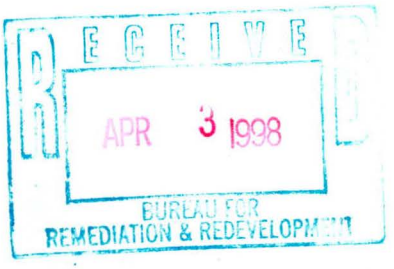
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



PUBLIC MEETING

Moss-American Superfund Site
Vincent High School - Room 180
7501 North Granville Road
Milwaukee, Wisconsin

Wednesday, March 18, 1998
7 p.m.

ORIGINAL
TRANSCRIPT

MS. PASTOR: Okay. I think we'd like to get started. It's 7 o'clock, and I like to try to start on time when I can. My name's Sue Pastor and I'm the Community Involvement Coordinator assigned to this project. I work for U.S. EPA in Chicago, and my coworker is Russ Hart, and he's the Project Manager who's been working on this project for the last few years.

Also over here is Gary Edelstein with the DNR, and he's Russ's colleague and counterpart in the DNR. And Mary Young is up here in the brown shirt, and she's with the Division of Health, and if you have any health-related questions, she'd be happy to answer any questions you might have along those lines.

Hope you all picked up an agenda because I want to kind of stick to the program here. And if you'll notice, we'll -- I'll talk for a couple minutes and then Gary can talk a little bit about how he's involved, and then we'll go right into Russ, who will kind of give a brief overview of the site and the cleanup options we're looking at and the proposed plan, and then we'll take your questions as long as we

need to.

And then you'll notice there's a part there that says public comments, which is a little different than questions because after you've gotten all the questions off your chest, then we'd like to hear from you as far as your opinions, your thoughts for the record, and if you'll notice we have a court reporter sitting over here, and although she'll be taking down the proceeding of the entire meeting, what we're particularly interested in is the part of -- named public comments, and at that point if you have a statement or a thought, not a question, it's just your -- your opinion in statement form, she will being taken that down, paying particular interest to your name or if you're with an organization or governmental body. If your name needs to be spelled, I'm sure she would appreciate that, and if you -- I gave her carte blanche to go ahead and holler out if she can't hear you or didn't catch a word or something you said. So if she does that, don't be offended.

And then, you know, if we have to, we'll try to -- we'll stick around a little bit

after the meeting. Thanks for coming out on such a rainy, nasty night.

We have some overheads that we'll be taking from, and if you notice we have a nice -- nice picture of what a low thermal desorption unit looks like, and Russ will talk a little bit about that in a little while.

I hope that a lot of you probably got this in the mail. This is the proposed plan fact sheet, and if you got that in the mail, then you're on our mailing list, and if you're not, by signing in at the front table there, then you will be on the mailing list and then you'll get a free lifetime subscription to everything we send out pertaining to the Moss-American site. And we try to send out quite a bit. Over the years, probably since about 1990, we've put out oh, I don't know, maybe eight -- seven or eight or nine, nine pieces, so if you haven't been on the mailing list, then you got some catching up to do.

If you're able to follow along with this, we may have gotten a little carried away, but hopefully we're able to explain a little bit about where we're coming from, and if you really

get into this kind of information and you want even more, over at the Mill Road Library is where our information repository is and our administrative record, and that contains every shred of documentation, information, that leads us to our decisions. So if you really want to read up on documents in particular, that's the place to find them.

And if you have a question about which document that would be helpful to you or you're overwhelmed because there's so many and they're so thick, Russ could probably help you out. Feel free to call us back in Chicago. We have an 800 number. It's plastered on the fact sheet and on the agenda. Try to leave a voice mail if we're not there. We do travel. We're here, so we're not in Chicago today, but we'll return your calls. If you have any questions about anything, we do want to hear from you. E-mail is another popular way to get in touch with us these days, and our E-mail address is on there as well.

And we can take your comments, if you don't like to speak before a room full of people, we'll take them written. There's a --

in the middle of the fact sheet there was a little stand-alone mailer. We've already gotten a few in the mail already. And if you just want to hand that to us tonight, you can do that. If you want to take your time and mail it in, you could do that, too. If you want to E-mail us a comment, you could do that, too. Pretty much any form in writing or verbally tonight with the court reporter would be the way to go.

Let's see. Was there anything else I wanted to talk about? Oh. The comment period, we're right in the middle -- we'll we're sort of in the front end of the comment period. It started last Monday, March 9th, and it runs through April 8th. So if you do want to make a comment, do try to have it postmarked by April 8th. And if you choose not to make a verbal comment or hand us one tonight but want to think it through a little more and review some of the materials, your comment that comes to us any time during the comment period will also go in the record just as much as anything we would take from you tonight. So it all counts. So I think then I will go ahead and let --

MS. YOUNG: I'd like to introduce

Jim Magowski (phonetic) from the City of Milwaukee Health Department, too, if you would have questions and want to direct them -- I mean as time goes by. I'm sure he'd be happy to help.

MS. PASTOR: That would be good. Gary, you want to talk a little bit about how you're involved here?

MR. EDELSTEIN: I'm Gary Edelstein. I'm an environmental engineer. I work in Madison. I've been the project manager for the site since about 1989. The site is classified by EPA as a federal enforcement lead. What that means is that EPA is the lead agency in charge of this cleanup under Superfund, and the State is in a role where we are providing support to EPA. That's our role is support.

In this instance, EPA, DNR, and Kerr-McGee Corporation have signed an enforcement document that has been entered into federal court called a consent decree. And that consent decree outlines Kerr-McGee's responsibility for carrying out the remedy as selected by EPA.

EPA selected the remedy for the site

originally back in 1990, and subsequently that consent decree was negotiated among the two agencies and Kerr-McGee, making it a three-party decree. Those are the three parties.

As the signatory to the decree, that gives the State the role as the support agency as is clearly spelled out in the decree, and in that decree our role is to help EPA review technical submittals prepared by Kerr-McGee as part of the cleanup plan, provide information to EPA and Kerr-McGee about State laws and requirements that outline the State standards that have to be met for the cleanup.

In addition, should the remedy be changed or should there be any changes to the consent decree, the State must concur because we are a signatory to the decree.

Tonight we will have some comments on the proposed plan. We've been working with EPA and Kerr-McGee on revisions to the remedy that was selected in 1990, and the proposed plan that you have in front of you is the first culmination of how the remedy will be changed or could be changed as related to what's going on on the wood treating site.

In the future there may be changes to the river portion of the remedy, and those are -- there are active negotiations to deal with that. With me tonight is Benioti Felix (phonetic), here with the very nice tie on. He's assisting me on this project. He's here in the Milwaukee office of the DNR and he's a hydrogeologist, so his responsibility has been to work on the groundwater portion of the remedy at the wood treating site. And he's -- if you have questions about anything relating to the cleanup of the site, I'm here to answer them, but if there's questions related to the groundwater portion of the remedy I may have to refer those to Benioti. Thanks.

MS. PASTOR: Okay. And now Russ will -- I think we'll lower the lights, but I wanted to also acknowledge our science teacher here, Mr. Woida, who set up a little virtual tour of the Little Menomonee River. I guess it sort of -- He says our web site is good, so this is a supplement to the EPA web site. So do check that out.

We also have our web site on the back, and if you'd just add after www.epa.gov,

if you add slash Region 5, you'll pick up the Region 5 home page as well, and this proposed plan fact sheet is on there and our press releases, so you should be able to find those things quite easily. They're pretty clear. So thanks again for that, and now we'll have Russ go ahead and talk to you about the proposed plan.

MR. HART: Okay. I'm glad I was able to kind of turn on the overhead projector there, too. I happen to -- I happen to like, you know, the Dilbert comic strip and there's the one in there where the boss is using the overhead protector and he flips it on and the next little strip says I'm blind, I'm blind and, you know, Dilbert and Wally are saying, sir, don't look directly at the light. They're trying to help the boss out there a little bit.

But anyway, what we'd like to do tonight is kind of focus on two major points with regards to the Moss-American site, and one is shall we consider the nonresidential exposure scenario for portions, or perhaps even all of the site, and also should we consider the substitution of the technology of thermal

desorption as a treatment technology for soils and have that occupy the role that was formerly played by bioslurry treatment technique.

So if we could go to the next slide there, Sue. Thank you.

MS. PASTOR: Give Dilbert a minute here.

MR. HART: This is kind of the executive summary slide of the whole talk, so if you'd just sort of like to get a Reader's Digest view of it, or if you'd like to get straight to the chase there, this kind of sums up the main reasons at this point in time as to why we feel that some of the changes here would be warranted, especially with regards to thermal desorption.

One, and we'll go into detail in more of these points later on in the presentation, but we kind of feel that compared to the bioslurry approach, at least with the types of PAH materials that we have at Moss-American, that thermal desorption would give us some superior results as far as the efficiency of removing some of the toxicity of the soils.

Also, it would appear from some information that's been submitted to us by the Kerr-McGee folks, checking with vendors and suppliers of -- of these types of equipment, that we can probably get the thermal desorption technology run for about half the cost on a cubic yard basis compared to the act of sort of a customizing the bioslurry approach and having that built as sort of a permanent feature there at the site.

And let me kind of just kind of clarify this next point. One, again, you'll see from other material that we have later on in the presentation, in terms of speaking about like a batch of material that's to be treated in this fashion, the one thing that we'll show you, you can run something through a -- a batch through the thermal desorption unit in maybe about 85 minutes, an hour and a half, a couple of hours. We don't mean to mislead you in any way, shape and form and say once we go with this that the site's going to be cleaned up in a matter of few hours. It would obviously be several hundred, if not maybe a few thousand batches of things to be run through, but nevertheless, compared to

the time it would take to run a batch and run it through the bioslurry unit, that was estimated there sometime ago to be about 15 days for a batch. So we think that has some advantages there.

