. In some cases with these

conventional wells, the reservoir requires water injection to replace what's extracted to maintain the integrity of the reservoir and aid the extraction, but in most cases, that observed sealing quality of the overlaying strata of conventional gas reservoir remains intact.

The only issues they have with those conventional reservoirs, really, is the issues around the well engineering, hence the focus in the advice given to you by engineers has all been about how wonderful the well engineering is, but that completely misses the point. All the problems that will be encountered in unconventional wells. With your conventional wells, you have that impermeable layout. That is why that reservoir exists in that place, and that is why those engineers have focused on the well integrity. A sceptic might say that's intentionally being done with that focus on the wells, because the proposed fracking process that they're talking about doing with the shale gas is entirely different to conventional gas.

In fracking, there's no proof of impermeability of overlaying strata. The gas is trapped in the shale rock. The shale rock is the impermeable thing holding that gas, and once it's fractured, it's no longer impermeable. You can't observe the impermeability. There is no reservoir where you can say, "Yes, there's an impermeable cap holding that oil or gas there." It doesn't exist in unconventional oil and gas bodies, such as the Beetaloo. Trusting that that impermeability exists over shale rock. It's really not an acceptable position. Faults and fractures must be expected as the norm above shale layers proposed for fracking. All and every geologist will say the same thing. They'll all attest to it, it's for this very reason that you can't get a guarantee from the fracking companies as to the integrity of that overburden as to the impermeability of that rock.

Qualified assurances aren't good enough. We need border tight guarantees, proof that impermeable layer exists, and they can't prove it, because the impermeability comes from the shale itself, and they're gonna be fracturing that. The draft report supports my presentation today. The draft report states, "With all potential on shore shale gas areas in the NT, there is very little information about the nature of deeper ground water systems and moreover, there is limited understanding based on deep exploration drilling to date of the deeper geological systems in these basins, and that is the limited understanding. The impermeable layer can't be found to exist if it doesn't exist.

The report also found there is significant potential for accidental releases, leaks and spills, hydraulic fracturing chemicals and fluids, and flow back and produced water ... I'm quoting the report, that could lead to contamination of nearby surface water and sea pitch through soil profile into shallow aquifers. Now, that significant potential of accidental releases is one of the reasons why flooding is going to be such an issue with the waste water, ponds, and even to a lesser extent with the tanks. That was further addressed in the risk assessment matrix in Appendix three, which was unable to determine the risk of unacceptable contamination of ground water.

Hydraulic fracturing for shale gas can not be permitted to occur under these circumstances. These circumstances of unsurity about that impermeable layer that's quite ethical, and also the unsurity about the flood levels, and how are the waste water ponds going to hold that water? It's all very good for Origin to say that they're gonna build the dam walls extra high. Dam walls can erode. We've seen problems with waste water ponds in almost everywhere else where fracking has occurred, and any risk, and I've said this so many times, Territories, we all say this. We're constantly saying this, and we really need to be heard by the government, by everybody, that any risk to our water is just not acceptable, and not worth it. Any risk to our water is far too great, and it just won't be tolerated. It can't be allowed to happen. It can't be allowed to happen. Thank you very much for your time and thank you for listening.

Hon. Justice Pepper: Thank you very much, Miss Cass. Do we have any questions? Yes, Professor Hart.

Prof. Barry Hart: Thanks very much Miss Cass. Oh, thanks. Taking up the point about flooding.

Pauline Cass: Yeah.

Prof. Barry Hart: You've obviously read the report.

Pauline Cass: Yes.

Prof. Barry Hart: So, am I correct in assuming that you don't think we've said enough? We certainly indicated the potential of floods. We've got a map there.

Pauline Cass: Yeah. I think, as our climate changes we're going to get wetter. We are getting wetter. It seems like every year we're breaking new records in wetness in rainfall. I really don't think... it's such a hard thing to measure with the floods. They go up really quick and they go down really quick so you can be there today and it can be extremely flooded. You can go tomorrow and it might just be a little trickle and ankle deep.

Unless those flood levels are constantly being monitored, which they're not constantly monitored, it's very hard to actually know the exact level of flooding unless you talk to the local people. The local people have been speaking about the flooding and sometimes... for people that aren't living there, for people that haven't experienced it, it's really hard to comprehend.

It's hard to comprehend how you can go somewhere and have it look like an absolute desert and go there a short time later and it looks like an inline sea. I just really don't think that you guys have fully comprehended the extremes of it all and the quickness of it all.

It only needs to be a quick flood to wash a whole heap of contaminants through the countryside.

Prof. Barry Hart: We'll certainly take that into consideration. I don't agree with you that we haven't... that we don't know about that sort of thing. We may not have articulated it properly-

Pauline Cass: Yes.

Prof. Barry Hart: ... or well enough. We've got, I think bureau of Met might disagree with your assertion that things are getting wetter. We've got some information there. We got the information-

Pauline Cass: Meaning climate scientists would say otherwise.

