

Session 6C: Spills

Questions & Answers

Dan Doty

Q: Are there any studies done of egg survival in the gravel using egg boxes or what level of hydrocarbons residuals were there in areas where spawning occurred?

A: That was one of our concerns—to get the levels down in the spawning substrates particularly to low levels. I don't have the results handy, but what we did do is that we wanted to make sure that they were down and well below low parts per billion because of the concerns and the possible adverse effects even down at that level. In many areas, the levels were down to non-detect in the spawning substrates by the time the salmon spawned.

Q: I was wondering [if] any chemical retardants were used to fight this fire, and if so did you check for residuals of that at the time or do you plan on checking for residuals of gasoline or fire retardants in your ongoing analysis? And one more thing—I'm curious to know what happened as you agitated that stream, did everything just go down into the estuary and was there a way to treat that water?

A: Mark can probably answer that question better than I can. They had a variety of ways of agitating, but there was also a system for capturing it and monitoring the water and Mark Henderson was involved with some of that. But the idea was to try to control that and watch it. So monitoring was done throughout the stream and specifically during the activities to remediate to make sure it did not get to levels of concern. The first part of your question was about fire retardants. I think there was some done at the Wilburn Street area, a variety of analyses were done and I don't know if we looked specifically for the fire retardant component.

Alan Mearns

Q: When considering loss due to evaporation and application of a dispersant, is there an optimum time for the application of a dispersant and, therefore, do we have a limitation on decision-making?

A: It depends on the oil type and the weather conditions and all that, but we're talking hours right after the initial spill. The key factor for both the evaporation and the other processes is the viscosity of the oil. Once it gets above so many thousands centistokes viscosity, you can't do anything with it in the way of dispersion. So we are talking of windows of opportunity of one to four hours out to maybe a day at the most, so that is why the pre-approval process is important, allowing the Coast Guard to without convening a huge body of people allow them to use it or not.

Q: Could you explain, based on your model, why there was not any oiling of the shoreline essentially right around the spill site?

A: There was. We did not model it. We just jumped ahead to the point, there's a high probability of oiling along those points around Guemes Channel and Rosario that went out there.

Brent Moore

Q: Maybe a couple of comments. I'm really glad to see you are doing this. We have not done any microlayer sampling in Puget Sound, really in awhile. When you said that your levels didn't seem as elevated as the Puget Sound ones or ones elsewhere, be aware that most of the Puget Sound data was taken before a lot of our sewage treatment plants went to secondary treatment. Don't discount sewage discharges as being major contributors, because we know that the oil and grease content from what people pour down their sinks and what not is fairly significant, so you maybe in fact wanting to look, certainly in the Los Angeles Harbor, that's where they are looking, at the big dischargers.

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A: We still have two primary treated sewage discharges going into marine waters and Burrard Inlet and those are two areas we would like to look at.

Q: Has this type of work been done in freshwater and if you know about that application?

A: Well, actually somebody mentioned that to me on Monday. They mentioned that some researchers had been looking at microlayer contaminant levels in freshwater and wetlands because they were concerned about pesticide impacts on amphibian eggs. I believe there have been some papers put out recently on that so that's one other area that we are concerned about because we have amphibian populations in the lower Fraser Valley that are threatened right now.

Q: What methods did you use to ensure that you didn't contaminate your samples with your research vessel? I saw the last photo that a picture off the back end of obviously an outboard motor boat.

A: We sure were worried about it because we knew that two-stroke outboards are a major source of PAHs. What we tried to do was is to hold it out to the side of the boat, keep it away from the exhaust area, and we had to take about 20 to 30 minutes to collect the sample. So we couldn't retrace our steps, we took about a 200- to 400-meter run through the area that we were sampling. One thing that did relieve us a bit is the control stations looked pretty good. We would have picked up some contamination in Bidwell Bay off Point Gray in our samples if the vessel was contaminating it quite a bit.

Eric Olsson

Q: What is the minimum size of an aerial coverage of spill that the Coast Guard wants to hear about, and how do they keep track of it? Do they log it? Do they have a database we can access?

A: The law says that anything that causes a sheen at all, so as long as there is a visible sheen on the water, you are required by law if you spill it to call the Coast Guard.

Q: What if I did not spill it but I see it?

A: By the time you get to the phone, it will be gone, and unfortunately that's what happens. They have to investigate and by investigation that may be a phone call back to you to say come back and let us know what happened. But there has to be a case open if a phone call is made. But in reality, if every single little sheen was called in they'd have to increase...

Q: People tend to use the spray Dawn on the oil sheen, and I think that's where a lot of the idea about telling people that dispersants cause more toxicity and I wanted to know how you would coordinate that message and is so different about the dispersant that you are using?

A: I can look at this at several levels. Yes, I think Dawn is more toxic than the dispersants that we are using and we can look up that data, there should be some toxicity data. Dawn is a very good dispersant. Some of you may have heard my other talk earlier this afternoon about the PAHs, the hydrocarbons that are in mussels all over the place. When you really look at where those mussels are collected, they are collected near things like ferry docks, boat facilities, and so on. Some of the highest levels of petroleum hydrocarbons that we have gotten anywhere on the coast were in Cordova Harbor five years after the Exxon Valdez oil spill, about 30,000 ppm of PAHs. These marinas are probably very big sources of contamination as a result of the sheen sticking on things and the shellfish, as the tide goes out there's sheen in the sediments, there's oil in the sediments and so on. If I [were] an idealist I would say, you know what you want to do, you'd want to actually disperse those little sheens and get them in the column so they wash out so you can stop the bathtub ring. Now I know that's not a popular thing to do, in fact it's probably highly illegal to do that. So I kind of want to throw a question back to my colleague here.

Q: I monitor pollutants and marine life and I find hydrocarbons at high concentrations in marine life around marinas. If your best management practices were put into effect fully, I'd have to see a reduction of contaminants of hydrocarbons in my mussels and oysters that live in the marinas

and...if they weren't then I would like to ask, let's try some other BMPs like dispersing the oil. Would monitoring of hydrocarbons in marine life at marinas be a useful tool to get a feedback message to everybody, that hey, marine life in my marina is loaded with oil, and I want to do something about it? What do you think about dispersing small oil spills?

A: My first thought on it is one of the biggest questions I get is why should I do it because there's a lack of good science evidence. We have a lot of anecdotal things to show, that you don't want oil in the marinas. I think it is critical, I think it's really needed. I deal with small spills and the fact is like the big catastrophic crude spills, these small spills are highly toxic, they are combustion products with additives to them and they are in the shallow waters with lack of flushing. That's what makes it so much more serious than even the open water spills, and plus they don't get any media attention, so that means they are not cleaned up, they are not reported, and they are cumulative.

Eric Olsson

Q: Is there a rule of thumb for how far a quart of oil or diesel fuel or gas spreads across the surface?

A: It's acres.