ST. LOUIS SITE REMEDIATION TASK FORCE
TECHNOLOGIES WORKING GROUP

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TRANSCRIPT OF PROCEEDINGS

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TUESDAY AFTERNOON, JULY 16, 1996

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BE IT REMEMBERED, that on Tuesday, July 16, 1996, the herein described parties met at the World Trade Center, Tenth Floor, 121 South Meramec, Clayton, Missouri 63105 and the following proceedings were had, to-wit:

HALE REPORTING, INC.

No. 4 Godfrey
St. Louis, Missouri 63125
(314) 524-2055

PARTICIPANTS ATTENDING:

Jim Grant, Mallinckrodt Chemical Co.
Mitchell C. Scherzinger, MDNR
Kay Drey
Tom Shepherd, Dawn Mining
Elsa Steward, MDNR
Lee Sobotka, Washington University
Laurie Peterfreund
Bob Wester, R.M. Wester & Associates
David Wagoner, Enviorcare
Tom Binz, Laclede Gas Company
Molly Bunton
Conn Roden, County Health Department

SUPPORT:

James Dwyer, Facilitator
Dave Miller, SAIC

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TUESDAY AFTERNOON, JULY 16, 1996

(In Conference Room:)

MR. GRANT: I think the key objective of this group originally was to take a look at alternative technologies to see if there were any out there that could be brought to bear on the St. Louis site to help reduce costs overall as opposed to digging up materials and sending them off some place, primarily Utah as a base case.

And historically we've gone through, with

the help of Dave Miller and input from others, you know, developed the list of possible technologies and then wound up focusing really on two. I think soil washing, to a certain extent, and vitrification. I don't make any claim that our list was a 100 percent complete but I think we thought we identified most of the key technologies we're looking at.

We got down to looking at soil washing based on the Clemson tests. They really didn't look economical in terms of doing any good at St. Louis site. I think there were some thoughts that the soils at St. Louis downtown might be different and perhaps some bench characterization should be done for those soils. That hasn't been done yet.

On the vitrification side, SAIC put together a cost estimate for us trying to compare vitrification and hauling soils away for disposal for SLAPS, so we're comparing apples and apples. The cost estimate they prepared showed the costs to be greater applying vitrification than actually just digging up the soils and hauling them away, there wasn't an economic advantage.

There were others proposing the technology that -- had a chance to look at that and propose an alternative cost estimate in terms of what they

separation and the grain size distribution of the waste makes it impractical to separate waste. So, I mean, those are two other technologies that we did look at.

MS. PETERFREUND: Can I ask a question, because I missed the last meeting, but when I read through those documents the difference in the cost estimates between what SAIC has developed and, you know, was put in I guess as rebuttal to that, wasn't it based on a different set of assumptions or a correction of assumptions, wasn't that the -- I mean, that's the way I interpret it between the documents or did I miss something in there?

MR. GRANT: Well, I think that's true. And Dave's had a chance to look at it and then he's going to have some comments on a comparative basis of the estimates in terms of -- SAIC originally put those together and he's going to have some comments on the differences or lack of difference or whatever, that's correct. And I think some of it boiled down to the cost of transportation and the cost of disposal, those type of things.

So, I don't know. That's the other thing we can do. I mean, since everybody wasn't here last time, you know, if you all want to you can talk a

little bit about the technology and what was in that proposal or we can just jump right into discussion of the differences in the cost estimate or lack of difference in the cost estimate.

MR. SOBOTKA: Is there a difference?

MR. MILLER: Very little. We're talking about the tweaking of knobs and dials a little bit compared to the major drivers. The major drivers are how much volume reduction you get and what's the disposal fee on the other end for materials that you have to dispose of.

The assumptions that were questioned were what density did you use for the in-situ material under pounds per cubic foot or 90 pounds per cubic foot, it makes a difference, but the real difference is on how much volume can you reduce and what's it going to cost to get rid of stuff at the other end.

For everybody's clarity on this, basically what the trade-off is with microwave vitrification, there's a volume reduction over the in-situ volume that you hope to gain by doing this as well as the stabilization of the waste form.

MS. DREY: For shipment.

MR. MILLER: For shipment, that's -- well, for whatever you want to do with it. You shrink the

volume, you make it more dense basically.

MR. SOBOTKA: What is the density of the vitrium.

MR. MILLER: I don't know. Off the top of my head, I don't know what the density is. And that would depend on the amount of volume reduction you get. But if you get a volume reduction, say, of approximately 50 -- let's talk round numbers. I think Jeff Golden would prefer to use 90 cubic pounds per foot for the in-situ dry density of the material.

MS. DREY: Before you do anything?

MR. MILLER: Before you do anything.

MR. SOBOTKA: Ninety pounds per cubic foot.

MR. MILLER: And if you reduce the volume of that by 50 percent, you should be looking at somewhere around 180 pounds per cubic foot.

MR. SCHERZINGER: But he noted a 14 percent mass reduction and a 10 percent increase due to --

MR. SOBOTKA: Excuse me?

MR. SCHERZINGER: There's a 14 percent mass reduction.

MR. SOBOTKA: From where?

MR. MILLER: Is that in water?

MR. SCHERZINGER: Water. The prioritization of organics and so -- but there's also

a 10 percent increase in volume due to prits or glass-forming material.

MR. MILLER: Plus there's a silicate added to the process.

MR. SCHERZINGER: Right.