Finally, and this is kind of an important point because it's linked with groundwater developments here at the site, too. For one thing, the -- we feel that the design time and sort of the lag time in making a decision to go forward with this particular technique, that it could be done in a significantly less amount of time than kind of customizing the design for a bioslurry unit.

Basically, vendors can supply, you know, prebuilt thermal desorption units. In other words, if we were to go with this, nobody has to sit at a drawing board and figure out every nut and bolt of what a thermal desorption unit would look like. They're like prebuilt, they're mobile, and they can be brought to the site.

On the other hand, you would have to do a lot of customized design for a bioslurry unit. And we should note, too, in a related

development, that we have now received final design plans for the groundwater unit to be built to manage groundwater at the site, and there are two or three soil points that need to be taken care of before that groundwater unit could really operate efficiently. So we kind of think those are some of the leading reasons at this point in time as to why we should think in terms of thermal desorption.

When I was first assigned to the Moss-American site, and that was back in 1994, to give you a feeling of overwhelming confidence I had not been assigned any creosote sites before, so what that basically left for me was to read up on records of decision involving other creosote sites around the country, and for the sites that we have listed up here now I talked with the -- my counterparts, remedial project managers assigned to each of those other sites, and basically I think the reason it would be good for us to spend maybe five or 10 minutes and go through this little bit is that there are some lessons that can be learned about from -- from things that have been tried and worked well at other creosote or wood preservative sites,

things that didn't work so well at some of those other sites. I can really probably talk, you know, for maybe 15 minutes for each one of these things, which would be much too much time for that, so we're going to pick one of them and I think it's going to get several of our points across, and that would be the L.A. Clark & Sons site in Virginia.

Some lessons there I found after talking with the project manager at that particular site, one, on the good side of developments is although we have a complex enough mixture of contaminants at the Moss-American site, it could really actually be a lot worse because basically, wood preservative sites fall into two very broad categories; those that simply use creosote alone as the basic means of wood preservative, and those that use other mixtures or other blends, and one in particular they used at L.A. Clark was a substance called penochlorophenol. So they tried to preserve wood with creosote, they'd used penochlorophenol, and the particular thing about penochlorophenol that gets to be a bit notorious is that when you have some kind of

heavy chlorinated organic molecules like that, they can be cross-contaminated with materials like dioxins.

So for a site like L.A. Clark, they are using a biological approach as far as -- as trying to treat some of their materials. And what the fella told me there on L.A. Clark is because that site used both, creosote and penochlorophenol, probably contaminated with dioxins, he would have a particularly rigorous time trying to handle the residuals thereof.

The standards for appropriate control are about 100 times greater than they would be for simply a creosote site. So he's kind of using a biodegradation approach there. He did also have -- that same gentleman, he had a nonnational priorities list site, which was simply a creosote site only, and he used thermal desorption there and informed me he had very, very good results as far as removal efficiency. So that's good to learn.

One thing that he learned and, of course, they were predicting at that time that they had their record of decision on L.A. Clark, they were assuming that they were going to get a

pretty high removal efficiency using a biodegradation approach, but once they got going and did some pilot tests they found, and it's the same finding that we have at Moss-American, that you can get a fairly good removal efficiency with some of your smaller two and three-ring type of PAH compounds, but when you get to the four and five and six-ring compounds, the efficiency drops off very sharply so that you're no longer getting like a 75 or 80 or 90 percent removal. At best you might be getting a 30 percent removal. And that's about the same thing that we found at Moss-American, too.

So there are some lessons to be learned, and the one nice thing was that basically we were in the same boat as L.A. Clark. The gentleman, by the way, on that site found that he had to do a ROD amendment in somewhat the same fashion that we do because his predicted removal efficiency was not nearly as great as he thought, so the cover he was going to put over things later on had to be beefed up and made much greater as far as the dimensions.

Okay. Since the -- the 1990 ROD and, you know, there has been some further

things that we've learned on-site specific basis out at Moss-American, and that came under the category of some predesign work which was basically performed pretty much during the summer of 1994. Well, the pilot test might have been like a year or two earlier than that, but as I mentioned, this is kind of a repeat thing here, again, the pilot test that was done with how well did the bioslurry approach work at Moss-American, we had basically the same finding that the gentleman had at L.A. Clark, pretty good removal efficiency with some of the lighter PAH compounds, the simpler ones, but it really tailed off pretty badly when you got to some of the heavier compounds.

One thing, too, that we did find and has been worked on and that's alluded to in the plan, I believe, is that we did have an area of about an acre in about the middle of the site, pretty close to where the boundary line is between the Union Pacific Railroad and the county, and about nine or 10 feet down there was a -- well, there were several extraction wells put it, but basically there was sort of a pocket of some liquid free product creosote. To date,

there has been about 10,000 gallons of that material collected and sent off the site.

And also, one thing that was not really known at the time of the original record of decision and it was sort of recognized as a -- a data gap that should be investigated a little bit further was there really wasn't very much in the way known about groundwater conditions on the east side of the Little Menomonee River. There was some work done during the time of the predesign work and basically, luckily to report, there was really very minimal or no contamination of the groundwater on the east side of the river. So that made things a little bit simpler.

A couple other things that we do that we have kind of looked for is other articles that might help us along, we'll get to this, this is actually about the title of an October of 1997 report that EPA compiled. What this particular report did was to take a look at creosote sites where data was available in both the U.S. and Canada and kind of compile them, and it's a wide variety of treatment technologies that were used and removal

efficiencies that were derived from different technologies.

And then, too, in kind of a close cousin of creosote sites is, you know back in the days before there were pipelines kind of crossing the country and bringing natural gas to your home, a close cousin of a creosote site would have been your local hometown gas manufacturing plant where basically they would take coal, kind of subject that to heat and so forth, generate gas locally.

Materials that were derived from that also have a lot of PAH contamination, the same way the creosote site would, and what -- we got some reports in from the Gas Research Institute that basically in the early '90's investigated the technology of thermal desorption and found that they were getting 90 percent plus removals on using that particular technology and working with contaminants very similar to what we'd find at Moss-American.

Now, we've used the term here officially on the board of thermal desorption, and let me note a few things about that. There's kind of a picture up there to kind of

give you an idea of what a typical unit would look like, but the basic concept behind it is you are not really combusting the overall soil mass. What you're basically doing is striving to raise the temperature, along with some agitation and some mixing of the soils, so what you're trying to do is sort of like volatilize and drive off the contaminants of concern.

Now, once you've done that, obviously you want to control it in a good fashion so that problems aren't posed to the environment in the way of air emissions. And so what you do then is you would have -- you would basically control that in one of three basic ways. You would have these off gases, so to speak, either be routed through some activated carbon so you could catch them in that fashion. You would condense them, cool them, get them back down into their liquid state, but in a concentrated liquid state which has now been separated from the soil mass, or if you wanted to you could flare them off, but with the understanding that if you happen to pick the option of flaring you must meet, since you began with a hazardous waste to begin with, since

creosote is that type of material, you must reach a removal efficiency rating of 99.99 percent as far as an acceptable removal efficiency for working with creosote. If you are working with dioxin or anything that had materials there, you have to add two more 9's and make it 99.9999 type percent.

Again, two main differences as far as the technique of thermal desorption versus out-and-out incineration and, I guess, the reason I'm kind of stressing this is that typically in a -- in a community, people will tend to say I don't like incineration because gee, you're kind of burning something and you may have combustion products that you might not even know of and that's bad, so I don't like it.

But the thing that kind of separates thermal desorption from incineration is that one, you are not really combusting the overall waste mass. You are heating it up. You're working at a temperature of maybe say 500 to 900 degrees Fahrenheit as opposed to a full-blown incinerator which might work at say 2200 degrees Fahrenheit.

And like I say, the main difference

in incineration, you are trying to combust the entire waste mass. In thermal desorption you are not attempting to do combustion. You are using heat, but you are not combusting. And I can picture some people going back out to the parking lot and said well, the guy said he's using heat and that must be combustion, so I don't believe him, but let me just give you a couple little examples from like around your house.

You dry clothes. You put them in a drier. You take them out. Are they a charred mass? No, they're not. Hopefully they're nice fluffy, dry clothes. You used heat in the process, but you did not combust the clothes. You put a roast in the oven. You heat it up. Did you combust the roast? Well, if you're a particularly bad cook maybe you did, but the idea is yes, you used heat for a desirable purpose, but you did not combust it.

Okay. In the proposed plan, this is one thing we don't actually have a particular slide on, but that's okay. You can leave that one up there anyway, Sue. We noted a little bit about the topics of presumptive remedy and

administrative reform, and I would just like to go over those concepts with you here for a little bit.

Presumptive remedy basically answers a couple of questions, and one of them is gee, haven't we seen this before? And basically where I'm coming to you on that is since the Superfund program has been in existence now since the early 1980's, I think the agency has sort of begun to build up kind of a critical mass of gee, we've seen a certain kind of site before, we've seen certain sites that have the same types of pollutants over and over again, and what you try to do is you put yourself in a situation say well, if we have seen this before, do we necessarily have to reinvent the wheel? Do we necessarily have to have a feasibility study as we did back in 1990 that was about three inches thick?

I should note that on -- for the class of sites called wood preservative type sites, the technique of thermal desorption was added as a presumptive remedy in 1995.

