

DRAFT WATER RESOURCES (JERSEY) LAW 200-
TRANSCRIPT OF EVIDENCE
PROVIDED TO THE VIBERT SCRUTINY PANEL
BY
GEORGE LANGLOIS, WATER DIVINER
LEWIS DE LA HAYE, WELL DRILLER

PUBLIC HEARING SESSION ON 26th JULY 2004

CONTENTS

1. Background history - lack of response from Public Services and BGS
2. Deep groundwater resources
3. Experience as a water diviner for 45 years
4. Cannot detect non moving shallow top layer of water
5. Deep water resources up to 600 feet
6. Rozel source
7. Respect for dowsing in France
8. Licence for drilling bores
9. Lack of research
10. Deep bores for emergency purposes
11. Saline intrusion
12. Drilling Map
13. Willing to pass information to Public Services
14. Records of drilling
15. Proof of deep water resources
16. Drilling experience over 25 years
17. No experience of wells drying up
18. Majority of bores below sea level - no saline intrusion
19. Trace underground streams
20. Map of bores
22. Costs of drilling
21. Rate of flow from bores
23. Drilling deeper levels
24. Underground streams affected by moon
25. Groundwater connexion with France
26. Sussex Water Authority experiment in Pyrenees
27. Lack of recognition over years
28. Roman Map
29. Planned borehole on Les Ecrehous

- 30 **No Derogation of neighbouring bore holes**
- 31 **Domestic boreholes feeding a number of properties**
- 32 **Demand for commercial boreholes**
- 33 **Examples of bores with strong flow rate**
- 34 **Artesian wells**
- 35 **Flow rates up to 10,000 gallons an hour**
- 36 **Grouville Hill well**
- 37 **Further examples of artesian wells**
- 38 **How can you pass a law and charge for water that they say doesn't exist?**
- 39 **Cost of fitting meters**
- 40 **Special consideration being given to the Jersey New Waterworks Company.**
- 41 **Driving people to use mains water instead of boreholes - further stress on mains supply**
- 42 **No compensation in the event of revoking a licence**
- 43 **Use of the deep borehole water to supplement mains supply at St Ouen's**
- 44 **Reports of past meetings with PSC**
- 45 **Warm water sources**

SENATOR LE MAISTRE: If you want to sit together then that's fine. I have to start by reading out the notice which you will find in front of you. It reads as follows,

"Shadow scrutiny panels have been established ..."

So, may I first of all welcome you? Thank you very much for coming this afternoon and perhaps we could start with Mr Langlois. I hope you don't mind, as you are scheduled in at the moment because you simply wrote in to request an oral submission so I think that perhaps it would be right for me to invite you to make your submission first and then we can follow on with questions. Are you happy with that?

GEORGE LANGLOIS: Simply I requested this because the amount of times I have written into the water department of public services.

SENATOR LE MAISTRE: Could I just stop you? You may have to lean forward because this is being recorded and it will be difficult for the transcribers.

1. Background history - lack of response from Public Services and BGS

GEORGE LANGLOIS: Well, during the past few years I have been asked to put written information into the water department on public services and most times we have just been ignored and this is why I have got a lot of mail copied here from the Evening Post over the years, from agricultural committee, we've had meetings and we've been ... going to bring specialists over from the other side

and offered to do free bores like in the Ecrehous and things like this and then hand it over to the States afterwards and every time it was ready to do, like the one on the Ecrehous, the army was coming in. They were going to supply a landing craft. It was all going to be done free, as an exercise, and then handed over to the States. At the very last moment it was blocked and we've had this many, many times.

2. Deep groundwater resources

I've got a load of mail there where all this has happened over the years because the British Geological Survey, who works in with public services at the time and the water department, they'd been getting tens of thousands of pounds out of the States to be able to say, "There's no water below 75 feet and it's only rainwater. There's no other water". Now, there is a lot of other water. There is a second layer under the island. We have a lot of streams coming from east to west. We've tapped them. Probably around 5,000 so far. Anything down up to 600 feet deep and some of them are pressurised. They flow over the top and just flow out to sea or go to waste and this is happening all over the island. There's no shortage of water in the island and there hasn't been. Not what we find anyway.

I cannot feel what I call the puddle, which is the surface water, the rainwater, which does run dry. I can't feel it. There's no feeling at all but I feel movement in water which is down deep and I think --

DEPUTY BAUDAINS: Sorry to interrupt you there but for the benefit of the recording, this is as you're -- as a water diviner you're --

GEORGE LANGLOIS: As a water diviner that's what I'm doing here this afternoon - as a water diviner.

3. Experience as a water diviner for 45 years

SENATOR LE MAISTRE: Could you just explain, for the benefit of the panel, what your experience has been over a period of years? You've been water divining for quite a few years.

GEORGE LANGLOIS: Forty-five years.

SENATOR LE MAISTRE: Forty-five years.

GEORGE LANGLOIS: And my father and grandfather did it before me.

SENATOR LE MAISTRE: And you've also been involved in drilling, presumably, have you?

GEORGE LANGLOIS: No.

SENATOR LE MAISTRE: You've just been water divining? I just want, for the record, to establish that.

GEORGE LANGLOIS: Mostly Lewis, next door to me here.

SENATOR LE MAISTRE: Has done the drilling?

GEORGE LANGLOIS: I advised to do the drilling because he's one of the best in the island.

4 Cannot detect non moving shallow top layer of water

SENATOR LE MAISTRE: Could you then elaborate a little bit on the question because we're looking at the water law and the need for the water law obviously and I think this is a very good opportunity for us to ask you to explain to us some of the aspects that have been put to us in terms of quality and stress and so on.

On the question of water in the island, obviously, you mentioned the top layer of water which is rainwater which you would say is difficult to detect --

GEORGE LANGLOIS: I can't detect it.

SENATOR LE MAISTRE: -- in terms of --

GEORGE LANGLOIS: I can only detect movements and the movement in the water. It's the deep one down below.