MR. MILLER: So, you know, I do want to keep this -- I mean, we can talk the details as much as we want but the bottom line is do you get 25 percent or do you get 50 percent, and it makes a big difference.

MS. DREY: In reduction, is that what you're saying?

MR. MILLER: Volume reduction. We used 50 percent which was the outside estimate that could be -- Clean Air thought could be achieved. Now it might be a little higher than that now, and that's okay too, but using 50 percent and incorporating just basically everything that Clean Air said should be incorporated and correcting our estimates using their information, indeed, I agreed 100 percent we're -- you know, if it's 200 million to haul it out to Envirocare, it's 200 million to implement a 50 percent volume reduction and dispose of it at Envirocare at the existing disposal rate, okay. Something else that plays into this --

MR. SOBOTKA: You're saying the 50 percent volume reduction is offset by the other costs of implementing the vitrification.

MR. MILLER: That's correct. There's a cost associated with vitrifying.

THE FACILITATOR: I want to get it right. So if we are assuming a 50 percent volume reduction, from an overview point of view based on what we know today, you would assume that the impact would be cost neutral if you can achieve 50 percent volume reduction.

MR. MILLER: Correct.

THE FACILITATOR: Presumably based on what you know today, the cost of achieving that would be approximately the same as disposing of the other 50 percent if you still had it.

MR. MILLER: That's correct.

MR. SOBOTKA: But once you've vitrified you have to reexamine the assumption of shipping.

MR. MILLER: That's right.

MR. SOBOTKA: What's the purpose of shipping it?

MS. DREY: Because the glass gets zapped by the radiation and cracks and if you've got it --

MR. SOBOTKA: At this level it will

MR. MILLER: -- to take it to Utah.

MR. WESTER: That's right.

THE FACILITATOR: I'm trying to short-circuit this if it's possible to do that.

MR. WESTER: Well the other side of that, Dave, if I can just add, is that with the discussion of the different levels to be accepted --

MR. MILLER: Yes.

MR. WESTER: -- for different areas --

MR. MILLER: Yes.

MR. WESTER: -- it is even more important that this technology as a package be understood whereby only one-third of it has been characterized into the cost, or the cost neutralization, or the cost savings, or whatever you want to call it, only one-third of it's here and it already brings it down on 279,000 cubic yards to an even playing field.

THE FACILITATOR: And so you're suggesting there may be -- or it's pretty clear to you that there are potentially additional --

MR. WESTER: Oh, absolutely.

THE FACILITATOR: -- savings to be achieved. I thought that there were two fundamental issues that we were trying to address here today. One is how do we get to the point where this working

group can present a report and recommendation of any sort to the Task Force.

And then more specifically I thought, and this is more by the grapevine than by any other means of communication, it was my impression that there were some advocates of a proposal or recommendation of the Task Force that would call for funding of a field experiment to test the validity of all of these assumptions that we are discussing.

And it seems to me if we're really going to try to do that in one day we'd better focus on the end objective. You know, what do we want to say to the Task Force next week and does it include -- or should it, with conditions or without conditions or however, a recommendation that the Task Force be supportive of this proposal to do a field scale demonstration model.

MR. SOBOTKA: Where has this technology been applied in the field besides the Oak Ridge test field?

MS. PETERFREUND: Which technology?

MR. GRANT: Vitrification.

MR. WESTER: Rocky Flats.

MR. SOBOTKA: And how much material was vitrified there and what was -- plutonium was the

activity there or what?

MR. WESTER: There's a variety of contaminants involved in the test and the development and then the proof of its operation at Rocky. The CET would have to talk to that. I can't.

MR. SOBOTKA: But to my knowledge it's not something that's going on wholesale at Rocky Flats, am I wrong?

MR. WESTER: Wholesale?

MR. SOBOTKA: Meaning in production mode so to speak.

MR. WESTER: That is a technology development from Rocky Flats that's been applied to Rocky Flats within the past couple of years, that's all. The development is about six years in the process. The last year to two years is where they've been testing a variety of contaminants and soils in the Rocky flats compound. Now there's been many bench scale tests done to prove validity, including St. Louis soils.

MS. PETERFREUND: Isn't it fair to say, though, at Rocky Flats they're running it as a pilot plan?

MR. WESTER: Yes, it's a pilot plan.

MS. PETERFREUND: Kind of a continuous use

so it's beyond --

MR. WESTER: Yeah.

MS. PETERFREUND: -- just a small issue.

MR. WESTER: That's why I can't answer how much has been done because the current contractor won't release it.

MS. PETERFREUND: Yeah. The materials that they're treating, what they're actually doing there at Rocky Flats, there's very little information available publicly.

MR. MILLER: Is it a privately-funded endeavor? The pilot scale developed at Rocky Flats was funded by the Department of Energy money; is that correct?

MS. PETERFREUND: It is.

MR. WESTER: It is, yeah.

MR. SOBOTKA: Then that's information that's available.

MR. MILLER: Absolutely.

MR. WESTER: Well, because of the process and the nature of the work at Rocky, the current contractor is continuing to hang onto the classification that doesn't allow that information to be freely disseminated.

MR. MILLER: When we administered the

Clemson contract all that information had to be available for scrutiny, and indeed it was, and we could not use technologies that were proprietary for that very reason.

MR. WESTER: Well, the technology you're going to be using is borne out of that technology. It's not the technology --

MR. MILLER: That was actually --

MR. WESTER: It's not the equipment coming out of Rocky Flats. Absolutely not.