Now, with regards to administrative reforms, the whole idea there, you know, people

would basically criticize the agency and say well, sometimes you're being too conservative, you're not necessarily being fair in the way that you go about the conduct of your remedy. And over the -- a time period of like say 1993 to 1995, over that three-year span the agency came out with about oh, a dozen or so per year of these administrative reforms. A lot of them had to do with liability or enforcement, things that we won't bother about here, but two things that would be of particular significance to the Moss-American site and what our headquarters kind of encouraged the Region, such as what I represent to do, is to look for sites where some of these administrative reforms might be applied. And there would be two particular types of administrative reforms that would apply to the Moss-American site.

One is the idea of look for more probable future land usage and gear your site cleanup to that, and the other is don't necessarily stick yourself with a technique that really might not necessarily be the treatment technique that you should use on the Moss-American site.

Let me kind of clarify some remarks here on bioslurry biodegradation. I'm not saying that biodegradation is bad. In its place it's a perfectly acceptable technology, but as I say, it's geared more to the PH-type chemicals that are the smaller, the more simpler type of variety. When you get into soils that have as their chief contaminants features more like in the heavier series of the PH's, it would be appropriate to maybe move away from a biodegradation type of approach.

Let me kind of note some soil areas and gee, I might actually get to use my pointer here. These would be some approximate spots around the site where soil treatment would seem to be called for, and it would basically be three reasons as to why we might subject a given area around the site for thermal desorption.

At the time of the original record of decision, the main thing that we were concerned about was simply the presence of excessive amounts of the carcinogenic PAH variety. Now we're kind of worried about three particular things.

Basically, any of these points could

be viewed as having some excessive PAH levels associated with them, but one thing that we know, and in some areas that -- where the pumping is ongoing now, we're looking for areas that have the -- the free product creosote associated with them, excavation here might go down to more like the nine to 10 feet depth as opposed to maybe like a -- a four or so foot depth for some of the other points.

We also want to take into consideration regulatory developments that the State has had as far as wanting to get appropriate groundwater cleanup. It's not simply a case of trying to protect somebody from direct contact with the PAH. You want the soils in such condition that they longer pose a future source problem as far as further groundwater contamination.

And so there are -- these are kind of smaller scale, kind of less frequently found around the site in some of the PAH areas, but there's a little class compounds, they're commonly known as BTEX. It stands for benzene, toluene, ethylbenzene and xylene. They're a group of volatile components which could be

associated with like fuel oils or with creosote. There's a few spots around the site which need to be addressed so that they're not left behind and pose a risk as far as groundwater problems. So basically, these are the areas that we kind of need to look at.

We have a couple little hash marks here on the map. Let's get an idea here of how things might change on the Union Pacific side of the land, which is basically like the western most 20 to 25 acres, and this isn't exactly to scale, but basically on the eastern side of the site, the eastern 60 most acres is land that belongs to Milwaukee County.

As far as like a direct contact threat, and that might be absorption through your skin and so forth, at the time of the original record of decision we had a level in some places around the site of below -- well below one part per million. Actually, in some cases as low as 0.06 parts per million. And that would basically be using to protect a potential residential user of the site, but let's kind of take a look at the Union Pacific land.

Basically, ever since the early 1980's Union Pacific Railroad has been bringing railroad cars to the site, they have been unloading vehicles from the -- those cars, using it as sort of a staging operation, and we kind of think, especially since we received correspondence from Union Pacific Railroad saying that they would be willing to impose deed restrictions on any future property owners to keep that site in an industrial nature, we think it would be fair on the Union Pacific side of the property to consider usage of an industrial exposure scenario. Per the calculations that would be done according to the State rules on this, the cleanup level for that would be approximately 3.1 parts per million of carcinogenic PAH's.

Now, let's take a look at the Milwaukee County side. We are aware that the County has a park and open space plan. We are aware that within that plan there's some obvious areas all up and down the Little Menomonee River, they're kind of viewed as being logical for use for recreational purposes. So we want to, at this time, invite your comments as far as

recreational use on the Milwaukee County property.

We know that that particular plan has been adopted by the County. What we would be looking for before we would really go forward would be a willingness on the County's part or their reaction to it as far as having some written deed restrictions to say that recreation would be okay.

Just to give you an idea of comparison for direct contact purposes, since a recreational user would not be at the site nearly as often as an industrial user, the appropriate cleanup number for direct contact only would be approximately 49 parts per million. But is that the final end of the story? There's one other thing that we need to bring into the equation here, and that's to have a brief look at the Little Menomonee River itself.

We know the State and Kerr-McGee, too, have both been doing some calculations. One thing that was in existence at the time of the original record of decision was, with regards to the river, to use a sediment quality

criteria cleanup value of three parts per million, but both the record of decision and the consent decree said or the maximum probable background, whichever is greater.

Well, both the State and Kerr-McGee have been doing some calculations on that and basically, we have gotten correspondence in from Wisconsin DNR that basically says it would be appropriate, considering the somewhat urbanized situation, for the Little Menomonee River to use 15 parts per million throughout the river, like from Brown Deer Road maybe down to the confluence with the Menomonee, as a desirable cleanup goal as far as sediment levels for the Little Menomonee River.

Well, that kind of triggers something else. If 15 parts per million of sediments in the river is a desirable cleanup value, then maybe you would need to temper this 49 parts per million you got for direct contact. You could do that -- This basically comes under a State statute dealing with the erosion and surface runoff protection. There would be a variety of control measures that you could use to try to clean that up or address that.

So anyway, let's move along to the next one here. Okay. At the time of the original record of decision we identified -- let me just note one little insertion here as a bullet, carcinogenic contaminants, well, actually I should stick in the terms PAH contaminants because actually benzene has a little bit of carcinogenic properties, too, but here are four of them, and that's really all the more we need to say and we'll move along to the next one, but we'll kind of remember this.

There should be one in between there. What I'm looking for is the one about the efficiency. That's it. We got it. There you go. That book that I mentioned before that came out in October of '97 about the comparison of the different treatment efficiencies using -- utilizing certain treatment efficiencies at different sites and different technologies, okay, this is what we found, and I think it's kind of and, of course, really the benzo fluoranthene is really kind of representing two compounds because there's two derivatives of that, but take a look at what they got as far as removal efficiencies using a bioslurry approach

at a wood preservative site in Mississippi.

It, like L.A. Clark and like Moss-American, they did not do real well and got some, you know, removal efficiencies in the 30 odd percentile and so forth using this particular treatment technology. For those same pollutants using a thermal desorption approach, and this was at a site at British Columbia, Canada, you can kind of see a rather significant difference as far as the removal efficiencies that they got.

The conditions, by the way, for using the thermal desorption, at this time they were running at 900 degrees Fahrenheit and the retention time in there was 85 minutes.

Okay. I think we can move along to the next one. Okay. When we evaluate either like a -- a record of decision or make a decision thereof or an amendment thereto, there are nine basic decision criteria that we use. Let me just kind of note, because really we don't need to go through the whole list there, would be four that would be of some significance as far as where we are now.

With regards to ARAR's, you can kind

of see what that stands for, one thing I should note about the subject of the regulations that we need to follow, they are considered to be frozen at the time of the original record of decision, and the reason for that is if somebody's working away at a design and either say like the EPA or the State comes up with a new regulation standard, it might be pertinent in some fashion, but my gosh, you don't want to throw out your whole design document just because somebody passed a new rule.

However, if you do actually make a significant change in the record of decision, such as what we are proposing to do, then you must consider new rules that have been brought to bear and update yourself in that. So as we have kind of noted, there are some things that we need to comply with as far as certain new developments in the way that the -- the State would want direct contact numbers for PAH's calculated, in the way that groundwater should be protected, the whole classification of thermal desorption unit comes into the classification of miscellaneous treatment unit, and there are either like Federal or State rules

on that, and air emissions with regards to that are also regulated. The State has a specific chapter of rules dealing with that, so we need to take that into account.

As you have kind of seen, and I think that a significant betterment of using a thermal desorption approach is, especially with regards to enhanced removal efficiency compared to the bioslurry approach, when we -- one thing that we're supposed to strive for in our remedies is a reduction of contaminant toxicity or mobility. Well, the BTX compounds have a certain mobility factor associated with them, and the heavier PAH compounds are also the ones that happen to be more carcinogenic. So if we can control them more effective perhaps with a -- a thermal desorption technique, I think you would get better toxicity removal, too.

Implementability. That has to do with some of the things I talked about earlier as far as do you need to design from scratch, and with -- with a thermal desorption I think the answer is no. Obviously there needs to be some planning that goes into that. You need to, for example, would need a verification plan to

take some samples after you've been working with the soils to make sure you got everything that you got, you would also need to be doing some sampling saying like after you treated a certain amount to see if you were getting it down to sum desirable levels, but basically you don't have to design from scratch and every nut and bolt as far as what would go into that. And, again, cost would seem to be a -- a definite improvement on about a half cost on a per cubic yard basis using thermal desorption.

Okay. Let's move on to the next one. We're going to skip over this kind of like real lightly and we've stressed the two main points to you, and that is, should we use thermal desorption instead of bioslurry? Should we adopt some nonresidential usage scenarios around the site?

But one other thing that we noted, and it's sort of us saying maybe it's time to pull back a concept that we originally wrote into the original record of decision. Usually what we -- Oh, by the way, this word is wrong. It should be soil, not clay. That's a typo there. What we generally strive for at

Superfund sites, if you put on some sort of a cap over the materials that you cleaned up or some materials of concern, 99 times out of 100 you say gee, I really want to stop the infiltration of ground -- or, you know, precipitation, rain and snow, from getting down into those materials.