SENATOR LE MAISTRE: Could you just explain, because I won't be devil's advocate but it's *temps passé*, as they say, water diviners could detect movement even for shallow wells. Is that still the case?

GEORGE LANGLOIS: Yes, because in streams you get what we call "heads" and in the old days, in my father's time and grandfather's time, before the boring machines were available, you had to go down by hand or blast and so you found the heads, which are the cracks coming up towards the surface from the streams, and then you'd tap down to those and you'd get pressurised water coming up into a well, into a stone well which is quite a lot of in the island.

SENATOR LE MAISTRE: So, if we look at the movement - this movement of water, would you say in percentage terms, is this half the number of bores that we've had in the island or is it greater or less than that?

GEORGE LANGLOIS: Oh, greater.

SENATOR LE MAISTRE: Greater.

5 Deep water resources up to 600 feet

GEORGE LANGLOIS: What we've done in the last few years, since we've had boring machines and things like that, it's all deep stuff. It's all anything up to 600 feet down and it's free of a lot of the chemicals, a lot of the nitrates and stuff like that. Doesn't get any at all. And some of it is pressurised. The British Geological Survey say it cannot be pressurised as they say that it is only surface water but they've grudgingly admitted the last couple of years or so that there is other water.

6 Rozel source

For instance, on top of Rozel we've found water now from the old volcano. A couple of years back I found one of the blowholes on some land at the top of Rozel hill on an old farm and we put a bore down, or Lewis put a bore down, a hundred and ninety feet we said the water was and we stopped into this crack which was a lava crack. Lava had folded over the top, not the head. The first lot of water came out with quite a bit of sulphur in it and it burnt the grass around, didn't it, a bit? And after pumping it out for a day or two the water became clean and it's been clean ever since and it's flowing over the ground. It's going down the valley Rozel and out to sea and like that there's quite a lot of water around that area from the extinct volcano which a lot of it is just flowing away.

So, there is no shortage of water on the island it is there if you want to dig it out or pump it out and we get this in different parts of the island, different waters.

7 Respect for dowsing in France

SENATOR VIBERT: I'd just like to ask, if I may, when you actually go down the depths that you go down and you get this kind of water and you actually then read from the scientists, if I use the phrase, that there isn't water there, how do you react to that kind of information? Do you personally know that you've tapped it and it's there?

GEORGE LANGLOIS: You see, I work in Normandy so it is (inaudible). We are professionals over there. I belong to the British Society of Dowsers. I have my number to operate in England. I'm a professional over there. But over here certain professionals like to call us amateurs and that way they can say, "Oh, I don't have to take notice of you. You're just an amateur". Even though they don't know what they're talking about and this is the problem.

8 Licence for drilling bores

SENATOR VIBERT: Have you got any idea the kind of tests you feel ought to be carried out for this matter to be really properly and effectively resolved?

GEORGE LANGLOIS: I reckon people should have a license for one thing. Especially one or two of the boring people over here. They pretend and you get a lot of bores put down where there's no water below and this is not right because people get taken for a ride.

9 Lack of research

SENATOR VIBERT: What I was meaning is that clearly, in your view, there hasn't been sufficient research done to prove the fact that the water table in Jersey is under threat.

GEORGE LANGLOIS: Well, officialdom has never liked to try and get it proved.

SENATOR VIBERT: Can I ask you what you consider to be an adequate testing proposal? In other words, would it be to drill across the island 10 to 15 bores very deep to really prove the point that the water is there?

10 Deep bores for emergency purposes

GEORGE LANGLOIS: I reckon that's, in my estimation, that every place should have a deep bore of this clean water for the sake of emergencies. If you had problems of atomic explosion or something like that coming in the surface water would be no good it would be contaminated. The reservoirs would be no good they'd be contaminated. You want to be able to bring up deep water which will keep the population going.

SENATOR LE MAISTRE: Could we just bring in Mr de la Haye in terms of your drilling experience because clearly you have extensive experience throughout the island. Would you say that there are areas of the island that are less likely to produce water in the quantities you've been talking about than others? Are there differences, have you found saline intrusion, for example, in a number of areas? Could you give us a feel from your experience?

11. Saline intrusion

LEWIS DE LA HAYE: Saline intrusion exists along Rozel Harbour and Beach area but all the way along Grouville Bay from Gorey Slip to Seymour Inn about a mile and a half, that sand is 60 foot deep and the water oozes out the coast on the surface of the beach. Therefore you've got that 60 foot of water going out to sea and quite a lot of boreholes inland such as behind Grouville Church which are overflowing (inaudible). As Mr Langlois was saying, I've never seen any evidence that the water table is disappearing (several inaudible words). But going back to the deep water that Mr Langlois was talking about we've experienced that over and over again. That's spot on.

12 Drilling Map

Can I just show you the amount of drilling that we have done so you get some idea?

SENATOR LE MAISTRE: Yes, certainly.

MR LANGLOIS: Again, one of the things with deep water is pressurised, a lot of it, and it does overflow which you don't get from static water.

13 Willing to pass information to Public Services

DEPUTY RONDEL: Whilst Mr de la Haye is getting his paperwork out, under this proposed new

law it is mentioned that the new law would allow the Public Service Department, who would be administering it all, to have access to all your information i.e. your files, obviously in confidence. Would you gentlemen be minded to allow that information to be, in confidence, passed across to the Public Services Department's water section?

GEORGE LANGLOIS: I think it would do a lot of good because some of our files are far superior to what they've got at the moment and it would do a lot of good to have the real accounts of water in the island instead of the pretend ones.

DEPUTY RONDEL: So, have you been asked for any information recently from the public services water section?

GEORGE LANGLOIS: Not lately, because I refused to do it. That's why I wanted to come before a meeting to be able to talk because when we put it before them they say it's not true. I've even got some letters in here stating that they don't believe what we say, and yet we're the only ones that are bringing up the real water and there's no water shortage in the island, so long as you know where to look for it.