MS. PETERFREUND: It's the concept that's coming out. There's been enhancements by --

MR. WESTER: CET.

MS. PETERFREUND: -- CET since then.

MR. MILLER: So that particular enhancement then has never been run at a pilot or field scale demo where you could establish cost and productivity and volume reduction numbers. It would be really helpful I think to have that kind of data on the exact technology that's being proposed.

MR. WESTER: This is on that exact technology that's being proposed.

MR. MILLER: Okay.

THE FACILITATOR: I thought I remembered a reference to Savannah River from when the CET was

first here or perhaps even --

MR. WESTER: Not to compare it because that's in-situ vitrification.

THE FACILITATOR: I see. So there is no model that can be looked through; is that correct?

MR. SCHERZINGER: When I asked Dr. Golden for technical information on -- he said it's either proprietary or classified. Excuse me, I'm losing my voice. We have three people on our staff who have DOE classification clearance so if that information could be provided to them they could evaluate it.

MS. PETERFREUND: Do they have to request it or --

MR. SCHERZINGER: Well, I'm requesting it for them.

THE FACILITATOR: As of now?

MR. SCHERZINGER: As of now.

MS. DREY: Well, I had the same experience this morning with the man here from Minnesota. You know, I asked them about it and they said they couldn't tell me anything because it was proprietary even though it was DOE-SAIC.

MR. MILLER: Hold on there.

MS. DREY: Why did I need to do?

MR. MILLER: That's how he billed it but I

would like to clarify that at this point. He's been on the phone to me asking how he would work a proposal through to the Task Force and the Department of Energy, that's what I've been providing him advice with. They also requested all the Clemson documentation and we sent that on to them too.

The last time that I heard anything that they were proposing to do was to develop some sort of chelate base extraction. As far as turning it all into a salt, I haven't heard anything about that until this morning. And turning it into a nonradioactive salt defies -- unless you have a small reactor.

THE FACILITATOR: I think that ought to be in our recommendation then.

MR. MILLER: Okay.

MR. SCHERZINGER: And David Copperfield is their CEO.

MR. MILLER: But I think -- I'd like to just clear that up, that we've been helping them learn the pathway of getting a proposal to DOE for treatment technology, just like we would anybody else. We're not helping them develop a technology of any sort, nor do I really have the details of that except that I know that they were very interested in

the chelating work that went on at Clemson.

MS. DREY: How did they hear about the meeting this morning?

MR. MILLER: They attended a vendor forum for treatment technologies in Oak Ridge several months ago, I can't remember the exact date, where they learned about the fact that the Task Force meets on a monthly basis. And so they were very interested in this activity and they also were based in St. Louis so it may be that they're --

MS. DREY: They're based in Minnesota actually.

THE FACILITATOR: They have a partner here.

MR. MILLER: Well, it was initiated in St. Louis and I think they subcontracted a lab in Minnesota to actually develop some sort of technology.

MS. PRICE: And they were Central what?

THE FACILITATOR: West Central Environmental. They also called me. They've been calling me for months and I'd also told them the dates and place for the Task Force meetings.

MR. BINZ: Jim, I think simultaneous to the time they were talking to you, Larry Goodwin had contacted me at work as well. I think he was just

going right down the list of Task Force members and he was trying to -- my impression was -- find a way to market to the St. Louis opportunity. I made a quick phone call to Jim Grant and more or less passed people from Kiesel on to SAIC and that's where it's been as far as I know all this time.

MR. MILLER: After Tom had them call us, we told them about this vendor forum where they learned a lot about things.

MR. GRANT: Well, I chatted with them after the meeting. They were aware of this meeting and I even offered to them if they wanted to come here and have ten minutes or fifteen minutes to say something they were welcome to and they said they weren't ready to.

MR. WESTER: Going back to the question on the information, I believe the information that Jeff and Bob Martin gave out in the first meeting had the information you want in terms of its technical performance with the modification.

MR. MILLER: Good.

MR. WESTER: I'm almost positive it was in there because there's a lengthy discussion on that technology and it is part of what they have offered as the enhancement and have proven to the extent that

it's being pursued.

MR. GRANT: Are you talking about this here or a previous meeting we had? This was a write-up --

MR. WESTER: No, no, not on cost. No, on performance.

MR. GRANT: Okay.

MR. WESTER: It's the initial document.

MR. GRANT: Okay.

MR. WESTER: Yeah, I'm almost positive that's in there. The items that won't come out are those that I'm thinking DOE has still held as classified and if there's other information there that's there, that's fine, but I think what you may be looking for is performance criteria as CET sees it, not as Kaiser-Hill sees it.

MR. SCHERZINGER: I'm looking to evaluate the technology based on technical information and data -- the tests that were run, the assumptions made, the formulas utilized.

MR. WESTER: It may be as quick as a phone call to Jeff if you don't already have it.

MS. DREY: I just feel I'm not qualified to make any kind of judgment on any technologies. I think maybe if we want to limit this just to radiation --

MR. GRANT: Chelating technology.

MS. DREY: But if you want to just deal with people who have an engineering degree in something maybe, you know, you feel that's appropriate. But I thought -- didn't you say that there has been -- this is a technology that to some extent has been developed by DOE?

MR. WESTER: Yes.

MS. DREY: Could you explain that?

MR. WESTER: Completely. That's exactly what I'm saying.