Prof. Barry Hart: Oh, come on. For exactly the reason that you brought up, the climate is changing. It's going to be important. We're talking about the potential of an industry that's likely to be 40, 50 years of moratoriums so we've taken that into consideration. I'll take your point that maybe we haven't articulated well enough.

We certainly put that in because our whole premise was very much yours, that if government is looking at locations, not just the gas companies, the government turns the location they have to consider, even in Beetaloo, in the Beetaloo sub basin they have to consider where floods are likely to occur. So we'll look at it again and strengthen-

Pauline Cass: The other thing is they're going to be altering that landscape and that water flow as well through the process of fracking but looking at an annual average taken from the 60s to 1990 isn't necessarily the most-

Prof. Barry Hart: But that was just to really show the differential from North to South.

Pauline Cass: Yeah.

Prof. Barry Hart: We've got other information there in terms of flooding and as I say, we'll look at strengthening that.

Pauline Cass: Thank you. Yeah. It really is something to consider.

Hon. Justice Pepper: Any other questions? Yes Doctor Andersen.

Dr. Alan Andersen: Yeah. Thanks. Thanks Miss Cass. Just a comment on... a couple before hand, a comment on experience here. I've lived in the Territory for 32 years-

Pauline Cass: Yeah.

Dr. Alan Andersen: I think I do have an idea the seasonality and rainfall and other family members have also lived in the NT for a long period of time I think we're doing... I just wanted to pick up on your comments on risk.

I think it's a really important point. You make the point and it's a very valid one, that a low risk is not no risk and absolutely true. I think we state that in the report.

I do want to query you about your comment that the Territorians and if something is of real value to the like water, any risk is just totally unacceptable.

Pauline Cass: Thant's right.

Dr. Alan Andersen: I just wonder if that is the case in the sense that, this example, you'll be driving home after this. There's a real risk that you'll get killed in a car accident.

Pauline Cass: Absolutely.

Dr. Alan Andersen: Then you'll do it?

Pauline Cass: Yes.

Dr. Alan Andersen: And so, I think territorians do have an idea that there is, that they can never guarantee anything.

Pauline Cass: No. But there is a big difference between me having a car accident and me personally dying, which is one person, or affecting an aquifer or a river. The aquifers under the Beetaloo fly north and they discharge into the Roper. They discharge into the Daly. They discharge into the Katherine.

That surface water from the rain all flows into the Victoria River. Now, there's a big difference between me crashing a car and dying, that's one person impacted to having a whole river system or several river systems or multiple aquifers affected by an industry that wants to extract gas to export it overseas.

Really, there is no benefit for us out of that. So, why would we risk something that's risking it for all the people, all the animals, all the plants, all the sub terrain little wiggly things, everything. Why would we risk that for something that is not needed?

I need to get home to my kids and I'm willing to take the risk for myself because that is only me. I'm not willing to take a risk that impacts the entire Territory and that is what we're talking about and that is the difference.

Thank you.

Hon. Justice Pepper: It's a very good answer I might add. Any further questions? Just a... having said this I do accept what she said, it's not in the... it's not clearly, it's implicitly in the draft final report. It's not clearly expressed though, I think, in a satisfactory way.

I did say or rather I should say, it has been said in the summary of the draft final report that it is to be noted that the strong antipathy surrounding fracking demonstrated during the first round of consultations held by the inquiry was also present during the second round of consultations.

For a sizeable majority of people attending the public hearings and the community forums, the consensus that hydraulic fracturing for on-shore gas in the NT is that it's not safe. It is not trusted and it is not wanted.

It is there, but I accept that it needs to be more clearly stated in the body of report and we will attend to that.

Pauline Cass: That would be-

Hon. Justice Pepper: But it certainly was stated expressly and in my view, quite clearly in the summary of the draft final.

Pauline Cass: I'd like it in the Main as well, so thank you very much.

Hon. Justice Pepper: Thank you. So you've given your, a copy of your papers to the task force?

Pauline Cass: I'll give it to them right now.

Hon. Justice Pepper: Thank you very much. Thank you Miss Cass again-

Prof. Barry Hart: Could I just add, I've just downloaded that paper by Yang.

Pauline Cass: Excellent.

Prof. Barry Hart: I've sent it around to you all so we've got it. Thank you very much-

Hon. Justice Pepper: That is how efficient we are here at the inquiry.

Prof. Barry Hart: How efficient we are.

Pauline Cass: Don't forget Kate's got a email with the links.

Hon. Justice Pepper: Yeah, no. I'll be very keen to have a look at that. Team, I might just say, thank you as well, on behalf of all of the panel for your continuing thorough and dedicated submission and participation with this inquiry. It has been very much appreciated.

Pauline Cass: My submission is still in progress and you should get it tonight or tomorrow.

Hon. Justice Pepper: That's all right. That's fine.

Pauline Cass: Thank you.

Hon. Justice Pepper: Thank you.