14 Records of drilling

DEPUTY BAUDAINS: If I may pick up on that theme, sir. This is to Mr de la Haye. I presume you have records of what you have drilled and the geology.

LEWIS DE LA HAYE: I do - [NOTE: since 1982.]

GEORGE LANGLOIS: You can't expose names. That wouldn't be fair unless you ask the people first.

DEPUTY BAUDAINS: Have Public Services or BGS ever called on you to examine your records?

LEWIS DE LA HAYE: They called on us the first time they came out to do some site investigation in St Saviours and at the time there was no way we could help.

DEPUTY BAUDAINS: When was that?

LEWIS DE LA HAYE: Not the last time they came. I can't remember. 1990(?), is it? I'm not sure.

DEPUTY BAUDAINS: When they first started?

LEWIS DE LA HAYE: (several inaudible words).

DEPUTY BAUDAINS: Be about 10 to 12 years ago.

GEORGE LANGLOIS: Yes, well I've got all the papers there from those days and it was covered with the Evening Post as well and everything there's open and written down, the refusals, the ...

15 Proof of deep water resources

DEPUTY BAUDAINS: I know Mr Langlois has touched on this. I wonder again, though (inaudible) because we're obviously looking for evidence. Now, it's generally believed by BGS that Jersey's aquifer is shallow. It's about 25 to 30 metres thick. It starts about 5 or 10 metres from the surface and that the yield of boreholes is

approximately 400 gallons an hour. What is your experience with the bores you've drilled? Because some people say there's deeper water. Mr Langlois does.

GEORGE LANGLOIS: I've got plenty of proof there is deeper water.

16 Drilling experience over 25 years

LEWIS DE LA HAYE: Deeper domestic is 100 - 200 feet normally. You're going to be talking about 46 metres to keep just one house going. So, some areas it'll do it but 30 metres, 400 foot (inaudible) but then not everywhere. Some of those private house boreholes are 61 metres, 200 feet to supply. The other thing that I have to add is that nowadays new houses do not have loft tanks so to put in pressurised systems. The boreholes have to have water readily available to enable them to supply showers, dishwasher, car washing, possibly most of those at the same time. So, that changes the depth at which you have to have borehole really but then as from 200 foot onwards then sufficient water exists, usually anyway. There's a list of boreholes that we have at the moment that are artesian and coming out of the top. There's 22 or 23 there. Many more which we have not listed.

SENATOR VIBERT: Could you give us an indication of how many boreholes you actually drill a year?

LEWIS DE LA HAYE: Yes, you can work it out at about one a week, [NOTE: including the connexion to the property.]

SENATOR VIBERT: And you've been doing that for how long?

LEWIS DE LA HAYE: About 25 years.

SENATOR VIBERT: In your experience, have you ever actually had knowledge of any of your wells drying up?

17 No experience of wells drying up

LEWIS DE LA HAYE: No. The only one we've ever had a failure was -- I don't want to mention names. It was down in the area of L'Etacq. We only had an area about as big as a car. There was no other property and I do dowsing as well as George does. There was no water in there anyway when I started so this came as no surprise. Otherwise we don't get too many problems with finding it. On our terms and conditions we guarantee water but then some places if you don't dowse you're putting your neck on the line such as along the top of Les Platons and places like that. Otherwise you come unstuck.

SENATOR VIBERT: Even in the last drought it appears that (several inaudible words) had no examples of your wells drying up?

GEORGE LANGLOIS: We did quite a few extra bores in that year when the drought was on,

when the surface water disappeared and it wasn't disappearing down below.

LEWIS DE LA HAYE: We started in 1962. We were carrying water by tankers in 1976. [NOTE: Then we began drilling in the early 80s.]

18 Majority of bores below sea level - no saline intrusion

DEPUTY RONDEL: You say you put a number of bores 400 to 600 feet. Given that the highest point of the island is, I think, 460 feet or thereabouts, to the Northern Parishes, therefore the majority of the bores --

GEORGE LANGLOIS: Are below sea level.

DEPUTY RONDEL: And no problem with saline?

LEWIS DE LA HAYE: No, none at all. We had one right against cliffs. [NOTE: Several are 350 to 400 feet below sea level].

GEORGE LANGLOIS: There's one this last year 500 feet, 600 feet. Got two of them. They're below seawater level and they're coming from east to west, so where do you think they're coming from?

DEPUTY RONDEL: If you take a map --

19 Trace underground streams

GEORGE LANGLOIS: We can trace the streams across the land. I mean to say that's the most favourable spot to put the bore down but it's mostly streams we trace and they're there. They're coming across from --

20 Map of bores

LEWIS DE LA HAYE: We brought a couple of photographs if you'd like to pass them around. There's a 4-inch and 6 inch one.

DEPUTY RONDEL: I notice from your photograph you've got different coloured pins in your site.

LEWIS DE LA HAYE: The blue ones are the four inch.

DEPUTY RONDEL: Oh, right. And the red are --

LEWIS DE LA HAYE: And the red ones are six inch. There's a lot of others. We do lightning conductors as well for airport systems and Waterworks company stations. Pumping stations So, some of the pins on there are white ones and yellow and are not picked out by the photo.

DEPUTY RONDEL: Could you raise your voice a little bit because they're having difficulty picking it up on the tape.

LEWIS DE LA HAYE: Some of the pins on there you can't see. They're not visible. (several inaudible words) doesn't include 2003 and 2004.

DEPUTY RONDEL: So, this is historical to 2002. Yes, Yes.

21 Rate of flow from bores

SENATOR LE MAISTRE: Could you let us know and move to the other members that what's the minimum/maximum you would expect from a bore between 400 to 600 feet, in terms of yield on gallons per hour?

LEWIS DE LA HAYE: We're talking about 2,000 gallons to 2,500 gallons an hour.

