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**WHITFIELD:** So, here's what that leaking well head actually looks like right now, 5,000 feet below the surface of the gulf, you can look at CNN.com for live streaming video of this rupture and the crude oil still spewing from it. You can see that around the clock on CNN.com/live.

All right, keep that image that you just saw in mind as we tell you about this, the Environmental Protection Agency is ordering BP to use less toxic dispersants to break up the oil. Let's discuss dispersants with Professor Peter Hodson of Canada's Queens University. He's joining us now from Kingston, Ontario.

So, Professor, good to see you. First off, how dangerous is the current dispersant that now BP has been using for weeks as this oil has spewed now for a month?

**PROF. PETER HODSON, QUEENS UNIVERSITY:** Good morning, Fredericka. The dispersant itself is among the least toxic of the dispersants that are approved for use. The problem is the amount that's being used. The amount is unprecedented in terms of what's been sprayed on the surface and what's been sprayed underneath the ocean directly into the emerging oil.

**WHITFIELD:** So then wait a minute, Professor, if you say the current dispersant that is being used is the least toxic of those that are available and if the EPA says we want you to use a less toxic one, is there another option? I'm almost hearing from you that there isn't.

**HODSON:** Well, there's quite an array of dispersants that have been developed and tested and they do vary in their toxicity, the problem is that they also vary in their efficiency. So there's a very good possibility that they could choose one that's less toxic, but they're really going to be careful because they may have to use more. As one of your previous scientists said, it's the dose that makes the poison, so if they have to use more, then of course they're no further ahead.

**WHITFIELD:** So when you talk about one that may be less efficient, the other options, less toxic ones may be more inefficient, how do you measure the inefficiency?

**HODSON:** Well, there are standard tests in laboratories for determining the efficacy of oil dispersants in actually creating the dispersion of oil in the water column. But of course, this varies quite a bit in practice; it depends on how accurate you are in getting the dispersant on the oil and how well it mixes. So it's a bit difficult to predict in advance how these will perform in actual practice.

**WHITFIELD:** So, when you look at the images that we continue to show while you and I are talking and you see these clouds of oil, sometimes a pudding like texture, other times it looks like just an oily matter that is suffocating the wetlands. The idea of the dispersants being used was to do what? To cut down on the level of oil that was going to ultimately make it to the marshes or to change the consistency or what?

**HODSON:** The problem is that the oil on the surface will dilute ultimately to background if you give it long enough, it will dilute in two dimensions, spreading out until eventually it reaches a concentration that's not harmful. The problem is that in the process it may encounter birds, wildlife, shorelines et cetera and that's what we want to prevent.

By using dispersants you can get the oil to dilute in three dimensions that is down through the water column. The result is you get a faster reduction in the amount of oil and hopefully reach a level that's nontoxic. The problem is that with oil coming out continuously, in the huge volumes that have been spilled, this is an ongoing process and we're not getting rid of the oil, the oil is simply accumulating in the water column and eventually will reach concentrations that are very harmful to aquatic organisms.

**WHITFIELD:** What's your expectation, Professor, as we're now at 31 days since the explosion on that oil rig, since the oil began spewing -- what's your expectation as to when we might see images of great volume, various types of wildlife that have died?

**HODSON:** Well, I think it's beginning, you're seeing video of oil coming ashore into some of the marshes, which is very upsetting, these are very sensitive areas, there are findings of dead animals at sea, whether it's turtles or fish, clearly there are some impacts starting to occur. And I think what is concerning is that when you stand back far enough and get these images from space, you realize that the Gulf of Mexico is not that big a place. And it's filling up rapidly with oil.

**WHITFIELD:** Professor, thank you so much for your time, really appreciate it, Professor Hodson.