

US EPA ARCHIVE DOCUMENT

John: Hello and welcome to another one of EPA Region 2's podcasts, a series of conversations about environmental issues in New Jersey, New York, Puerto Rico and the U.S. Virgin Islands. My name is John Senn and I work in the Region's Public Affairs Office. Today we're joined by Walter Mugdan who is EPA Region 2's Director of the Emergency and Remedial Response Division. Walter, thanks for joining us today.

Walter: Thank you very much, John. It's a pleasure to be here.

John: Today we're going to talk about, with Walter, new policy that the Region is implementing in terms of some of its cleanup sites and making cleanups more "green" and environmentally friendly around the Region. So Walter, before we get into the details of this new policy, one of the program areas that your division handles is Superfund cleanup. And that's kind of a buzzword that a lot of folks have maybe heard about as something that EPA does but might not know, specifically, what Superfund does means. Can you just talk a little bit about what the Superfund program is all about nationally?

Walter: Sure. The Superfund program, the Superfund is a colloquial name for a law that was passed by Congress back in 1980 that gives EPA the tools and the resources to clean up abandoned hazardous waste sites across the country. There are literally many hundreds of sites, actually well over a thousand sites in the nation, of major Superfund sites that we are working on to clean them up. And many thousands more that we have already worked on that are typically a smaller subset of sites. But this is the federal government's primary tool for cleaning up hazardous waste sites.

John: And EPA Region 2 is kind of unique in terms of its density for Superfund sites in an area, isn't that right?

Walter: Yes, we are the smallest region geographically but we are blessed with the largest number of sites. I believe the number is over 200.

John: And when a Superfund cleanup takes place, it usually takes a couple of years, at least, and involves all kinds of construction and re-construction and different kinds of operations like that right? These efforts require large amounts of resources in terms of energy use, water use, materials, things like that and that's where this new "green" remediation program really comes in and can really make a difference for the benefit of the environment in a lot of these sites.

Walter: That's right. In the Superfund program what we're inherently doing is environmentally beneficial; we're cleaning up contaminated sites. We're reducing risk to humans and other parts of the ecosystem. However, when we do that work, we can do it in a more or less sustainable way, and the purpose of the policy that we issued and are now implementing here in this Region which, by the way, we call our "Clean and Green" policy, catchy little name, is to carry out our remedial efforts in a way that is as sustainable as it can be.

John: Yea, and that also includes the generation of “green” power. Is that right?

Walter: Absolutely.

John: “Green” power and the use of more environmentally friendly building material such as “green” concrete?

Walter: Yes. I’m going to give you some examples. The policy itself actually identifies four, what we call “touchstone technologies,” in particular which are going to be a default expectation. The expectation is that our cleanup jobs will use these technologies unless there is a good reason not to. So the first, and foremost, is that when we use electricity, we’re going to use renewably-made electricity. When we go to a site we have a construction trailer that gets hooked up to the electric power so that they can run the computers and the lights and all the way down to when we have these pumps running for decades, the pumps use electricity. Our policy calls for all of that electricity being made renewably as much as possible. And the good news is that here in New York, and in New Jersey, anybody, anywhere can buy renewably-made power. You talked about renewable materials, well, like any other construction program where we have big construction activities going on we use a lot of concrete. Concrete is actually the second most widely used material on Earth after only water. And concrete has a huge carbon footprint. Concrete is a mixture of Portland cement, which is the stuff that makes it stick together, and sand or gravel, and water, which activates it. And in the making of Portland cement, there is a huge amount of fossil fuel that gets burned so, believe it or not, the concrete industry generates between five and ten percent of the world’s greenhouse gases. That’s a huge, huge, fraction. Fortunately it turns out that concrete can be made with coal ash, replacing some, or a lot of, the Portland cement. Coal ash has very similar properties of being able to glue together the sand and the gravel that makes up the concrete.

John: Coal ash is a byproduct from coal-burning power plants. Is that right?