SENATOR LE MAISTRE: Six inch, I presume.

LEWIS DE LA HAYE: Yes. But then now things change. We do it every day. You can now do 130 millimetre diameter, 5 inches (inaudible) and almost get the same but then that accepts a smaller pump and makes the job a little bit cheaper for the customer so we go for that sometimes. Then there's the kind of water that we get down in places like the golf courses. [NOTE: 6000 to 8000 GPH]

22 Costs of drilling

SENATOR VIBERT: Thank you. What is the cost of actually drilling down to say --

LEWIS DE LA HAYE: Drilling can, once again, diameter 4 inches about 29.25 a metre. 150 mill is 55.25 a metre. It's all down to fuel mostly. If we get a rise on fuel then obviously costs also rise.

SENATOR VIBERT: Is it possible to say what the average cost is, in round figures?

LEWIS DE LA HAYE: A borehole of 300 foot. This is talking about the bore in, pump, supply and installation down the hole, so that's the whole shebang. [NOTE: pressure/vessel, plumbing in, well-head construction, trenching to property, clearing debris from the site etc] Works out about £7,000 to 8,000.

SENATOR VIBERT: So, the idea that was put to us that the water was free needs to be set against a little bit here.

GEORGE LANGLOIS: The bore and the maintenance and the pump and everything else.

23 Drilling deeper levels

DEPUTY HILL: A few questions you can answer between you. This perception that you're going deeper because we're getting short of water. We'd better say this is just perception you're going deeper because of the requirements of the...

GEORGE LANGLOIS: Of the quality of the water.

DEPUTY HILL: Yes, but also because of the demands of the particular house. So, you could -- I'm speaking from experience and I declare an interest because Mr de la Haye, I'm quite happy to say, I have no problems with what he's done for me some years ago. But I am talking from personal experience because the experience I had with Mr de la Haye and what we're saying is that the fact that you go deeper, not because there wasn't any water there but you have to find -- you have to go deeper to ensure you can get the type -- the quality of water and also the amount of water for the household.

GEORGE LANGLOIS: **We'll go through the surface water, then into an area where there is no water until we get down to the streams or the deep underground ones. They could be 200 to 300 depth, up to 600 feet, whatever you like.**

DEPUTY HILL: But the point I am making is not because we are short of water it's because of the fact -- I think it's an important point to make because there is a perception that we're going deeper simply because we haven't not any left.

GEORGE LANGLOIS: No.

DEPUTY HILL: But that will obviously dispel that theory.

GEORGE LANGLOIS: It depends on the depths of the streams.

DEPUTY HILL: Yes, that's fine. Okay.

24 Underground streams affected by moon

GEORGE LANGLOIS: They don't come all across the same depth. It depends on the layer of rock and how it works and how the cracking in the rocks and the way it is to get the water across.

DEPUTY HILL: The reason I'm asking about that is I'm aware of the answers but I think it's important for evidence that what you're saying is --

GEORGE LANGLOIS: The other thing that pulls the water across -- and I'm not being daft by saying this, is the moon. It also works the sea as well. The tides up and down. It's the moon that does it but it also helps -- it's amazing it gets a pull on the water and pulls it through.

25 Groundwater connexion with France

DEPUTY HILL: Just elaborating on that. How far could the water come? You're talking about this great big base(?) that we have under Jersey but could it come as far as France, or Switzerland, or beyond?

GEORGE LANGLOIS: We've gone right through in Normandy to an area called **La Petite Suisse** which is the back of (several inaudible words) where some quite high hills and deep valleys and the pull of water, and some of our water comes from that area.

DEPUTY HILL: Sorry, could I elaborate? Would you say the water in Jersey comes from how far? Or could come as far --

GEORGE LANGLOIS: Some of it is coming from 60/70 miles.

DEPUTY RONDEL: And how long would it take to travel 60 or 70 miles, Mr Langlois?

GEORGE LANGLOIS: Depends on whether the moon's full or not.

DEPUTY RONDEL: Right I can understand that. I understand a bit about navigation and the pull of the moon but --

26 Sussex Water Authority experiment in Pyrenees

LEWIS DE LA HAYE: In 1984 **Water Authority Sussex** (several inaudible words) believed that

three of the wells - not boreholes, the old-fashioned wells, had water that wasn't from around the area.

It was the geologist had analysed the granules of sand and rock at the bottom and they thought that it came from the **Pyrenees** and they water engineers quite a big group of them to the area and introduced ion particles to the water sources in the mountains and having done that it took four years continually analysing the water in those wells and they found the same particles they'd introduced in the streams in 1984, four years later. So, it was true then beyond doubt that water travelled for a long way but it took a while - 1988.

GEORGE LANGLOIS: Again from east to west (inaudible) with the pull of the moon.

LEWIS DE LA HAYE: That was one of the members of the water board that told me several years ago.

27 Lack of recognition over years

SENATOR VIBERT: You said in your opening remarks, Mr Langlois, that you didn't feel that you'd been given proper recognition or notice taken of your views by the --

GEORGE LANGLOIS: Do you want to read some of those?

SENATOR VIBERT: I was going to ask you if you'd be able to leave --

GEORGE LANGLOIS: Do you want me to leave you that and you'd read it through?

SENATOR VIBERT: We would like you to leave the file.

GEORGE LANGLOIS: Because you can see what we've had to put up with over the years.

SENATOR VIBERT: Thank you. We'd like that.

28 Roman Map

GEORGE LANGLOIS: You may have that and read it. There's one thing. I also deal in maps and I do very ancient maps and this is one when Jersey and Guernsey and (inaudible) and one Jersey was in one and the Minquiers was an island and it has Roman markings on it where the roman camps were. The Romans always put their camps where the water was because they were the finest water diviners in the world and you can see (several inaudible words) and that's got the Roman triangles are the markings where their camps were.