At the initial ROD on Moss-American we said you know what, maybe the soil's only very lightly contaminated, and maybe to have kind of a real sort of a permeable cap to actually encourage contact from runoff and so forth, it would help flush some of those materials out.

Well, let's move along to the next one now. With the finding of some of the -- the free product areas, it occurred to us that, you know, that might not be a desirable thing to do. Obviously, the pumping that has been gone on for the last three years now has taken out a good amount of that, and referring back to some of those spots I mentioned to you where we really want to excavate down to a -- a greater depth in some of the other points to get rid of some of the rest of that, but still it's kind of the

situation that you can really, really try to get rid of all the free product, but there may be some little pocket down there that you can't necessarily find or maybe it's just not worth going after anymore. And so that kind of gets us to rethink the concept of what the cap should do.

And what we would kind of think we would want to do is providing that we were using some thermal desorption is to use a cap that would look something like this. And in this case clay is the correct name to use, not soil. Clay would also get a layer of -- of soil over it so that the clay doesn't freeze and that way it helps retain its relatively impermeable nature.

So that we -- As what we would do on the great majority of Superfund sites is to say yeah, we really want to kind of block the precipitation from getting down in there.

Now, one more slide and we're almost out of here or -- If we didn't do much of anything in the way of treatment at all, and if we were to take, and somebody says how do you contain a hazardous waste. Well, if you took

that thing literally, you -- you're adding some other bells and whistles under the slide that we just showed you. You've got synthetic membrane here and also you've got some stuff underneath, leachate collection system, you've got sort of a sandwich, you've built a cell around this waste material. Literally, if you said hey, what's the hazardous waste containment thing look like, it looks like this, but our reasoning is that well, geez, if we're doing some pretty good removal efficiency involving thermal desorption, we don't need a Cadillac-type of containment unit like that. The one that we just showed you is the one that we think we ought to use.

So finishing up, and Sue has really already given you a pretty good idea of the next step. Obviously we'd like to try to have some -- a discussion with you here and entertain your questions. I may not be able to answer them. Gosh, I don't know. We think with regards to the comments themselves, we won't, you know, attempt at this particular meeting to answer you with regards to the comments. What we basically do is compile them and take them back and try to generate, you know, internally a

responsiveness summary and then we kind of see -- we analyze the comments, we see what we should do, depending on how -- whichever way we go, basically either keeping the status quo and making some of the changes that we've talked about, we would again be in discussion with Kerr-McGee however it turned out on this, and also as Gary alluded to in his remark, there are ongoing, at this particular time, some -- dealing more with the sediment management aspects of the site. We are not forgetting about that. We know that area of the site needs to be addressed.

What the trustees, and by the way, EPA per statute is not a natural resource trustee. On the Federal side the people that would come into the picture would be representatives from like the Department of Interior and their -- their fish and wildlife people, and also on the Federal side like the NOAA people, the National Oceanographic & Atmospheric Administration people. So those would be sort of the representatives on the Federal side.

I mean obviously EPA will stay in

touch. We will learn how those things are going, but we are not like a direct trustee ourselves. But basically what the idea here is to -- is to attempt to integrate some concepts of restoration and remediation and develop a -- a plan on that, and then we'll kind of see where we might want to go on that with regards to sediment management.

So with that, thank you for your attention, and I guess that kind of concludes my prepared remarks there anyway.

MS. PASTOR: So if you have a question based on Russ's talk, this would be the time to ask. So what questions do you have?

AUDIENCE MEMBER: Do you want me to identify myself?

MS. PASTOR: More for the comment portion of the meeting, unless you want to.

AUDIENCE MEMBER: Question then. First of all, this is my first direct exposure to this matter in spite of the fact I live six blocks away, and I've lived here for 22 years, but I've always known that that site was there and I knew something about the issue.

But I guess my basic question is,

well, two of them actually, and maybe you don't have the answer right now, and so you know where I'm coming from here, I just wanted to feel you out as to what you know or what people know in general about this site in terms of the mass movement of PAH's to the river.

I would assume that the river is kind of like an outlet, if you would, for the groundwater underneath the site. If that's -- That's what I'm assuming.

Do you know what, if you would, the flux of PAH's to the river might be now, and then what they might be if you implement either Plan A or Plan B. Excuse me. Alternative 1 or 2. Has that been assessed?

MR. HART: I couldn't give you like say a quantitative number as far as like the actual mass that goes in like per hour or per day, but simply more in qualitative terms we do know that the groundwater is contaminated. We do know that, as I noted in my remarks, that we do have some final plans in on how to contain and treat that groundwater, but a couple of points that were sort of up in the central part of the site, those ones that were noted in red,

the ones that are noted as far as having some likely free product creosote associated with them, to get -- they would likely interfere with groundwater treatment operations and we really should try to get those points out -- out of the way.

From a qualitative point I would say yes, there is a continued influx of some PAH's from groundwater in the site to the stream. I could not really give you a real good quantitative handle on that.

AUDIENCE MEMBER: The only reason I bring that up is that one of the treatment technologies is, roughly speaking, about twice the expense of the other. If, in fact, both of them give you comparable results in terms of limiting or decreasing over time, and over time I'm speaking years, decades, perhaps, if you decrease the flux to the river, either way they're virtually within percent of one another, I think that would be a valuable thing to bring out in your report, that in terms of the bottom line how this site is going to in the future impact river quality, I think that would be useful for -- for you to bring out in the

report. That's my point.

The second point that I wanted to ask, or the question I wanted to ask in terms of the collection efficiency on the stack, you mentioned a 99.99 retention. Does the site degas currently? If you walked on the site, would you have a -- a noticeable odor either on a hot -- like on a hot summer day, would you notice that?

MR. HART: I don't -- I don't really think so. I mean I've walked around the site several times. As far as like odor problems or things like that, maybe my nose might be less sensitive than some others, but no, I haven't really noticed any --

AUDIENCE MEMBER: There's no noticeable degassing or anything?

MR. HART: Not that I can see or sniff.

AUDIENCE MEMBER: I was just curious because if there was, one analysis that -- that either it has been done or maybe it hasn't been done, but one analysis would be to look at the natural flux from the site, degassing from the site, versus what's coming out of the -- the

chimney in terms of your -- your risk assessment to the vicinity, you know, the neighbors and that kind of thing. That would be a useful analysis.

MS. PASTOR: Gentleman right next door.

AUDIENCE MEMBER: Is it possible that the answer to his question is because that site has been there a long time and that whatever volatiles are there may have been gone out a long time ago?

MR. HART: That is possible. I would certainty grant you that. Again, I couldn't give you any quantitative terms, but I think your concept on that sounds quite good.

AUDIENCE MEMBER: My only concern is that I walk my dogs, my son and I, we've been walking along from between Bradley Road and Good Hope for years, and we never knew anything about this until my son saw this in the paper Monday night. And if that river is contaminated, why isn't it posted along the river? Because the neighborhood kids from my subdivision play in that river all the time. Just last Saturday I saw at least four or five kids building a bridge

across it. You know how kids are.

MR. HART: Well, that's a very good point.

AUDIENCE MEMBER: The children from our subdivision, Riverton Heights, are down there quite a bit, and from the condominiums.

MS. PASTOR: Russ hasn't been working on this site as long as I've been involved in it.

AUDIENCE MEMBER: If this is that dangerous, it should be posted.

MS. PASTOR: A long time ago we did have signs and I think they made nice souvenirs.

AUDIENCE MEMBER: But there's a walkway along the Little Menomonee. The City just put that in. There's a bike trail, you know.

MS. PASTOR: We're not disagreeing with you, but we used to have signs put up and they disappeared about as fast as we put them up, so I mean that's -- that's --

MR. HART: That's -- That can happen not just at this site, but at other ones, too.

MR. EDELSTEIN: It did happen at this site. The County did post some signs.

AUDIENCE MEMBER: There used to be signs along the river, too.

MR. EDELSTEIN: Last time I was out and walked the river some of them were still up. Most of them were gone. And the -- the -- I would suggest that the County be asked to keep putting signs up and keep maintaining them.

AUDIENCE MEMBER: Between Bradley and Good Hope because that is for recreational use. That is a bike trail and children use it a lot.

MR. HART: That's a good point.

MS. BROWN: I'm from the State Health Department and I think that's a good suggestion and we'll talk to the County or whoever might be able to do that.

AUDIENCE MEMBER: There's a marsh behind the subdivision and kids are there all the time catching frogs. There's no sign on that march much up and down there.

AUDIENCE MEMBER: I would just like to ask why there's no synthetic membrane in the first two diagrams? Why would you not put a synthetic membrane in just out of course?

MR. HART: Sure. Yeah. I guess our

feeling is on that is that if we get a relatively high degree of -- of removal efficiency as far as working with the contaminated soils there using thermal desorption, we're kind of thinking that that should be sufficient and so forth.

I mean obviously you're -- you're right. It could certainly be more conservative and so forth if you were to have the membrane in there, but we were just kind of coming at it from the standpoint that it might not actually be necessary. That using clay and protecting it from freezing would be sufficient, a sufficient increase of lack of permeability from what we were talking about initially, which was just plain soil to be sufficiently protective, but I --

AUDIENCE MEMBER: Yet if you're saving half the money, isn't it worth it to do that extra, you know, little ounce of protection? Because I mean with the whole landfill thing, that's really controversial as to whether that does prevent leachate that, you know, there's a lot of people that think that, you know, eventually you will get the leaching

and so I just --

MR. HART: Sure. No. We could certainly try to take a look at what the extra incremental cost might be on that.