Walter: Exactly right. And in those cases the carbon dioxide, the carbon from the coal has already gone up into the air as carbon dioxide which is a greenhouse gas at the power plant. And now the coal ash had to be stored by the power company somewhere and it creates these huge ash spills, it threatens these ash spills, as we had in December of ’08 in Tennessee, a very, very big environmental disaster. If one can use, in a fruitful way, that coal ash, as for example, replacing Portland cement in the concrete mixture, you can actually, for every one ton of Portland cement that you replace with one ton of coal ash, you reduce greenhouse gas emissions by about between 0.8 and 1 ton. So it’s a big, big way of, an easy way and a good way of reducing the carbon footprint of the use of concrete. And, by the way, it costs nothing, the coal companies are delighted to get rid of the ash and so it is really a no cost way of reducing emissions that are associated with the use of concrete. We also often work in landfills. Landfills have been used for dumping contaminated materials in the past. We have to clean those up sometimes. Landfills generate methane gas, methane is a very potent greenhouse gas, 23 times more potent than carbon dioxide. What we’re saying is that, if we’re working in a landfill situation,

we should be collecting that methane gas. Ideally we can use it for an energy source, it functions pretty much the same as the natural gas that you may use to cook your meals on your stove at home and it can be used to run an engine, or run a generator or other things, but at a minimum, it really should be burned, it should be flared to turn it from methane back to carbon dioxide which is still a greenhouse gas, but much, much less chemically potent as a greenhouse gas. The fourth “touchstone technology” that we talk about is, and that we require to be used in most circumstances is clean diesel. Again, many of these are complicated construction projects that require a lot of diesel equipment: cranes, backhoes, bulldozers, dredges, whatever it might be. Fortunately, it is now quite well understood and not very expensive, how to retrofit older diesel engines with pollution control equipment that will dramatically reduce those emissions. This is particularly important if we’re working in a densely populated urban area and even more important if that is an environmental justice area which is an area that has already been disproportionately affected by environmentally undesirable uses and pollution emissions. So we are going to expect that in any larger project, where diesel equipment is going to be used for any significant length of time, that diesel equipment ought to be clean diesel. And we’ve had very good success in using clean diesel at major construction projects around the region.

John: And one of those cleanup sites that’s a large one on our list here in the region is the Passaic River cleanup site, that’s right?

Walter: That’s right.

John: And we’re starting to use clean diesel technology there?

Walter: Just in January of 2009, we issued a decision to go ahead with the first phase of what is likely to become a subsequent series of phases of dredging, that first phase is going to involve the dredging of 40,000 cubic yards of very heavily contaminated material from smack in the middle of Newark and right next to what we call an environmental justice area. So in our decision document we included a requirement that clean diesel be used for the barges, excuse me, the dredges and the materials handling equipment that will be running, pretty much around the clock, six days a week for doing that work. There’s quite a number of sites where we’re already applying some of these concepts but our goal now is to do that sort of across the board and to also come up with additional new ways and new techniques for continually improving our approach and continually reducing our environmental footprint of these cleanups themselves.

John: Yea, so, again, all these little changes make a demonstrable difference in terms of environmental issues and especially helping combat climate change which is an issue on many people’s minds these days.

Walter: Absolutely. It is the issue of our age and every activity that gets carried out whatsoever really ought to consider its carbon footprint, its impact on greenhouse gases and climate change. We’re going to be measuring and reporting on, for our own purposes, on any improvements that we can achieve in reductions of greenhouse gases

through the use of green concrete, through the use of renewable energy, whatever it may be. And we're going to try and tally that up and again, it'll be overall a small impact, but every slice of society, every type of activity has to do the best it can do if we're going to try and achieve the very ambitious objectives that we know we have to achieve in order to confront climate change and the build up of greenhouse gases. So our goal is to make sure we're doing our part and that our carbon footprint is as small as it possibly can. We won't be able to bring it down to zero but we think we can dramatically reduce it from where it is today.

John: This is excellent Walter. Thanks very much. This is a great program and if our listeners want to learn more about it they can visit the EPA Region 2 website. It's epa.gov/region2.