GEORGE LANGLOIS: That map -- you can pass that around to everyone. It started -- that was when we separated, or just before we separated from France. [NOTE: about 8000 years ago].

29 Planned borehole on Les Ecrehous

DEPUTY BAUDAINS: Can I ask a question of Mr de la Haye? We have heard today about the plans for a borehole on the Ecrehous (inaudible) and I happened to notice in the evidence which we received that (I think it was the TA) had actually at one time

agreed to supply a helicopter for transporting the rig but the deal fell apart. I presume because they couldn't lift it. Could you tell us how big your -- what is your smallest drill rig? I mean, how big is it? How much does it weigh?

MR DE LA HAYE: That weighs about half a ton. [NOTE: The smallest adequate compressor available equals 2 and a half tonne.]

SENATOR VIBERT: Following up on that, do you believe there's water on the Ecrehous?

MR DE LA HAYE: Yes. [NOTE: Monks lived in the Priory. The ruins still exist.]

GEORGE LANGLOIS: So do I.

SENATOR VIBERT: Well, I mean, we know there's a well there that supplies water but (inaudible) borehole would produce meaningful quantities of water. How deep would it be?

LEWIS DE LA HAYE: About 150 foot

SENATOR VIBERT: How deep do you think you might have to drill?

LEWIS DE LA HAYE: You'd have a flow at a hundred foot if you want it [NOTE: as a useful supply probably 160 to 180 feet].

GEORGE LANGLOIS: Could I give you a little reading of the Ecrehous?

SENATOR LE MAISTRE: Yes, certainly.

GEORGE LANGLOIS: *"Ecrehous spring. I've seen it. It's from myself. I refer to ML Gibbs' letter about water on the Ecrehous in which he, or she, claimed that springs do not exist. I can give the location of a good spring that exists and has been running for hundreds of years and may continue to do so. It is located between Mr Bilither's(?) house and the slip, about half the distance between the two on 24-foot tidemark above low water. There is a patch of green algae. Just remove the pebbles and below is a crack in the rock where fresh water bubbles come out all day long.*

When Alphonse Le Gastelois, the King of the Ecrehous lived there, he was often seen with a foot pump and two plastic water cans and a small pipe that he used to push down the crack and get all the drinking water he needed. I know of two other springs like that down there but the above is the easiest to get at and its existence can be confirmed by Captain Doug Parks. Many people know of the existence of that particular spring. The monks must've used it hundreds of years ago because the old pump well would not have supplied their drinking water all the time.

As for being (inaudible - reading from document) of the geography of the Ecrehous I'll leave that up to the readers to judge and as for the book that has been printed I suggest a look at the facts before printing"

SENATOR VIBERT: When was that?

GEORGE LANGLOIS: That I did about ten years ago and it's still -- because when Dougie Parks used to go out with a States tug and take food to Alphonse, they never took water. They didn't have to. He got all his fresh water there and it's been

running for hundreds of years and in the old days when the Ecrehous was a lot bigger that was inland. It's only underwater now because they've got smaller and smaller to the rocks. But that is there.

We, at the time of these letters in here going back to the Agriculture Committee at Trinity, when we offered to bore one down on Lewis's property, we were going to do the bore, we were going to find the water, and we offered to do it free for the States. The army came in at the time and offered us a landing craft, which can be checked and authenticated. They were going to do it as an exercise and actually the landing craft came in the island, was in the harbour, and it was cancelled at the last moment because we might upset the birds on the island. And that was the excuse it was stopped. And we were going to do it for nothing and hand it over to the States. Isn't that right? And that's the sort of opposition we've been getting for years.

Yes, because British Geological Survey would not admit, or didn't want to admit, that there was any water coming in from anywhere else but the skies. That's what we've had to put up with all the years. We go to France, we go to Normandy, we can work over there as professionals and we get greeted over here, they don't want to know us, some places. It's politics and money, that's the one I tell them. As I say, British Geological Survey have been paid tens of thousands of pounds, certain civil servants like it because they get a nice job and they'll go along with it on purpose. They won't admit there's water deep down and yet we've got over 5,000 bores in the island. They're deep and they supply water.

30 No Derogation of neighbouring bore holes

SENATOR LE MAISTRE: Thank you very much for that, Mr Langlois.

Could we ask also whether you've had experience of drilling boreholes either in a cluster or close to others which have caused the level to be affected, and if so --

LEWIS DE LA HAYE: (several inaudible words) and down the road from the Trinity main road in the Highfield Estate, I think they call it. Yes we did 15 in there and nobody has been back to say they'd run out of water.

SENATOR LE MAISTRE: And they're all about the same depth are they, pretty well?

LEWIS DE LA HAYE: More or less, give or take about 20 foot, that's all.

SENATOR LE MAISTRE: Yes, I think I can see the cluster that you're talking about.

LEWIS DE LA HAYE: Yes, you can see the blue ones.

31 Domestic boreholes feeding a number of properties

DEPUTY RONDEL: On a domestic borehole that were feeding a number of properties, what is the maximum amount of properties you'd put on one unit, one bore?

LEWIS DE LA HAYE: Well, the one in Hastings Road was doing 37 flats for bank staff, with a 1

HP pump, 200 foot. It's now doing 21, the bank's sold some flats recently.

GEORGE LANGLOIS: There's one stream up Victoria Village we did last year, didn't we, and I did the stream across the fields, you did the bore. There's enough water in that stream to supply the whole of Victoria Village.

LEWIS DE LA HAYE: We could supply a lot of houses from the one bore. The thing is, what decides it quite often is how the property is owned. If the houses are going to be owned by different people they're not too keen on buying and having to maintain or share the cost of, you know, maintaining one bore. So very often they'll go for the one each, smaller, rather than having to have words and bad feeling later on and so it depends. Such is the case of the flats and it was the bank - one ownership so one borehole.