AUDIENCE MEMBER: First of all, Jim McGuigan. I'm the County Supervisor out here, this is my district, and I have a couple concerns. First of all, you talked about working on remediating the site itself, but what about the sediments that go downstream all the way to, I believe Silver Spring right now? Is there any plans to do that? And what are the dangers in the river of, for instance, kids walking in it?

I know that several years back there were some kids that experienced some burns in the '70's, but now that -- I would imagine there's probably some sediments from our recent flooding that are on top of that. Do you know -- Have you done a recent test to see where the layers are and how far down any -- any free product that might still be in the river, how deep would that be, and what is the chance of -- of a youth actually being injured by it? And my final question, I know that's a mouthful for you

to respond to.

MS. PASTOR: We'll try to pick it apart.

AUDIENCE MEMBER: But you talked about finally capping the site, but there -- one thing that occurred to me and that's that that cap is going to have to be mowed yearly to prevent cracking of the -- of the clay cap by new trees that grow on that. Is the EPA going to take care of that, is the DNR going to take care of that, or is that going --

MR. HART: With regard to your last point, since the active remedial design, remedial action work under the terms of the decrease it's supposed to be done privately, we would expect it to be financed by Kerr-McGee and their consultant or operative. As far as who would do the work, there would be oversight from the agencies to -- to have a look at that and make sure as far as the -- the maintenance thereof and so forth, but the financing of it, we would expect to be done privately under the terms of the decree.

As far as the -- the sampling and so forth, no, there hasn't been any like broad

sampling in the river since about 1994 as far as any other further information on -- on the sediments and so forth.

As I kind of note, we are -- we are not forgetting about or omitting sediment management, but actually, to go into a bit more detail with regards to your question, and it's not that the -- the agencies or the private parties are trying to put it off, but what we are kind of wrestling with are some concepts as far as sediment management and so forth.

Again, noting back at the time of the original record of decision which had your sediment quality criteria of three parts per million, in essence, I think the feeling at that time was -- was that that kind of precluded you from doing much in the way of any dredging options with regards to the river to. Meet a number that low, you were pretty much stuck with or had to go to a rerouting approach.

However, if the number has changed in terms of the maximum probable background calculations that have been done since the time of the ROD, and now the number we're talking about for appropriate sediment cleanup is 15

parts per million, now you have dredging technologies that in all probability could meet that number. Could meet a 15.

And so we have, the -- the parties to the decree have discussed those concepts. We have discussed in terms of well, could you use some wet dredging or maybe even a dry excavation approach. What we still need to work out would be some of the logistics as far as implementability and talk about should that be offered in terms of some other sediment management approach.

That, in essence, is where the discussions of the natural resource trustees are now focusing on. And as I say, they are trying to integrate some concepts of a restoration with remediation. So that's really, I guess, about how I can answer your question at this point in time.

We are not forgetting about the subject of sediment management. No, there hasn't been any sampling that I can think of since about the 1994 time period, but we are considering some concepts of sediment management that could represent a fundamental change from

the original record of decision.

MS. PASTOR: He had one other question about the children walking in the river and possible hazards to them.

MR. HART: I guess I probably really wouldn't be qualified to say. I mean obviously the thing as far as the history --

MS. PASTOR: But Mary Young from the Division of Health is qualified.

MS. YOUNG: I'm not qualified at this meeting to give you an opinion about that, but I would be happy to look at the levels, the most recent sampling that's been done, and offer an opinion about whether or not it poses a risk beyond cancer.

In 1991 we published a health assessment for the site, and at that time the most significant risk that we identified was a cancer risk, and a cancer risk would be for a regular exposure to the sediments and -- but beyond that, I don't know if there are areas within the river that might pose a dermal hazard that might cause some skin irritation.

Mr. Woida?

MR. WOIDA: This is actually the

student who suffered the affliction in October.

MS. YOUNG: Mr. Woida reported that one of his students sitting next to him got some of the water from the river in her -- against her skin when a boot leaked. They were down there doing some sampling, and she got some skin irritation. So it is possible that it was the levels of PAH's that caused the -- the skin irritation. It could have been a number of other things besides, but I think it would be worth taking another look at the data that are available, and I'd be happy to do that.

AUDIENCE MEMBER: Did you say October as in '97?

MR. WOIDA: Yes.

MR. EDELSTEIN: As a general precaution, I think we would recommend that -- that people not play around or go into the contaminated areas or get in contact with any of the sediments unless they have proper protection. And it's possible that the flooding back in June may have carried more of these sediments out of the river and into the floodplain areas, into some of the wetlands, and if -- if your children are, in fact, frequenting

that area, it's possible that if they get in contact with this material they could get some irritation. If they ingest it, it could, you know, get on your hands and then it could -- you could get it into your mouth. That could potentially present a potential hazard and you can't -- I mean we're looking at five miles of -- of stream corridor here. You can't fence the whole thing off.

Realistically, though, I think that some signs and some general notices and some publicity about this is a real good idea. As far as doing some more sampling to account for the flooding that's occurred, that is something that we have put on the table and feel that it may be worthwhile in terms of a discussion of revision to the remedy as part of these natural resource damage trustee issues that Russ alluded to.

And to clarify that, the sediments in the original ROD, the sediments would be dealt with by digging a new stream channel and removing some of the grossly contaminated sediments and visually contaminated material from the old channel and treating them back at

the wood treating site. That portion of the remedy is still technically in place. If we do not reach agreement on a revised remedy, our position will be that Kerr-McGee should be required to carry out the original remedy, which we still feel is viable.

However, as Russ mentioned correctly, that we've had improvements in dredging technology. We're looking at a revised cleanup standard. I don't know if that makes that much of a difference, three versus 15, but be it as it may, there's a difference there, and the impact to the corridor from certain types of dredging technologies in terms of the trees and the wildlife and the construction-related impacts may be slightly less for dredging technologies. Certainly is less expensive.

So we are open to looking at dredging to replace a new stream channel, and we've been having ongoing negotiations on possibly revising the remedy to do that. The sediments are not forgotten. It's just that this proposal doesn't talk about them because it's not part of this proposal.

Russ talked about the -- Now I lost

my train of thought. What was one of the other questions that he asked?

MS. PASTOR: We were on, let's see. We had sediment. We had dangers to the water. We had the cap. Those are the three that --

MR. EDELSTEIN: Oh.

MS. PASTOR: Lost it, huh?

MR. EDELSTEIN: Regardless, the sediments have not been -- or okay. I remember now. What I wanted to say was that if we do agree on a revision to the sediment remedy -- I apologize for losing my train of thought. If we do agree on a revision to the sediment remedy, we'll come back and do this again. We will have another meeting, there will be another proposed plan, and it will discuss these revisions, and -- and that's the reason why it's not been included because it's been broken out.

AUDIENCE MEMBER: I got a couple of questions. First of all, about the dog and stuff in the river, I grew up out here and I went in that river while the plant operated, after the plant operated. I don't go in that river anymore. That's not --

AUDIENCE MEMBER: I didn't know

about it until Monday.

AUDIENCE MEMBER: The grading layer, what does that consist of in that cap?

MR. HART: In the one that we would be proposing to change it to, what we would be proposing to change, what it calls for now is simply 24 inches of soil, and we kind of took the position that that's really not good enough. That's really not rigorous enough at this point in time.

So what we were thinking of replacing that with was the 24 inches of compacted clay and over that there would be a frost protection layer of soil of about 18 inches of thickness, and then topsoil and vegetation over that.

AUDIENCE MEMBER: But then you had a grading layer down above the residuals, I believe, it showed on your --

MR. HART: Oh, I think that would be more like in the way of like site preparation type work and so forth.

MS. PASTOR: Which one is it?

AUDIENCE MEMBER: It was above the membrane.

MR. HART: Yeah. This is the one that we are proposing, that we would be proposing to change from.

AUDIENCE MEMBER: What does the grading layer consist of?

MR. HART: Oh, isn't that -- that's just sort of like, you know, just kind of sort of like soil preparation work and so forth to kind of get ready for things to -- something so that the cap has like a good foundation or something to sit on.

MR. EDELSTEIN: Typically at landfills where you've got waste material, that would -- that would be six inch layer of clean soil to give you, right, a good supportive layer that would allow you to place clay on top of it because you can't place clay on top of waste.

In this instance we're looking at treated soil, which in itself may, in fact, provide that base. Whether that grading layer has to, in fact, be clean soil or not, or whether it could be treated soil, that would be determined during the design.

And by the way, I've been out here and seen people running their dogs, some hunting

dogs that -- we were out here, I think we were with Russ that day when we saw that, and there were dogs were running through the river into the sediments and they didn't get sick from what I could tell. They didn't look like they got burned or anything, but, again, that's an activity that I would recommend that people not do at this site until it's cleaned up.

AUDIENCE MEMBER: Outside of dogs, what about kids?

MR. EDELSTEIN: Like I said before, I wouldn't allow my kids to go down there and play around in the mud.

AUDIENCE MEMBER: What's the proposed volume of soil that you're going to remove?

MR. HART: Oh, like to be treated? I think it would be at least 20,000 cubic yards, and it could be higher than that. That would be, I would say, a minimum, so it -- it -- and that would obviously depend. You would sort of take out some of those initial amounts and then you would have to do some further follow-up sampling in the field to make sure that you had gotten, you know, the things that you wanted

to -- to deal with.

You know, if you still found some higher areas of PAH's or the BTX compounds and so forth, you would just sort of take out a certain amount, work with that, come back, do some sampling, make sure that you had gotten enough of that spot out of there, but that would be like an initial projection.

AUDIENCE MEMBER: Is a good deal of this site filled with one, two, or three-ringed PAH's, or is a good deal of it filled with more than three or more?

