

### From the questioning of the expert: Situation 1

After the different scientists and representatives of the Water Advisory Task Force had presented summaries of their report, the moderator of the public hearing encouraged members of the audience to ask questions and make comments pertaining to the technical issues of the reports (recorded September 22, 1999).

Hays: You took water samples from our property. Now, I was told that you let the water run. The problem is, first of all, at any source you get the water is coming out of a cistern that is 2 or 3000 gallons. It's had a chance to settle out, number 1. Number 2, the water you've got has been mitigated through a water softener. Number 3, it has been mitigated under a UV system to kill bacteria. How can you say we can mitigate our water? I mean how much more mitigation can we do?

Moderator: Dan [Lowell], can you? Do you know about that particular well, whether you tested it right at the well head or whether it was through the system?

Lowell: I don't know of any well that we tested that had any kind of treatment. We went to the cistern to get the water but we went to where the water came into the cistern from the well. We didn't, uh I think there might have been one well that we tested from the cistern 'cause there was no other way to test it but all the others were uh before the cistern, and before any kind of treatment.

Hays: Are you sure of that? . . . We have, an in-ground, basically a septic tank. We have a very low water flow and it has to go into a septic tank and from there.... Unless you went through a lot of blackberry bushes, which I didn't really see them disturbed, you'd have to go through quite a bit of bramble to get to it. It comes out of there, goes through the pump house, goes through a UV filter and goes out from there to the taps. And I assume it was taken from the taps. So it's gone through a UV filter to kill bacteria because we have water levels that are near septic fields. It's gone through a water softener and a through a filter and it's still reading pretty nasty high levels. So I don't, I don't personally feel that mitigation means much to me since we're already mitigating the hell out of the water as it is.

Lowell: Yeah, if that sample was treated before we got it that would mean that one of the samples isn't exactly what we thought it was. But it wouldn't change the conclusions of my report.

Whereas scientists are often portrayed as the guardians of scientific methodology, of which everyday folk are ignorant (Brown and Michael 2001), the community members in this meeting, here exemplified by Hays, did not appear to be overly impressed by the scientists, their articulated degrees, or their expertise. In fact, an important dimension of

all the questions was the appropriateness of the methodology used and the validity of the data to draw the conclusion that the independent consultant Lowell had presented. The first exchange opened with Hays' questions about where the water samples had been taken. Hays suggested that the sheer water quantity in his cistern would have implied that Lowell tested water that had been stagnant for a while, and therefore allowed any substances to settle. Stating the holding capacity of his cistern, 2000 or 3000 gallons of water contrasted the 15 minutes of letting the water run at the tap. Common sense tells any listener that a water tap running for 15 minutes does not empty 2000 gallons of water necessary to have access to the water from the well. He thereby made salient a potential problem in the methodology, which implicitly raised questions about the validity of the findings 'no wells were found unacceptable'. Further, the water samples would have already been mitigated through a water softener and a bacteria-killing system based on UV irradiation. Lowell attempted to defend himself by saying, consistent with his initial presentation, that to his knowledge all water tested came from the wells rather than from cistern (with perhaps one exception). Hays questioned the veracity of Lowell's statements thereby portraying them as claims rather than as matters of fact as it came across in Lowell's presentation and initial response. Hays subsequent question again put the authority of Lowell's description of method into relief by stating that there had been no evidence on his property that Lowell had actually accessed the water at the only place where it could have been sampled in unmitigated form. Therefore, there is a strong possibility that Lowell's data were not unbiased. Nevertheless, he claimed that even if he had not conducted *these* measurements appropriately his overall conclusion would not change.

Here, we see an ordinary citizen questioning the legitimacy of a scientific report. The transcript does not allow us to think of Hays as an ignorant person. For example, although Hays probably had a conception of what a solution might be that is different from Lowell's, he could participate in the debate quite efficiently. In these circumstances, it makes us acknowledge an individual knowledgeable about the operation of water softeners, UV filters and their action on bacteria (but not on other aspects of water quality), and the effect nearby septic fields have on drinking water. (In rural areas, many homes still use septic fields where wastewater is allowed to move through a special bed made of rocks, pebbles, and sand to enter the ground water.) This episode quite clearly illustrates how 'lay expertise' and common knowledge can be mobilised in order to clarify what is at stake in the context of a sociotechnical controversy.