And the other thing that's sometimes bad is carwashes, which we've done also in St Helier, and the Waterworks would -- rather than risk reducing the pressure on the hotels and houses around the place when the carwash is working, they usually tell the garage owner to make alternative arrangements.

32 Demand for commercial boreholes

DEPUTY HILL: We've heard quite a lot of the amount of boreholes you're doing for domestic, is there much demand now for commercial ...?

LEWIS DE LA HAYE: Not as much as it was.

DEPUTY HILL: There's not, no. Like greenhouses, farming, etc,

GEORGE LANGLOIS: But that is very much now a thing of the past.

LEWIS DE LA HAYE: Hotels. [NOTE: Still occasional enquiry]

33 Examples of bores with strong flow rate

GEORGE LANGLOIS: Yes, but a lot of hotels in the country and quite a lot of big farms. I'll give you an ordinary farm for instance. [named farm] at Le Hurel, he had a couple of bores put down. They said to him, no water, no money, and they thought the water ran down the whole hill, and two bores were put down and they got no water, did they? So we were called on the scene and across the road between Mr XX's greenhouses on the front, there's water down there, it'd run from a stream and it goes into XXX. It came from behind the XXX Laundry, 305 feet down, and the water's been flowing over the ground now for eight years. He's got a pipe running down his driveway and it goes into the brook and down the slip and off the hole and out to the beach. And that water's been running now for a good eight years and there's no shortage of water.

And there's one, it's a stream, again east to west, the yellow part is tapped. The XXX Laundry, they had two shallow wells there before, the old-fashioned ones, couldn't get enough water, had Waterworks water and it was so costly, plus the

chemicals in it didn't do much good for the clothing. So were called in, did a bore down there, that was 300 feet on that one. It's the same stream and they've been doing it ever since and they've shut off the Waterworks water, filled the other two wells in and they've had no trouble for the last six or seven years, have they? And that's the sort of thing we do.

LEWIS DE LA HAYE: (several inaudible words) Meadows that we did 15 years ago and when we finished it started overflowing once we'd retracted all the drill equipment. And we measured it, it was overflowing at 1,000 gallons an hour and I see the chap that owns the place quite often now and he tells me the thing's still the same today. So it just flows down the stream to the Bay of Grouville.

34 Artesian wells

DEPUTY BAUDAINS: Could I come in on that because it does strike me that it could be a problem here? You said that there's, what, roughly 15 artesian bores that you're aware of?

LEWIS DE LA HAYE: I've made a note of 23 of them.

DEPUTY BAUDAINS: Now, if those are flowing over the top at greater than three cubic metres a day, I presume it's going to need a licence so then people would seek to cap the well, I suppose. Is that possible?

LEWIS DE LA HAYE: We've tried that before. [NOTE: pressure of water from below either lifts the casing pipe out of the ground or other boreholes in the area start overflowing.]

GEORGE LANGLOIS: Doesn't work.

LEWIS DE LA HAYE: It lifts all the casing out of the ground.

GEORGE LANGLOIS: Well, how can you -- the Waterworks company don't charge the people for their water, the water's free. They charge for the facilities that they supply, not the water. The water in the island, I mean, people on the old ancient rights, the water below your land, or minerals if you like below your land, is yours.

35 Flow rates up to 10,000 gallons an hour

DEPUTY BAUDAINS: The other thing I'd just like to clarify was, again going back to an earlier question I put about the amount of water that is available from a bore hole, we've heard 2,500 gallons an hour was given as an example, I think you might have mentioned it earlier this afternoon yourself. Are there any that supply that sort of volume or are there greater volumes or is that exceptional?

LEWIS DE LA HAYE: One that supplies 10,000 gallons. [NOTE: 160 foot borehole 8 inch diameter.]

GEORGE LANGLOIS: Yes, you can go up to about 10,000.

LEWIS DE LA HAYE: And that's only (several inaudible words).

GEORGE LANGLOIS: There's some even less than that running away, isn't there?

DEPUTY BAUDAINS: Are there any that would supply 2,000 gallons an hour, say or is that unusual?

LEWIS DE LA HAYE: There's a lot of them supply 3,000. A lot of them that supply 3,000 gallons an hour, some that supply 4,500, depends on the requirement. A laundry, one of them was using a 60,000-gallon tank on legs, by noon, and at 12.00pm every day, prior to us coming, that was empty and all the women were ironing in the afternoon. And that was not profitable so it was decided not to carry on like that.

SENATOR LE MAISTRE: You mentioned the artesian wells. Would it be possible for us to visit one or two with --

LEWIS DE LA HAYE: (overspeaking) and have a chat with him.

36 Grouville Hill well

GEORGE LANGLOIS: You've got one publicly on Grouville Hill. There was nothing wrong with that bore until Public Services went and put weed killer down and they poisoned the well and it's been poisoned ever since. It's slowly coming clean now, isn't it, but it's taken 10, 12 years.

LEWIS DE LA HAYE: A long time, yes. [NOTE: We worked on the above source in 1976 to rekindle the flow for the Parish of Grouville.]

GEORGE LANGLOIS: And that was -- there's -- that's a public one, that's there in the open, just comes from across the road.

SENATOR LE MAISTRE: I think it would be helpful because we're trying to base this on evidence and (overspeaking)

GEORGE LANGLOIS: That is a -- the water down below, below the bonnet, a good bore was put down there on Grouville Hill and put down with a -- I wrote an article when Grouville had their parish book done on the well and how to cure it by putting a bore down deeper to escape the poison. But it's slowly working out now but that was Public Services at the time, they were putting this poison down to kill the weeds and make it a lot easier for their workmen to do and all the rest it and one or two cats and dogs got very sick, I read, as well. So it was stopped after that.

SENATOR LE MAISTRE: Could we know, the artesian wells that you have drilled, are they all at a lower level, like at Grouville, or do you find some one at --

37 Further examples of artesian wells

LEWIS DE LA HAYE: No. We've done three in March this year so those three two in Bellozane Valley and one up by the back of Handois Reservoir it's about level with the St Lawrence main road. [NOTE: This is one of the highest overflowing at 4GPM - over two million per year going to waste.]