MR. HART: It runs the spectrum. I would say with regards to the soils you tend to get into the -- the -- the heavier PAH compounds. With regards to the water you tend to have the lighter type of the PAH compounds, the one, two and three-ring types, whereas the soils tend to have more of the four, five and six-ring type compounds.

AUDIENCE MEMBER: I have another question. About how long does it take for the EPA to approve newer methods and new technologies to use on these sites?

MR. HART: Oh, gosh, well, at the

time -- well, to give you an idea of just like thermal desorption, you know, at the time of the initial record of decision thermal desorption might have been mentioned like in a -- a fleeting paragraph in the original feasibility study, kind of screened out at the time because it was a really new innovative emerging technology, whereas as I note in 1995, by then it was sort of accepted at our headquarters as being a presumptive remedy, something that you didn't even need to do a major feasibility to choose to select at a wood preservative or creosote type of site.

I -- I truthfully couldn't answer your question with regards to other -- other kinds of treatment technologies at other sites. Obviously, the agency has like an ongoing research program. In the case of thermal desorption, I know that basically it was about five years for that thing to -- to go along from like the highly emerging innovative type stage to something that was like readily accepted for this type of site. I couldn't really give you a comparison for some other technologies.

AUDIENCE MEMBER: I recently

graduated with a degree in toxicology from UW-SP where I've been exposed to some of the newer methods of remediation and I'm drawn particularly to one inexpensive, yet time-consuming method which is the -- the utilization of macrophyte organisms to help reduce the toxicity, and I'm speaking specifically of annelids. I think their use five, 10 years down the road could -- could provide solutions for soil remediation and all types of lower level toxicity contamination.

I'm not sure how that would work with PAH's of four rings or more, but as long as the toxicity levels are -- are held in certain concentration, annelids or worms can -- can -- scientists can't figure out how the gullet of worms work in which they'll actually break down toxins into -- into its component parts and into something that's -- that's actually usable called castings.

I think -- Could you tell me whether the EPA is looking into such solutions? It's cheap, inexpensive, using the -- the energy provided by these organisms rather than man-made machines. I think there are other solutions out

there.

MR. HART: Well, I -- I guess really what I would encourage you to do, if you have some -- some papers or something about this particular type of technology or approach, please send it to us. We'll try to add it like for the record for the site and so forth.

I guess I couldn't really speak as to whether the agency as a whole is kind of taking a look at this particular technology. I mean I'm -- qualitatively speaking, I'm sure we'd be in favor of something that's simple and easy to do or something like that, but if you have some information that you might be able to send along to us, please do so.

MS. PASTOR: Perhaps it would be something to make in the form of a public comment if you wanted to express your desire to -- for us to look into something like that.

AUDIENCE MEMBER: So there's going to be another meeting?

MS. PASTOR: No. As I explained earlier --

AUDIENCE MEMBER: Just on a public comment record?

MS. PASTOR: If you wanted to send it to us between now and April 8th.

MR. HART: So that we have it like to add to our administrative record for the site because, you know, what we're supposed to do is base our decision on the information that we have in the record. So if you have something about that --

AUDIENCE MEMBER: Is the address on one of these forms that you distributed here?

MS. PASTOR: Yeah. Did you get one of these?

AUDIENCE MEMBER: Yes, I did.

MS. PASTOR: Inside there's a little stand-alone mailer and our address is all over the place, so you can send it to us anyway you'd like.

AUDIENCE MEMBER: Thank you.

AUDIENCE MEMBER: I have a number of questions.

MS. PASTOR: We have a lot of other people who want to ask questions. Maybe you could do a couple and we can come back to you.

AUDIENCE MEMBER: How -- After this particular type of treatment, what is the parts

per million?

MR. HART: Okay. I guess looking at say like at the removal efficiency, you know, the one -- the one excerpt that we were looking at was, you know, talking in terms of giving like a 99 percent plus removal efficiency, so I think if we -- we have probably like several spots on the site that are maybe like in the, you know, low to several hundred, say like 200, 300, 400 or so parts per million of the PAH's. So if you took out say like about, what, 99 percent of that, you'd be winding up, if you started say like the 2 or 300 level, you'd be getting down to like maybe like two or three parts per million left by the time that you were done if you could realize 99 percent removal efficiency.

AUDIENCE MEMBER: What's -- What's the parameter of the cover area, the capped area on our map? What will the capped area be? How large will it be?

MR. HART: Oh, like in terms of acres or so forth? I couldn't give you an exact number on that because, again, that might depend a little bit on, you know, how much, you know,

we have like these initial estimates of spots to be excavated, treated, and so forth, and then there would obviously be, for some lesser contaminated areas, there would be some other areas that would need to be consolidated, brought together. I could give you a rough guess it may be like two to three acres, something like that.

AUDIENCE MEMBER: Like a quarter of the site? Half the site?

MR. HART: Oh, no. Like I say, I think that probably the containment unit might be, like I say, somewhere on the order of two to three acres, but I'll tell you what, if the Kerr-McGee people might have any thoughts, I mean would that be too wild of a guess on that?

AUDIENCE MEMBER: What's the point of a cap on two acres?

MR. HART: That is -- What you -- The purpose of the cap would be a couple of fold. One, the cap kind of acts as sort of like a boundary. You say -- What you're kind of saying is that for materials that are not brought under the cap you then, in essence, are saying that for that type of land usage that you

project, and right now it's residential. If we were to change it to -- to industrial, you're saying that basically a person who is like a Union Pacific Railroad worker and who would be conducting their normal activities at the site, that they would not be coming into materials more than three parts per million, so that stuff that would be greater than that would have been treated or put under the cap to eliminate the direct contact threat.

And also, the other purpose of the cap would be to help eliminate some further percolation or infiltration down through those treated materials to try to prevent it from getting into the groundwater table.

AUDIENCE MEMBER: But if it's only two acres, and I still haven't asked what you're doing about the groundwater that flows through there, is there a treatment system for the groundwater?

MR. HART: We have the design plans on that now, yes. And what the basic system on that, it's something called like a funnel and gate type of approach where basically the -- the soils at the site tend to be somewhat on the

finer side, and so what would be done would be to deliberately excavate some areas, put in some somewhat coarser materials so that the flow would go through them. And with regards to the groundwater, the PAH's in them tend to be on the lighter, the two and three-ring type compounds and so forth. So the idea would be at these areas where the flow is preferentially directed through, to add a combination of -- of nutrients and oxygen so forth to try to get some biological breakdown of those simpler types of compounds.

AUDIENCE MEMBER: What would the parts per million be in the groundwater once it's been filtered?

MR. HART: That I couldn't really say.

AUDIENCE MEMBER: There's no expectation or level?

MR. HART: Well, part of it is --

AUDIENCE MEMBER: 15 parts per million or 48?

MR. HART: At this time I really couldn't give you any quantitative number.

AUDIENCE MEMBER: There hasn't been

a standard set up for the groundwater, the level of PAH's in the groundwater?

MR. HART: Well, obviously, I mean to fully be restored, the goal is that they should eventually meet drinking water standards. That's the goal for the site for the groundwater.

AUDIENCE MEMBER: So there's no standard like there is for the cleanup. You're asking for 48 parts per million for the cleanup standard for the site, but there's no cleanup standard for the groundwater coming out of the site similar to what you're -- Do you understand what I'm saying?

MR. HART: Yeah, I believe I do.

AUDIENCE MEMBER: You're telling me there is no groundwater standard?

MR. HART: If there were -- if it were like a surface water type of a discharge, I'm sure that there would very readily be a -- a standard that could be derived for that. As far as like the influx of groundwater into river water, I couldn't really tell you on that.

MS. PASTOR: Gary may be able to chime in on something here.

MR. EDELSTEIN: The first question was the size of the cap, and one of the things that hasn't really been brought out clearly so far tonight is that you've got two things going on at this site. The first is that some of the soil is going to be picked up -- I'm sorry. Two things are being proposed tonight. The first is that some of the soil would be picked up and run through this thermal desorption unit as a proposal where the soil would be cooked, as Russ was trying to explain like the analogy of an oven, and then the volatiles, including the PAH's and the compounds of concern and the BTX compounds, he described what those are, which really come from the carrier used for the creosote, which was fuel oil, so this is like a fuel oil spill like heating oil that you use in your home or fuel oil similar to diesel, and the heavier compounds, which is a creosote, which is like you see on a railroad tie, which is closer to coal tar, this material can be, at the right temperature, driven off the soil and then volatilized in the air stream that comes off of this thing through this tube, and then treated in this unit here either through some sort of an

absorption unit to take the heat out of it and then bring it out as a liquid, or be burned, e.g. incinerated.

The volatiles coming off of here would be incinerated. The soil would not. Make that clear. The soil would not be incinerated, but the volatiles coming off of it may if an afterburner unit is used. I wanted to clarify that.

Now, what's going to happen to the cooked soils when it comes out of here? That's the first part of this that's being proposed. That stuff Russ was talking about going to a disposal unit of about three acres in size, I think that may be right, but it would be small relative to the size of the site. This would be an engineered unit. They would dig a hole in the ground, Kerr-McGee would, or whoever carries this out, and then an engineered cap would be placed on top of it.

The idea would be that this stuff would be treated so that it wouldn't pose a threat to groundwater. If it's treated well enough, it won't. It will meet the soil standards for protection of the groundwater.

Then you don't need a liner. Russ was talking about if you need a liner for the less treated material, that's right. That's what the State standards require. The hazardous waste containment unit, right.

So if this is treated well enough, you don't need a liner, but you need a pretty good cap on top of it so that infiltration doesn't become a problem. That's good enough for protection is what we're saying is what we're proposing here. That's the first part.

