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Thank you for inviting me to today's conference. I was the Assistant Administrator for Air and Radiation for the last three years at EPA and before that I spent almost five years as Assistant Administrator for Water. Prior to that I served as the Secretary of the Environment for the State of Maryland.

I have a story about my EPA time that most of you will find interesting. When I was the Assistant Administrator for Water in the mid 90's I started raising issues about MTBE getting into drinking water. The folks in the Air Program would say, "Oh don't worry about it, it is needed for clean burning gasoline." The tank people would say "There is an underground storage tank program that will fix the leaks." When I was asked to take over the air job, I wasn't really thinking about MTBE, I was thinking about automobile emission standards, power plants and a host of other issues including radiation standards for Yucca Mountain. After discussing the job with Carol Browner, she said as I was going back to my office, "Oh, by the way Bob, now you can deal with that MTBE problem you have been complaining about."

When it comes to the long-term preservation of groundwater resources, there are paradoxes in national policy that must be reckoned with. And I will give you a simple example. When a site is contaminated, a legacy problem which many of us deal with on a day-to-day basis, the big issue is often how clean should it get, at what cost, and are there technologies that will help us do it cheaper and more efficiently. There is a growing policy framework to review these questions in the federal and state statutes, there is a growing history of how to do it, and there is increasing flexibility. And that is only going to continue to expand.

On the other hand, there is a body of policy and law in the United States in both federal and state environmental statutes that looks at groundwater resources from an anti-degradation perspective. This body of law in RCRA, CERCLA, CWA and the SDWA says we do not want these resources to get contaminated; The end point is to keep it the way it is or bring it back to where it was in terms of quality. Emerging clean-up policy is moving toward more flexibility. The end points of those two policy objectives at the national and state level are not currently in the same

spot, for long-term subsurface quality and maintenance. Reconciling these in some way, is something that really needs to be worked on and will require strong science.

The State of Florida presents an example. There is a desire to inject surface water into groundwater and into aquifers to store it and then use it later for either irrigation or municipal supply. The question is, does it have to be treated to drinking water standards BEFORE you can inject it. The idea some put forward is; can we inject it if it is not meeting drinking water standards and then when we extract it for use, treat it to drinking water standards. This debate is continuing and science will be at the center of the solution, but conflicts with the Safe Drinking Water Act will need to be resolved.

Another point I would like to make going back to my initial lighthearted statement about MTBE, is that MTBE could be an emerging legacy compared to our traditional legacies. Since this issue is relatively new, the question really before us is how did this happen? If we are all spending our time trying to figure out how to deal with legacies of 70, 50, 40 years ago, how, while we were doing that, right under our noses, did another one pop up in the last 10 years? I probably have a different view of this having had to deal with ***60 Minutes*** and everyone else on the subject. It is really easy to say "Well I guess the EPA just blew it," or "I guess the MTBE industry pulled one over on everybody." We can continue the search for who messed up on science or what group really caused this problem. I would offer another general policy observation.

In 1990 when the Clean Air Act was debated and this oxygenate requirement was placed in the act, we pretty much knew then everything we know now about MTBE physical characteristics. I have a CRC Handbook of Chemistry and Physics on my shelf from the 1960's! You can look up MTBE and guess what? It says that it is really soluble in water.

So let us transport ourselves back to the summer of 1990 in a conference committee up on the "Hill". Congress is putting the finishing touches on the Clean Air Act and they're having their science review of the amendments (this doesn't really happen but imagine it did). The questions get asked of the scientists and experts, does MTBE reduce carbon monoxide? Yes. Check. Does it reduce aromatics in gasoline and therefore toxics coming out of the tailpipe of cars? Yes. Check. Does it reduce oil imports? (The oxygenate requirement could either be ethanol or MTBE, both of them are domestically derived from either natural gas or corn.) Yes. Check. Is it

easy to blend or transport? Well ethanol's easy to blend at the terminal. MTBE is really easy to transport. Yes. Check. Is it no more toxic than anything else in gasoline? Actually it is less toxic. Check. At this point in the review someone might have asked, "Well what happens if it gets into the environment and it leaks out?" "Oh do not worry about that. There is an underground storage tank program." Check. I can almost guarantee that if this kind of meeting would have occurred, if there really was that science review in the conference committee, they may very well have come up with the same answer, even with all the science before them.

The big mistake that was made in the construction of that program in the Clean Air Act, the reformulated or clean burning gasoline program, was inadequate feedback loops, inadequate midcourse corrections, and inadequate follow-up of any kind. The only thing that EPA was allowed to look at under the law, was did the additive interfere with the engine or did it interfere with the pollution control equipment on the car. If both of those answers were no, then check again, it gets approved as an additive to gasoline. The whole fate and transport and long-term issues were just not a part of the equation. Then as the momentum built for this oxygenate program over the years and all those other checks started to come true, the policy inertia in the mid 90's to change course before it got to be a larger problem was very difficult to overcome.

The point here is that even if we assume that the science was more organized and disciplined at the time and somebody said "yes but," (and this would have taken some guts in that meeting in the conference committee); the reliance on the underground storage tank program to contain the 100 billion gallons of gasoline we use in the United States every year and when there are millions of motorists filling up their gas tanks every day, maybe we should have thought about this a little more! Building a feedback loop, from the field, from people who have to deal with it after it is spilled, was needed and was missing. This is a lesson for the future. If we want to further develop the science of subsurface preservation and maintenance, we have to reconcile policy paradoxes for the practitioners and we must have stronger input from the remediation community into the decisions that get made so that problems can be minimized or avoided.