MS. DREY: Well, then it's up for grabs nationwide, anybody can do it?

MR. WESTER: No.

MS. DREY: Well, then where does Mr. Golden, where does he fit into this or his company?

MR. WESTER: Well they have arranged with DOE to become the commercial arm for that technology.

MS. DREY: Nobody else does?

MS. PETERFREUND: There were eighty people that applied.

MS. DREY: Okay.

MS. PETERFREUND: And they put out an advertisement that a certain technology is available

for a -- technology transfer initiative and I believe there were eighty companies who applied to be that commercial partner and the CET group was the one that was chosen to do that.

MR. SOBOTKA: But there must be a public document, DOE document, that details all the work done by DOE itself in developing the technology that you can get that will describe it in detail except for any enhancements made by the private contractor, that must be something that we could all get and read.

MS. DREY: Well again, I guess it seems to me that this committee -- I think it's important that we've looked at the various technologies but I personally feel in this kind of decision that we have to defer to the Department of Energy.

I don't think we're responsible for coming in on the cheap, you know, having a cheap technology. I think what we're responsible for is to say what we want done. And if there is no technology to do what we want done, then it won't be done, but I don't see how we, except for maybe you and a few engineers, can assess this.

MR. GRANT: Kay, getting back to maybe what Jim talked about earlier in terms of focus, I mean

we've got some preliminary cost estimates that show a cost-neutral situation and it could vary a little bit based on the volume reduction, cost of disposal. We're asking a lot of questions about the technology and the question is where do we go from here.

MR. SCHERZINGER: Well --

MR. GRANT: You know, either we feel that, gee, it's cost neutral therefore, gee, it's not worth doing it at this point in time based on the information we have, although even being cost neutral there are some benefits to the situation -- the volume of material disposed, the stability of the material if there's a glass being formed, or is there enough uncertainty here or do we see enough benefit with some further work that we could see, you know, a cost savings or a benefit beyond that and that's what we're going to recommend.

The other thing that was brought up before was, hey, you know, if we stabilize this material and there's some sort way of putting it back in the ground and not shipping it to Envirocare or someplace we could save that cost, you know.

MR. SCHERZINGER: But this whole thing brings up a series of other questions like what do we do with it afterwards, will the two licensed disposal

facilities accept this waste in these blocks or will it be crushed and then you lose all you've gained. Or will the Nevada Test Site take it? They took Fernald site waste at a much lower a price and, you know --

MR. SOBOTKA: Why? Why did they take it at a lower price? Because it was vitrified or for some other reason?

MR. SCHERZINGER: Because it's not a commercial facility. It's a DOE facility. Am I correct?

MR. MILLER: Which one are you speaking about?

MR. SCHERZINGER: Nevada Test Site.

MS. DREY: From Fernald.

MR. MILLER: They're pretty much closed to taking any other that waste as far as I understand. I don't know what's --

MR. SCHERZINGER: Even vitrified?

MR. MILLER: -- arranged for from Fernald. I don't know. I'm sorry, I have no idea. You're right, they are a DOE site.

MS. DREY: They were planning to send the waste out from the silos out to the Nevada Test Site. And those wastes are from St. Louis and those

are the hottest wastes they have at the moment and so they were going to send them to the Nevada Test Site.

THE FACILITATOR: We do have representatives here from both Envirocare and Dawn Mining. I don't know whether they're prepared to respond to the question or even understood the question but --

MS. DREY: There are two licensed facilities that accept these vitrified wastes.

MR. GRANT: Logs or blocks.

MR. SCHERZINGER: We were talking about blocks due to the fact of volume reduction if you --

MR. GRANT: Stackability.

MR. SCHERZINGER: -- put a bunch of logs together then you have big void spaces that you're paying for whereas if you have one big block there are no void spaces.

MR. GRANT: I guess the real question, Dave, is would the waste form -- dictate a different cost in tipping fees or disposal fees.

MR. MILLER: I don't know.

MR. GRANT: As opposed to just volumetric in nature.

MR. WAGONER: Envirocare is licensed -- I think they're licensed to take such waste. I don't

know about the cost.

MS. DREY: What about Dawn Mining?

MR. MILLER: I can make one comment as to our existing contract is we can't have anything more than ten inches in the minimum dimension for the soil disposal -- to get the soil disposal fee. Over and above that, it's a debris rate that is considerably higher. About two and a half times I think; two, to two and a half times higher per cubic yard.

MR. WAGONER: But, again, if Envirocare were going to shoot something at you like that we need to know the volume.

MR. MILLER: Sure.

MR. WAGONER: I mean if there's going to be lots and lots of it we can probably make a better --

MR. MILLER: There's probably a way to accommodate these forms but --

MR. WAGONER: But I don't think anybody is prepared at this point to make a statement about what we do until we see a little more detail.

MR. GRANT: Well, I mean, there's some reasons why the debris costs are higher in terms of compaction and all that whereas here you're dealing with solid blocks that could be stacked closely.

THE FACILITATOR: Tom Shepherd, do you have

anything to add?

MR. SHEPHERD: The only limitation we have at Dawn is a concentration level and knowing the quality of material here I don't think a 50 percent reduction in volume, a 100 percent change in concentration, would limit us. And I don't -- I believe the physical form would be created, I have a problem.

MS. DREY: I guess one of the things that appealed to me about vitrification is, first, these materials -- well, first, in terms of having the frozen border on the sides and under this so that the contaminated groundwater would not be leaving the site while the excavation is going on.