SENATOR LE MAISTRE: Oh, right. So it would be useful to have an example of each because it could be argued that because there is a lower level that's why there is a

pressure building up?

LEWIS DE LA HAYE: That's right. There's another one round your way, down by the Battle of Flowers Museum. [NOTE: In winter only overflowing.]

SENATOR LE MAISTRE: Oh yes. Well, maybe we'd like to pick that up at some point, I think.

38 How can you pass a law and charge for water that they say doesn't exist?

DEPUTY RONDEL: The proposed new water law, do you believe there'd be any merit in it being adopted by the States for your customers?

GEORGE LANGLOIS: There's no advantage to our customers, is there? I mean, as far as the States are concerned at the moment, the way they read the law, there's no water below 75 feet anyway. So how can you charge for water below 75 feet? That is the way that the Public Works, Public Services, and their Water Committee -- before that they've said there's no water below 75. The British Geological Survey, who they pay tens of thousands of pounds to every year, say there's no water below 75 feet. So how can you pass a law and charge for water that they say doesn't exist?

39 Cost of fitting meters

LEWIS DE LA HAYE: That was the other thing that I wonder sometimes (inaudible) if that came about who would pay for the fitting of meters [NOTE: the reading of them plus the borehole maintenance and pump replacing. Also water treatment which exists on 70% of systems.]

DEPUTY RONDEL: Sorry, who would pay ...?

GEORGE LANGLOIS: Who would pay for the fitting of the meters and this sort of thing?

LEWIS DE LA HAYE: That's where I think you'd get a bit of hassle but [NOTE: Those problems above do exist and have done for years, with the client paying with no complaint.]

SENATOR VIBERT: The position is that the customer, i.e. the borehole owner, is going to pay for everything (overspeaking)

GEORGE LANGLOIS: And what about the water that overflows, that's not his problem, it's a God-given gift anyway? Is he going to pay for something that --

SENATOR VIBERT: The evidence that's been presented to us is that this is going to be a user pays and the user is going to pay all costs.

GEORGE LANGLOIS: But first of all, (inaudible) of it comes up from above 75 feet because --

SENATOR VIBERT: I think you make a very logical point --

GEORGE LANGLOIS: -- your people say it doesn't and you're being paid -- you're paying tens of thousands a year to the British Geological Survey for that and if it's not true, why are you paying it?

40 Special consideration being given to the Jersey New Waterworks Company.

DEPUTY BAUDAINS: Could I ask Mr de la Haye a couple of questions on the submission that you made to us? In paragraph 2, which relates to article 4.2, it talks about special consideration being given to the Jersey New Waterworks Company. Do I understand this correctly that you are suggesting that as boreholes represent an integral part of the water that the population relies on, the Committee should have regard for everyone, not just the Waterworks Company?

LEWIS DE LA HAYE: Yes. I've got nothing against the Waterworks really doing as they wish, doesn't make any odds to me. I mean, I do work for them sometimes so it wouldn't be in order.

41 Driving people to use mains water instead of boreholes - further stress on mains supply

DEPUTY BAUDAINS: And further down, in paragraph 11 of your submission, again I understand you're suggesting that the - for want of a better word - aggravation, the inconvenience should I say, of complying with this law might drive people away from boreholes on to mains water, thereby causing stress on the mains water supply in times of (overspeaking)

LEWIS DE LA HAYE: I don't think the percentage would worry us at all because sooner or later, as is happening now, we have spots where it's uneconomic for the Waterworks to actually go, for instance along the Corbiere Road, to several bungalows along the coast. So they have a bore. You know, there's quite a few along the coast but it's all granite so it's uneconomic to trench in granite. I can understand their point as well, it's not economic. Such as the radar station up there with the big bore, that's got lightening conductors, 300-foot hole and it's only -- 300 metres off the main road. (several inaudible words). It seemed to me that at odd times as I understood it has to be a borehole. So, no,-- it wouldn't bother me one way or other, we'd still have the phones ringing.

GEORGE LANGLOIS: That's a sink you know that one, having a laugh.

On that one, the station that we were just talking about, when the bore was put down, the British Geological Survey brought over some students to measure a water in a lot of the bores and they didn't know how to use the machines for doing the measurements. Lewis had to show them how to do it. That's giving the opposition a helping hand, isn't it?

42 No compensation in the event of revoking a licence

DEPUTY RONDEL: Through the Chair, if I may, in your submission, number 13, you mention, "My concern in relation to the failure to provide compensation in the event that a licence is revoked is compounded by reading article 46 which expressly precludes any

liability. That surely cannot provide a safe system of checks and balances within the law, restricting the Committee's activities"

Would you like to say any more on top of that?

LEWIS DE LA HAYE: No, I think I've made the point on that one.

43 Use of the deep borehole water to supplement mains supply at St Ouen's

DEPUTY HILL: Could I just come on to something you said earlier, because it was about the amount of waste of water we have overflowing, etc, and you said something to the extent it might be helpful we make these boreholes with a view to saving or conserving that water for, want of a better word, a rainy day. But would it not be some value maybe in maybe us tapping into this water for us to feed the Waterworks as opposed to that water going nowhere and we're using desalination plants to produce the water?

LEWIS DE LA HAYE: There's loads of places like that. [NOTE: Boreholes drilled in the correct manner and in the appropriate spots can supply a vast amount of good quality water.]

GEORGE LANGLOIS: You could do this but, again, you have politics again comes into this.