The second part that really hasn't been talked about here is that there's a lot of soil on this site that exceeds State standards for direct contact under these revised standards that we're talking about. Now, we're talking about changing the standard here for cleanup of the soil from a residential exposure scenario, which means that you are assuming the soils have to be cleaned up to protect people in case someone comes in and builds houses on this property.

What Russ is saying, and we agree, is that the likelihood of that occurring here is pretty low, and if you've got the proper land

use instruments in place, you get the land owners to agree through a legal instrument that's filed with the deed that says that that land use will never occur, this land use will occur, that's the kind of thing we're looking for that would say yeah, you can change that assumption from residential to, for the railroad property, industrial nonresidential. For the park land it would be a trespass scenario.

What does that give you? Well, you run through some calculations assuming a certain type of an exposure to a person who's on the land, and it gives you a number. If the soils exceed that number based on the testing that's been done, they will be covered with a cap. This is the second element that hasn't really been clearly described tonight.

What we're talking about essentially is two caps out here. One over this unit for this treated soil and another much, much larger soil and/or asphalt cap over the rest of the property. Many, many acres. I don't remember how many acres it is, but a good portion of the site. That's what we're talking about here tonight. And that soil cap and/or asphalt

that's out there, a good portion of the site has asphalt on it, would be what would prevent people from coming in contact with that material.

That's -- Under our State standards it's called a performance standard, but what it is is you put something in between it so nobody will get in contact with it. Well, what's the key there? The key is maintenance. Somebody raised a question about maintenance. Who's going to maintain that? And the answer is that there would have to be a clear-cut maintenance agreement put in the property deed that will guarantee that these caps would be maintained for as long as this material remains hazardous, and that's at this site many, many, many years into -- far into the future, decades, if not hundreds of years. Somebody's going to have to be responsible for maintaining these caps. That's the proposal that's on the table here tonight. I want to -- to answer -- I hope that answers your question.

AUDIENCE MEMBER: Thank you.

MR. EDELSTEIN: I don't know what the acreage is for the asphalt. Do you know

offhand?

MR. HART: Well, from what's down there now, Union Pacific property is 22, 23 acres total and -- I mean I don't know. What would it be, maybe 50 percent of the --

MR. EDELSTEIN: I should mention, though, that what -- it's not clearly outlined in the proposed plan, we have comments on that, but what is being proposed here if you dissect it correctly is something that is consistent with what we are doing at hundreds of other nonSuperfund sites in Wisconsin under our fairly recently adopted State cleanup standards, which we didn't have in 1990 and now we have, and Russ had mentioned that, you know, when we reopened this thing, reopened the remedy, the idea is to look at these new standards that have come into place, and that's where these capping -- the caps that I talked about come from, is from these new standards.

MS. PASTOR: We had a couple other questions and we still want to do comments, so let's have you go next.

AUDIENCE MEMBER: Just quickly, you're looking to address the carcinogenic

PAH's predominantly? With that I heard you make mention of 3, 400 parts per million in terms of concentration levels in the soil media or impacted --

MR. HART: Probably some of the more concentrated soil spots I think would be at about that level, yes.

AUDIENCE MEMBER: Did I see correctly in the outline or the diagram that there were quote, unquote hotter areas?

MR. HART: Oh, well, by noting those hot spots, those are some of the areas that we believe are some of the higher concentration points on the site that would definitely need to undergo treatment, that we wouldn't want to contain those without treatment first.

AUDIENCE MEMBER: And that is what you've depicted as 3, 400 parts per million.

MR. HART: Right. Right.

AUDIENCE MEMBER: Okay.

MR. EDELSTEIN: There was another question that didn't get answered. She had a question about the groundwater standards. I'm sorry, I was going to answer that, too, that Russ didn't get to that that, in fact, yes, the

cleanup standards at the site in the current ROD and this revised groundwater remedy that was sent out last year, there was a fact sheet that was send out called an Explanation of Significant Differences that EPA revised the groundwater remedy.

The standards in the original 1990 record of decision are still the same. Those are not proposed to be revised. There is a groundwater standard that has to be met at the site that comes out of this funnel and gate system and yes, that -- that standard is the State groundwater standards under Chapter NR140, and the preventive action limits for the compounds that we have in there for the BTX compounds and the PAH compounds that we have standards for, those are the groundwater remediation goals, and this funnel and gate system that is described in that document will have to meet those.

By the way, a question came up about whether the flux of contaminants going into the river from the groundwater would be different than these two alternatives that we're talking about tonight, and actually the answer is it

doesn't matter because the groundwater remedy that's in there actually takes care of that, and the soil things that we're talking about today, it doesn't matter which one you do because the groundwater remedy already has been designed for that. It's already coming in, and that design is going to actually have a wall that will prevent that groundwater from even going into the river regardless what you do with the soils.

So it's important to know that yes, there is a groundwater remedy that is going to be put in place and that the groundwater will be cleaned up to meet those State standards.

MR. WOIDA: What are some of the risks that are associated with the extraction process removing the soil from the ground, exposing the soil to the air or to erosion or other processes, or when you burn something in an incinerator, what kinds of fumes are coming out that might even though be small in volume have large odor, or if you have this funnel and gate system and you're injecting nutrients into the soil, what kind of outflow do you have, phosphates or nitrites or whatever else you're sticking down into the ground, into the adjacent

water system? What are some of the risks associated with the solutions?

MR. HART: Well, let's see, I guess as far as with the nutrients and the funnel and gate system, initially the funnel and gate system has like a series of three tears to it working from the western to the eastern side of the site. Initially, what would be happening would be some of the experimentation would be going more on towards like the western gate area, some inoculation there, a little bit of trial and error on that so that you can start to get the optimum dosage rates of what you want for that thing.

I certainly agree with your point. If you -- If you did not -- If you just went in there willy-nilly and said well, let's add some more phosphorous or nitrogen, you could really make a mess of things, but I'm sure their idea would be to start off slowly, scale up, see what it would need to be as far as, you know, the dosage rate to get some of your optimal removal efficiency. So I -- hopefully that would answer your question.

MR. WOIDA: The discharge from that,

does that also have to meet the drinking water standard?

MR. EDELSTEIN: Yeah. The way the funnel and gate system works is it's a -- the man talked about worms, something that's simple to do. Actually, the funnel and gate system is akin to that. What it does is it funnels the groundwater to a treatment zone, and the main thing that's added that -- that causes the compounds to breakdown is actually just air. And what that does is it -- it oxygenates the groundwater and the chemical processes that -- it allows an electron accepter to be added, but what happens is it promotes the growth of bacteria that will actually eat or breakdown the compounds that you're trying to target into more simple forms that could then be eaten by other bacteria until you get clean groundwater.

That process is called in situ bioremediation, which is what's going on inside those gates using indigenous bacteria. Sometimes those bacteria need to be stimulated with nutrients. Our experience in Wisconsin, especially with these types of compounds and with cleaning up petroleum contamination sites

which we have thousands of, is that generally nutrient addition in any significant amount is normally not necessary because the soils already contain the necessary phosphorous and nitrogen, but if you do have to add it, we're going to be sure that it's done in such a way that it doesn't cause an exceedance of our standards for phosphorus or for nitrogen.

Phosphorus usually isn't a problem because it ties up in the soil anyhow and you might get some nitrates, and that would be controlled so that we would not have exceedance of the standards for the nitrates. And as far as the incinerator, you want to say something about the soil treatment unit, there would be -- if there is an afterburner, that would be regulated as an incinerator, and the compounds that we're burning here in the -- in the air stream that would be driven off the soils would be the type that -- that you would not get the formation of things like dioxin or chlorinated organics that would pose a real risk because we're not burning chlorinateds.

MR. HART: We would deliberately stay away from recommending a thermal desorption

unit if there were things like the penochlorophenol. And also, one other operational thing to be aware of in using this unit, probably the biggest day-to-day thing is to make sure that once the materials come out after they are treated, obviously they are going to be quite dry. They're certainly not going to have much in the way of soil moisture. The biggest day-to-day thing will be that those materials need to be wetted down, watered down, so that there's not like a dust problem posed. That's going to be the biggest day-to-day thing with regards to the operation of the unit.

MR. EDELSTEIN: I don't think the emissions from this would have any discernible odor, or be very slight. There might be an odor associated with the actual excavation of anaerobic, in other words, septic PAH material that's been sitting in the groundwater for 50 years that's been going -- undergoing anaerobic degradation, and there probably would be some musty odor associated with that. And we really haven't had much of a problem with that at other sites where we've had fuel oil spills of similar material. You do get an odor, but you'd have to

stand pretty close to the excavation to get a whiff of it. If it does become a problem, they'll have to deal with it.

MR. HART: Quite so. We don't think that the organic strengths are going to be like really overpowering. I mean this isn't a pharmaceutical plant or a plant with dairy waste or really strong organic things like that. So we are hopeful that odors are not going to be a problem, but obviously, if anything were to crop up it would have to be handled.

MS. PASTOR: Couple more. Then we'll try to do comments.

AUDIENCE MEMBER: How far downstream do you believe the sediments are in excess of 15 parts per million?

MR. HART: I think looking at that, actually, I was looking -- we started to receive a few comments in, and one gentleman had a comment sort of along those lines. Looking at 15 part per million standard and looking back at the original remedial investigation, which was a major information base for the original record of decision, I noted a couple of points down in Segment 5, which is near the Hampton Avenue

area, and there were a couple of points there that were over 15 parts per million.

So the way I would look at it, it would probably be from, you know, the Brown Deer Road down to the confluence with the Menomonee using the 15 parts per million standard.