But it seems appealing to be able to not have wet sludges travelling across the country, that's what I felt was very helpful. And also I guess you were talking about using some kind of plastic cover so that the radon gas and the radioactive dust would not ultimately go off-site.

I don't know. Lee, know you're talking about having -- if we were to vitrify, either do in-situ and leave it there or do ex-situ vitrification and leave it there, what does that mean, do we also do this over at Latty Avenue and

have a site there, do we have a site at West Lake Landfill, do we have a site downtown? Where do we get it out of metropolitan St. Louis?

MR. SOBOTKA: Actually, I wasn't thinking of in-situ anything but just once you have the blocks it's not so clear that they have to be shipped.

MS. DREY: Yeah, but then do we put them all -- I know when they tried to --

MR. SOBOTKA: I don't know.

MS. DREY: -- have the waste at the airport site not solidified it was going to take 82 acres to take the waste from downtown Mallinckrodt, Latty Avenue and the airport site.

MR. GRANT: Kay, there's some other -- you know, we've always got into this situation where we're going to dig everything up and send it some place or we're going to vitrify everything, part of the consideration it could be a mix of technology. In other words, you could do some things, take the hot spot material the way it is, the hottest material send it some place, vitrify. Another is level of concentration material that could be held in place, you know. There wouldn't be as many curies or radioactivity there, so you need to mix and match some of these different things and come with a

scenario that might be more palatable than just taking the hottest stuff and vitrifying it and putting it back in place.

MS. DREY: Yeah. I guess one thing that -- you know, the problem is we met early and tried to come up with what were the standards that this Task Force wanted to follow. You say it would have to be millions of curies before it would give you any pause. Didn't you say megacuries? Is that millions?

MR. SOBOTKA: Yes. In the glass?

MS. DREY: Uh-huh.

MR. SOBOTKA: Well, I'd say they are --

MS. DREY: Or what about --

MR. SOBOTKA: -- vitrifying that level of activity in glass.

MS. DREY: Well, I think that we did decide at one meeting down at the Washington University Medical School that we would like to comply with the Department of Energy's standards so if you got 20,000 picocuries per gram at the airport instead of five and fifteen something probably has to be done. I mean, we just can't leave it there.

MR. SOBOTKA: Yeah. So what's the point?

MS. DREY: Well, I guess I'm asking you --

the numbers, five and fifteen, five picocuries per gram on the surface; top, six inches and fifteen picocuries per gram below --

MR. SOBOTKA: For totally unrestricted use --

MS. DREY: Right.

MR. SOBOTKA: -- they're probably a little conservative.

THE REPORTER: Excuse me, you need to talk louder, you're fading.

MR. SOBOTKA: Probably attainable, but conservative. But not everything has to be totally unrestricted. That's where we may differ.

MS. DREY: Yeah, and I guess this is --

MR. SOBOTKA: And there are a lot of natural areas that would fail the five and fifteen that are totally -- well, that up to recent times would be unrestricted areas and they're totally natural.

THE FACILITATOR: One new development probably since you were last actively involved in these discussions, Lee, is that the Task Force has gone through a process of, first of all, defining four option scenarios, remedial option scenarios, for each site and then really defining them quite tightly

and then electing a preference among the four.

MR. SOBOTKA: Yeah, I saw that.

MR. SCHERZINGER: I'd like to clarify that that's five and fifteen above background. You know, it's granted there are areas in this state that do grant an outcrop, do have a higher background than others.

MR. SOBOTKA: Yeah.

MR. SCHERZINGER: But, you know, we have imposed a limit of contamination above background that is acceptable.

MS. DREY: Elsa, could you describe -- could you make your little speech, which you've done before, about the state's position --

MS. STEWARD: The state's position?

MS. DREY: Yeah, on the airport site on whether we can leave the stuff in the groundwater.

MS. STEWARD: Yeah, okay. Our position is more goal orientated than our trying to promote a particular remediation method or technology. And our goal is to -- one of our goals, one our major ones is to protect groundwater from any further contamination and to decontaminate the groundwater that is contaminated.

And we realize that it may be feasible

technologically to leave the waste on-site if it were placed in an engineered cell which would prevent it from having contact with groundwater. So, you know, we're not ruling that one out.

MR. GRANT: What if we sort of --

MS. STEWARD: We're not particularly in favor of it either.

MR. GRANT: -- why don't we, you know, stabilization by vitrification --

MS. STEWARD: I think if --

MR. GRANT: -- material very compact and would reduce its solubility.

MS. STEWARD: -- I think if we were convinced that it was chemically inert and so it wasn't going to migrate and cause any contamination that it might meet our goal criteria.

MS. PETERFREUND: So what's the definition of an engineered cell?

MS. STEWARD: Well, it's one -- actually we shouldn't say engineered, we should say engineered to certain specifications, and the two primary characteristics that this kind of a cell has is it has a double synthetic liner and it has a method for analyzing and collecting leachate, which could be produced by one of these cells. And these

requirements are in the regulations to Subtitle C of the Resource Conversation and Recovery Act and they were originally intended for hazardous waste landfills.

MR. MILLER: Elsa, has anybody that you're aware of in the state of Missouri considered the special conditions for radioactive materials given the long-lived nature of them that a double synthetic liner and leachate control system perhaps could be, you know, lost to the system --

MS. STEWARD: Yeah, compromised over time and --

MR. MILLER: -- and there might be over designs that could better contain radioactive wastes.