DEPUTY HILL: So there would be an advantage in boring holes to feed the --

GEORGE LANGLOIS: Can be. I mean, at the moment there's as much water going to waste as being collected. I mean, we can -- for instance the Five Mile Road, you know, going back to the Waterworks Company. They were talking about spending £50 million to enlarge the reservoir, all right. They've got what they call a field of bores down there which come around the 75 feet mark, isn't it, and above the basin, and the water's not very good, none of the Five Mile Road water's very good. It comes above the basin and they've always got trouble with their pumps down there and it's rubbish that they're putting -- and they're talking about spending £50 million to increase the reservation of the amount of water in the reservoir. If they went down 500 feet below into the second layer, two 6-inch bores would give them all the same and it wouldn't cost them £1 million, and they'd only need two pumps.

Now this is politics and money and this is one of the troubles we come up against and we're told, "Pooh, pooh, pooh", that's the attitudes. We're amateurs, you see, but it's there.

They knocked the old hotel further along the road, didn't they, the old hotel going towards L'Etacq there, down the -- Yes, not the Manana the first one next to where the petrol --

SENATOR LE MAISTRE: The Blue Dahlia?

GEORGE LANGLOIS: No, no. What was the name of the hotel? Sables D'Or, right, and there's two houses being built there. Well, one bore down there, down into the deep

water, they've got all the water they want. Some of the houses around there, I've been and seen the bores, and they're absolute poison because they're on the surface water and it's where all the old dumps used to be in the old days where all the rubbish from the slaughterhouse and everything else got dumped down there. And then people are using that water from -- and one or two of the wells I've been down there's yellow. I've turned around and said to people, "You've got to get a deeper bore and go down below it and you won't have this trouble because the surface water is bad". You see, and they got their water for their cooking and drinking in plastic bottles instead of putting a bore down and they're still using the old water. It's ridiculous.

But there is enough water down below, in the Five Mile Road, to supply quite a lot of water down below the basin there, and it's running further out to sea and just running to waste.

SENATOR LE MAISTRE: Yes. Dr Sutton would like to ask a question.

DR SUTTON: In most of your wells do you case and gravel the upper 25, 30 metres?

GEORGE LANGLOIS: Oh, yes.

DR SUTTON: And do you have any lab analysis results from the deeper water that shows different (overspeaking) from the shallow water?

GEORGE LANGLOIS: There's a letter that was sent to us many years ago, to myself, if you want to read it and pass it. There's three bores on the same property, the man is well known, the letter was actually sent to the Water Department of Public Services and he didn't even get a reply to it, and that's for three bores. The funny talk about is it's about -- but that'll give you some idea what they have to put up with, people at times.

SENATOR LE MAISTRE: Are you able to leave that with us?

44 Reports of past meetings with PSC

GEORGE LANGLOIS: I will leave all this. There's nothing to hide. I'd like to have it back because some of it's paper reports and when the reporters were at meetings. There's quite some fierce arguments in there from years back when we were fighting, wanted to bring, I mean, a specialist over from the other side to see and the way they were stopped and all this sort of thing.

DEPUTY RONDEL: Can we use any of the contents of that --

GEORGE LANGLOIS: You can use anything you like, there's nothing to hide.

DEPUTY RONDEL: Reproduce it I mean --

GEORGE LANGLOIS: Yes.

DEPUTY RONDEL: -- within any report we may have to --

GEORGE LANGLOIS: Yes, there's nothing to hide, not as far as I'm concerned.

LEWIS DE LA HAYE: Could I pass that to Dr Sutton to explain what I've been talking about --
SENATOR LE MAISTRE: Fine. Is there any other thing that you wish to add before you --
GEORGE LANGLOIS: Oh yes. Would you believe we've got warm water in the island?

(25 seconds of background noise)

45 Warm water sources

DEPUTY RONDEL: Yes, Mr Langlois, you mentioned warm water. Yes, I've had experience.
Can you enlarge on that please?

GEORGE LANGLOIS: Well, we've got four over here, haven't we? One of them's very, very hot
at Rozel.

DEPUTY RONDEL: Yes, I know that one.

GEORGE LANGLOIS: It's enough to be able to put a return pipe on it and use all the -- get the
central heating and that, it's that hot, a circulating pump. There's one up on the
top of Rozel, the horse stables. That's tepid, isn't it, not far from your house?
How deep is that one there?

LEWIS DE LA HAYE: 350 feet.

GEORGE LANGLOIS: 350 feet, it's tepid, the Portuguese shower in it. There's another one
further along --

LEWIS DE LA HAYE: There's two in (inaudible), one in particular's excellent, you can shower in it,
no problem at all.

GEORGE LANGLOIS: Yes, it's warm water so that's coming from round the volcanic area.
There's some hotspots down below there, Yes.

DEPUTY RONDEL: Yes, I'm aware of that one because I, as you know --

GEORGE LANGLOIS: People keep very quiet about it.

DEPUTY RONDEL: Yes, we used to work on that particular one and the staff used to shower in it
regularly.

GEORGE LANGLOIS: There's one that's very unusual. It's by St Lawrence Parish Hall, isn't it, at
the back?

LEWIS DE LA HAYE: The back of the school.

GEORGE LANGLOIS: The back of the school there.

LEWIS DE LA HAYE: It's only 150 feet.

GEORGE LANGLOIS: Yes, 150 feet and it's warm down below. Where the hell that's coming
from, I don't know, nor do we. It's most peculiar.

LEWIS DE LA HAYE: So there you go, central heating.

SENATOR LE MAISTRE: Well, thank you very much for coming to meet us this afternoon, it's
much appreciated and particularly with the material that you've brought. Would
you want these back, Mr de la Haye?

LEWIS DE LA HAYE: Not necessarily, no.

SENATOR LE MAISTRE: Because I'm sure we don't need more than one if you wanted to -- we could keep one, the others you can take back maybe. And thank you very much for offering for us to see the documentation.

GEORGE LANGLOIS: Oh, you can have these, there's nothing -- it's been made public already so it doesn't --

SENATOR LE MAISTRE: And maybe we could be in touch with you to have a look at some of the artesian wells?

LEWIS DE LA HAYE: Give me a ring.

(adjourned)