AUDIENCE MEMBER: I was wondering, you mentioned the extraction wells that have been drilled in the past.

MR. HART: Yes.

AUDIENCE MEMBER: How deep were those?

MR. HART: Seven, eight feet. Something like that. I see some nodding of heads from the Kerr-McGee folks, so I think that's about right.

AUDIENCE MEMBER: You guys are from Kerr-McGee? Could you identify yourselves?

KERR-McGEE: I'm Keith Watson from Kerr-McGee, project manager for the Milwaukee project. This is Kurt Stimson and Jerry Baker out of Oklahoma City.

AUDIENCE MEMBER: Mr. Hart made a comment about that soil being treated, and the proper thermal desorption unit can certainly

have rehydration occurring back in the system itself and not pose particular problems, so -- just a comment, if you will.

MR. HART: Very good.

AUDIENCE MEMBER: Of that 10,000 gallons that were pumped in that three year period, what percentage was creosote, what percentage was other contaminants, and what percentage of water, or was that all three of those?

MR. HART: I think it was a combination of oily wastewater and creosote. I don't exactly have the breakdown on that. Kerr-McGee folks may.

AUDIENCE MEMBER: I don't have a number.

MS. PASTOR: Any other questions, because we'd like to move into the comment portion of the meeting? Okay. So if you remember from the beginning, we were talking about the comments that we'd like to hear from you at this time. This would be in a statement form, so we've asked -- I think we've answered all your questions that you have asked, and now if you would like to give is your opinion, your

thoughts, your criticisms, your praise, we'd be happy to hear that. What we want to know is what you think of Alternative 1 and Alternative 2, sticking with the old record of decision, or going with what we're proposing, Alternative 2, and the -- this is the time where if you'd like to make a comment, the court reporter would appreciate hearing your name, having it spelled. If you're with a particular organization or governmental body or just yourself, that's okay, too, and then make your comment and that would be, as Russ explained a little while ago, answered in a document we call a Responsiveness Summary, and that's attached to the ROD amendment documentation, and all that's made available in the Mill Road Library with all of our other documents.

So if you would like to make a verbal comment, this is the time to do it. And who would like to go first?

MR. McGUIGAN: Jim McGuigan. I'm County Supervisor, Milwaukee County. M-C-G-U-I-G-A-N. You commented about recreational use of this site in the park and open space plan which, by the way, is from the

Sewer Pact that was passed five years ago, and while there may have been approval from -- from the supervisor at the time, we have a new man in town who doesn't approve.

Also, I wanted to make a correction. The consent decree between the County, Moss-American, and Kerr-McGee says that -- says that the parks will be off limits indefinitely, so we're not looking at any recreational use for this plan or for this area.

MS. PASTOR: Okay. Thank you.

MR. MILLIR: My name is Scott Millir. That's with an I. I just live around here and I agree with using the elevated cleanup bowls for the different land uses, and the thermal desorption sounds like the better plan of the two.

MS. PASTOR: Okay. Thank you for that comment.

MR. MICHAUD: Dave Michaud, spelled M-I-C-H-A-U-D, as in David, a neighbor. I'd like to go on record similar to the gentleman just prior to me.

MS. PASTOR: Okay. Thank you for that comment.

MR. NARDELLI: Alderman Tom Nardelli. I represent this area and I support the absorption method. It looks like it might be a better one than that which was previously discussed.

MS. PASTOR: Anyone else?

MR. THEEL: Cliff Theel. I was going to say that perhaps the use of some presumptive techniques could -- could help shorten the time that it takes to approve of such methods, along with the -- the recommended desorption technique, which seems far superior than the bioslurry.

MR. BRENGOSZ: I would endorse that alternative number 2 ROD. My name is Jim Brengosz. I live along the Little Menomonee River.

MS. PASTOR: Could you spell that, please?

MR. BRENGOSZ: B-R-E-N-G-O-S-Z.

MR. BRENGOSZ: And I'd like to just comment, too, Steve Brengosz, I live down the street from him, that I think if the lower cost maybe we could treat more soil or treat the soil better for the same amount of money that's

budgeted, so to speak, for this project.

MS. PASTOR: Okay. Thank you. Anyone else?

MS. ROSE: I would like to -- My name is Cathy Rose, R-O-S-E, conditionally say that the TDU sounds like a better method, but I have some question about raising from 3.1 parts per million to 47 parts per million as acceptable. With the deed restrictions, deed restrictions can also be revoked, so 20 years down the road once, you know, this is forgotten, deed restrictions can be revoked, so I have some hesitations about that.

MS. PASTOR: Okay. Thank you. Anyone else?

MR. McGUIGAN: I'll just add a clarification. Kerr-McGee is on the hook, I believe, for at least 29 million, so to one of the questions that -- or one of the comments that was indicated before, it's not -- it's not taxpayer dollars. So I think -- I think that if Kerr-McGee screwed it up, they should clean it up.

MS. PASTOR: Thank you for that comment.

MR. WOIDA: My name is John Woida, W-O-I-D-A, and I think that the -- the recommendation to change the proposal looks very feasible and less money, less time, greater cleanup, and I think that it's very good that we have this many people from the community coming that were able to get people interested and representatives from all the parties that have a stake in resolving this issue.

However, I think that it's still important that we keep our focus on cleaning up the sediments in the groundwater which remain probably the most threatening of -- of the situations to the residents in the community five miles up and downstream, and particularly since students here at Vincent High School use the river as a resource in education, we would like to feel safe in -- in using that and hope that this can be remediated very soon.

MS. PASTOR: Okay. Anyone else?

MS. DAHLKE: I think the absorption does sound good. Lori Dahlke, D-A-H-L-K-E.

MS. PASTOR: Okay. Thank you.

MR. EDELSTEIN: Gary Edelstein, E-D-E-L-S as in Sam, T as in Tom, E-I-N,

Wisconsin Department of Natural Resources. There is a summary of our comments I put out on the front table. I've got some other copies for those of you that want to see our letter to Sue and Russ. I've got some copies of our formal comments. This is just a summary. For those who want to see the gory technical details I have some copies here.

We have, for the time being, if you read closely that proposed plan, withheld our formal concurrence with this plan, but I want to emphasize that we generally do agree with the main thrust of the plan, the two main thrusts. One, to change the land use exposure assumptions to those that are being proposed, and the other to substitute low temperature thermal desorption for slurry bio treatment.

The reason why we withheld our -- our concurrence for the time being was that we had some problems with -- with the proposed plan document, with its accuracy and how it set things out. I think some of that became clear as the questions came out and I tried to describe some of the things that were on the table that weren't clearly described. The -- In

general, we felt that the document was confusing and somewhat incomplete.

One of the big omissions, and Russ did talk about this, but it wasn't in the proposed plan, was that the soils at the site are going to have to meet a standard that will be protective of the groundwater, and that will have to be done either with -- by picking them up and treating them or through some method to make sure that the soils that are left behind do not cause a problem, and that has not really been discussed clearly in this document.

The -- How the cleanup standards for direct contact really wasn't described very well. I think I tried to describe that before. Performance standard cap, e.g., simple soil layer a few inches and some asphalt, but it really wasn't discussed in there where it was, how much, and how that would be done. It wasn't really discussed in any kind of detail about these things we talked about called deed restrictions and maintenance agreements. Real important if you want those to work in the long-term. Wasn't talked about very much in there.

One of the things that was talked about was this redisposal unit for the treated soil, the hole that would be dig, and that the low temperature thermally desorbed soil would be placed and there would be a cap in that.

There's a little footnote in the plan that talks about using what's called the Superfund waiver or CERCLA waiver for doing that, and our feeling is that that mechanism is not appropriate for allowing that unit to be designed without a liner. If the soil's treated right, we don't have a problem with the design, but that particular provision of the law is not appropriate for allowing that type of unit. There's some other ways of doing that that would be better. It's a legal point, but that was not -- we did not feel that that proposal had merit.

Again, if you'd like to see a copy of our detailed comments I did bring, I believe, 10 or 15 copies of my letter with me, stop by and I'll give you one. If I run out, I can make -- give me your name and address and I can send it to you.

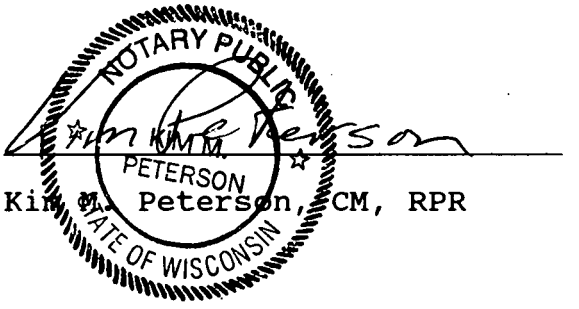
MS. PASTOR: Okay. Well, thank you.

This is a good turnout. Thanks for putting up with us on this crummy, windy, rainy, nasty night, and if you'd like to chat with us for a few minutes I don't think we're going to be kicked out of this room for a little while and do check out the -- the Little Menomonee River virtual tour if you get a chance.

(At 8:55 p.m. the hearing ended.)

STATE OF WISCONSIN)
) ss:
MILWAUKEE COUNTY)

I, KIM M. PETERSON, CM, RPR, a Court Reporter with the firm of Halma-Jilek Reporting, Inc., 25 East Michigan Street, Milwaukee, Wisconsin, do hereby certify that I reported the foregoing proceedings taken on March 18, 1998, and that the same is true and correct in accordance with my original machine shorthand notes taken at said time and place.



Kim M. Peterson, CM, RPR

Dated this 25th day of March, 1998,
Milwaukee, Wisconsin