MR. SCHERZINGER: The EPA came out with a position on the RCRA cell that although their designed for a thousand year life with the engineering that goes into it, even after the man-made synthetics degrade away they will still have a 10,000 year life span. So, I mean, this is the EPA's evaluation of the Subtitle C RCRA designed landfill.

MR. MILLER: Well, why not just get rid of that expensive liner system and go to the design that's giving you the 10,000 year design life, that's

kind of my question on it.

MR. SCHERZINGER: It's cheaper using the synthetic.

MR. MILLER: Oh, it is.

MR. SCHERZINGER: Because, I mean do you want to do two, three-foot compacted --

MR. MILLER: Clay.

MR. SCHERZINGER: -- clay and then two sand filters?

MR. MILLER: So what you're saying is they reduce the --

MR. SCHERZINGER: Using the geosynthetic liner as one of them and the Geonet has the equivalent of one foot of sand, you know, for one leachate collection system, it's considerably cheaper than going to the compacted clay in both. And, you know, you'd probably end up with the same lifetime of the cell. The only thing is the geosynthetic liner will allow you some flexibility should there be earth movement. The stretch and pull would allow you to -- the liner to stay together as long as the movement wasn't too drastic and allow you to go away and repair whereas if you had a compacted clay liner that moves might cause the whole cell to fail at one time.

THE CHAIRPERSON: Like in the event of an earthquake?

MR. SCHERZINGER: Exactly.

THE FACILITATOR: You'd be right back to square one.

THE CHAIRPERSON: I just don't understand, I'm sorry.

MR. SCHERZINGER: A major earthquake.

MR. SOBOTKA: But in these catastrophic events is where if the material was vitrified, independent of any extra features around it which I actually couldn't see a need for in the first place, yc would removed the problem. So it stands out.

MR. SCHERZINGER: Right.

MR. SOBOTKA: It seems that the selling point in a test program is the potential for not shipping.

MR. MILLER: And not having to do double leachate lining.

MR. SCHERZINGER: Well, you'd most likely end up in a Subtitle D, which is the special waste landfill, which is also double lined.

MR. MILLER: Well, I think we're getting ahead of ourselves on this one.

MR. GRANT: Yeah, I guess --

MR. MILLER: But there are some advantages to be made.

MR. GRANT: I think discussion is good here. What I seeing here is we've a lot of questions and not a lot of answers. And one approach to this could be to say we would like to get answers to these questions. In other words, we don't have to make a final decision today and say vitrification is in or out, particularly if we have a lot of questions.

What we could say is that we see some advantages to this technology and there are some questions and we want to put together a program to answer those questions or get more information. You know, it's a logical step-wide basis.

One way is to try and see if we can get our hands on the DOE information that's supposedly classified or whatever. Another might be to -- if there was some testing that needed to be done or something like that, we could do that and help answer questions and move along on our program. Yes, Dave.

MR. WAGONER: One of the things I was going to say a minute ago is Envirocare has told DOE that we'd be willing to pilot test. I mean, we'd like to see the volume reduced somehow if there's something that will do it. We'd be willing to pilot test

something if that was what you folks wanted us to do.

MS. PETERFREUND: What was the response?

MR. WAGONER: I mean, we haven't gotten a response that has been proposed to the DOE. I mean, I just wanted this group to know, not only this but anything else that has promise, we'd be willing to -- we've got this material, we could probably do this, so you wouldn't have to be ship any of it.

THE FACILITATOR: You've got some already?

THE CHAIRPERSON: I wasn't here obviously at the beginning but one of the methods I like about it is due to the volume reduction. We're trying to lobby, which is L-word mentioned today, for money. Anyway, the fact that, you know, if we're going to try and sell this on a national scale, then we can use the fact that we're not using a national repository such as Envirocare or Dawn. I mean, if you reduce the volume that you're going to dump, not only to save costs for ourselves but for the fact on a national scale you've got people realizing that you're trying to do something that benefits the country as a whole in the long run. I mean, we all just can't be dumping soil out there, we'll run out of room. So that's what I like about it.

MS. PETERFREUND: In all the conversations that I've heard in Washington like this presentation that Jim Owensburg did where he's talking about taking these kinds of programs to a performance base which to me is kind of what we were talking about morning whether you want, you know, Option I, II or III, and then, you know, kind of letting market forces, you know, drive how you solve that.

And I kind of saw this committee as coming up with a list of things that were reasonable and feasible, not that we go necessarily into the final court saying this is what you do, but these are the things that, you know, look like they've got potential that would reduce the cost and allow us to meet those performance sets that the community wants.

THE FACILITATOR: I was thinking a few minutes ago, and I don't remember who was speaking, about what the recommendation to the Task Force might be. I was thinking about that as well as the next which is really right behind that, that is, what do we say in the first draft of a final report to DOE and what do we say by the end of September in what will presumably then be our final draft, or final report.

We could speak in terms of possibilities

that have been put on the table. And if we don't have answers to those questions surrounding the possibilities now, we could identify the questions and say if the answers were to prove to be satisfactory then this is something we think ought to be given serious consideration. And we could identify what the questions are and why we think ultimately there may be some benefit.

Lee has raised the question, although I know Kay doesn't agree at this point, but Lee has raised the question of whether if vitrification makes sense on its own merits, if it works with what we've got in the way of soils, if it works with the moisture content in the good part of SLAPS, if it could be demonstrated that it works, then in Lee's mind it opens up the question of whether we even have to consider transporting the material.

In Kay's mind, at the moment, it indicates the potential for solving a problem that is related to transportation and disposal and in the minds of the two repositories that we have been talking about most often there may be issues that could be addressed and answers developed that would be helpful one way or another.

And there are other possibilities as well.

There is a potential for cost savings, there is safety factor. If it were cost neutral and it somehow made sense to transport, the advantage may just be that it's safer to get it there. If there is an accident there is less likelihood of exposure. And once you're there you've got the volume reduction so you're not using up the resource, the capacity as quickly as possible.

I think what we need to do is identify as many of those issues as possible, express our thoughts about those issues and then say we think this has some potential, great potential, whatever, and therefore we recommend the following. That shouldn't be a hard thing to get to.

MS. DREY: Well, I think it's good to raise the question. I also think that -- I had introduced a motion at the last Task Force meeting, which I'd like to think is coming up next week, and I don't think we have to say what technology we want. I don't think that's our responsibility, nor are we capable of doing it.

I mean, I can't access even the cost of, you know, the estimates, the volume. We just had the same experience happen with dioxin just within the past week where the volume is greater that they

projected. That can happen.

And I guess, Sally, when I heard about this ex-situ vitrification, I've never been for in-situ because I don't trust it enough. As a matter of fact, I have a lot of documents about other people having concerns about cracking and stuff and when you're talking about --

THE REPORTER: I'm sorry, I didn't hear what you said.

MS. DREY: I'm sorry. When you're talking about a four and half billion year half-life or a 14.1 billion year, you know, half-life if you -- you raised some questions, you know, all along that I thought were very legitimate. Like what about shipping the stuff when it's wet, what about digging it up if it's in the flood plain, you know, what's it going to do, and I was very excited hearing about both the possibility of having this frozen border, but also I think it would be a great deal safer to ship this solidified material that wouldn't have as much liquid. I mean, it wouldn't even be allowed, to ship liquid and I guess out to Envirocare or to Dawn Mining, they have restrictions on a percentage of the moisture.

But, you know, I personally feel that this

coming Tuesday I will the reintroduce the motion to clean up the airport site and I think not tie it to any technology but just say to the DOE this is where we are. And I think devising a list of questions, and particularly with Lee here to help us, I think it would be great to do that.

MS. PETERFREUND: You're always going to have questions because, I mean, based on what we know from the original survey of the property it's a very broad kind of boundary survey so there would have to be assumptions in anything and you're not going to know until you actually get out there and do some trials and demonstrations and really put it to the test.

THE FACILITATOR: Well, what I was getting at earlier when I was speaking to Lee about recent developments in the Task Force is that a while ago, six months ago and earlier than that, there was an issue about whether the waste at the airport site, in particular, ought to be excavated or not.

And then we changed the word to exhumed and then we decided as a group, the consensus attitude at the moment, is that yes, indeed, that waste must be picked up out of the groundwater at least. And the preference of most of the people who have expressed

themselves in the Task Force is not only must it be removed from the groundwater but it must be removed from the metropolitan area because of perceived health risks.

MS. DREY: Not necessarily perceived.

THE FACILITATOR: Well, at least --

MS. DREY: Because of health risk.

THE FACILITATOR: Health risk is --

MR. SOBOTKA: So if it's vitrified you're worrying about it falling on you. That's a health risk?

MS. DREY: No, I mean, I just don't like perceived health risk.

THE FACILITATOR: I'm sorry, I --

MR. SOBOTKA: So what's the health risk when it's in a glass block? It's a health risk from --

MS. DREY: Well, that's a legitimate question.

MR. SOBOTKA: -- falling on you? Is it the risk of it falling on you?

MS. DREY: No, I guess when you're --

MR. SOBOTKA: Because that is the risk.

MS. DREY: That is a risk.

MR. SOBOTKA: That is the risk.

MS. DREY: Well, it could also crack and the radioactive --

MR. SOBOTKA: So it cracks.

MS. DREY: -- gasses can get out and radioactive dust particles. It could crack.

MR. SOBOTKA: So it cracks.

THE FACILITATOR: It's still glass.

MS. DREY: You know, I --

MR. SOBOTKA: Then you have two.

MS. DREY: Well no, it can shatter also.

MR. SOBOTKA: And then you can worry about cutting yourself on it.

THE FACILITATOR: All right. The point is that the decision has been -- or the conclusion has been gotten to that this material must be dealt with and there is a strong sentiment that it be dealt with in a way that removes it from the community. So now we're back --

MR. SOBOTKA: My point here is not that I'm an advocate of vitrification, but rather when you have a technology you're examining you have to look at the broad sprectrum. And the issue from your vantage point that the material when its exhumed it must be removed rather than be put in an engineering structure because of long-term health effects, that

picture does change if it's vitrified.

MR. SCHERZINGER: My personal opinion that is that once you've exhumed the waste, and should you vitrify it, would be the responsible thing to do to consolidate it all in one area. So -- it would also be irresponsible to put it in contact with groundwater.

I mean I agree with you vitrified material -- glass is glass. So, I mean, it's stable, it's relatively safe. The only radionuclide subject to migration are those on the exterior. Dr. Golden said that they're ionically bound.

MR. SOBOTKA: It's not much anyway.

MR. SCHERZINGER: Pardon me?

MR. SOBOTKA: It's not much anyway.

MR. SCHERZINGER: Yeah.

MR. SOBOTKA: A big block.

MR. SCHERZINGER: But, I mean --

MR. SOBOTKA: It's really not much to start with.

MS. DREY: See, that's where we have this problem. It's above DOE's standards. Twenty thousand is more than five.

MR. SCHERZINGER: But the exposure to the ionic radiation can pose a health hazard so therefore

consolidate the material if it's vitrified. I mean, that way we can keep an eye on all of it at one time.

THE FACILITATOR: Well, we're getting beyond anything we can hope to deal, it seems to me, in a final detailed way by September 24, much less next Wednesday.

MR. GRANT: Well, Jim, I think what you suggest --

THE FACILITATOR: Tuesday.

MR. GRANT: -- something like you've suggested is about as far as we're going to get. And I think it's appropriate, and I don't know, does everybody agree with that?

MS. PETERFREUND: About what?

MR. BINZ: Developing a list of pros and cons, you mean?

MR. GRANT: Right. Well, I'm talking about here is the technology, or some questions about it, that need to be answered. Whether or not we can get it from the classified DOE data or whether some field tests need be done or bench tests or something to answer those questions, that's one thing related to cost.

Other comments have been made well can we

do -- if we have this stable form could we do something with it differently than sending it away in some manner and if it's stabilized in such a way that we could -- I mean, you wouldn't have to put it back in the groundwater, you could put it out of the groundwater or something. But maybe that's something we could follow up on too.

But we're not going to get that answered today. Everybody doesn't happen to agree with that point of view either.

MS. DREY: Uh-huh.

MR. GRANT: But maybe we could come up with some recommendation to the broader committee along the lines that was stated here. We've got some options. I don't know. We've got some possibilities here that we can move forward with to answer some of these questions. And if things work out -- great. You know, we can use the technology.

MR. SOBOTKA: One question I'd like to get answered at some point is if one took the vitrification route in the selection of the material then perhaps in preparation of the material for vitrification, are you in an improved situation to reject stuff for vitrification because it just doesn't need to be in the sample at all because it's

below five.

MR. WESTER: Yes.

MR. SOBOTKA: Improved over alternatives, okay, and just -- okay. So I suspect that's the case because you have to --

MR. WESTER: Right.

MR. SOBOTKA: -- you have to determine the material --

MR. WESTER: You're also doing on-site quantitative analysis.

MR. SOBOTKA: Right.

MR. WESTER: In-situ.

MR. SOBOTKA: And the issue is -- and that's not factored in here because all we're talking about is the potential of --

MR. WESTER: Although the technology brought to the board -- to this group --

MR. SOBOTKA: Right.

MR. WESTER: -- for inclusion as well as the LAN spectroscopy (laser ablation nebulization) spectroscopy.

MR. SOBOTKA: Different sites will have different amounts of material that might pass and it would be interesting to know what fraction of materials would likely pass different levels,

five-fifteen or fifty-fifty, would pass and therefore never have to be vitrified and not relocated at all.

MS. DREY: Do you remember what the millirem dose is at the point of the pentagon shape of the airport if you're driving by, millirems per hour.

MR. MILLER: I know if you're driving by --

THE REPORTER: I'm sorry, I can't hear you.

MR. MILLER: I'm sorry. I know when you've driving by the curve in the road, you have four to five times background in counts per minute on the --

MR. SOBOTKA: So you might be getting the dose that you would get in Mexico City.

MR. MILLER: Or an airplane.

MR. SOBOTKA: Or an airplane.

MR. GRANT: Well, another --

THE FACILITATOR: Sally has had her hand up for quite a while.

THE CHAIRPERSON: Are you suggesting that this would be an addendum report to our report?

MR. GRANT: No. I mean, it could be done in a variety of ways. I was thinking it would be a part of the report. Weren't you, Jim?

THE FACILITATOR: Well, I was think it would be two-step process. One, there would be

recommendation.

MR. GRANT: That's right.

THE FACILITATOR: Report and recommendation to the Task Force as soon as possible.

MR. GRANT: Right.

THE FACILITATOR: There would be the opportunity for the Task Force to absorb that information, to ask its own questions, to come to its own conclusions and to develop whatever it believes ought to be included in the final report to the Department of Energy in the way of recommendations concerning technologies and technological approaches to solving this problem.

MS. PETERFREUND: It's technologies that they should consider, right?

THE FACILITATOR: Exactly. And why, it seems to me.

MS. PETERFREUND: Right.

THE FACILITATOR: And it doesn't do as much good simply to say here's something we think you ought to consider as it would to say here's what we think you ought to consider and here's what we think may be possible to achieve.

MS. PETERFREUND: Right. And also summarizing, as Mitch did when we first started,

about the other ones that we looked at, that we ruled out, and why we ruled those out.

THE FACILITATOR: Exactly. We have to do that. I mean we've started with that, I think.

MR. MILLER: This is a perfect segue for what I wanted to say. I'm going to go back in kind of the big picture of why we're meeting and what we're trying to accomplish here. And it seems to me that there are certain things about not only microwave vitrification technology but the laser ablation spectroscopy technology which I actually prefer to view as two components because I think the laser ablation spectroscopy offers a very broad range of assistance in this problem. That's digressing.

MS. DREY: Is that to analyze prior -- Lee's question --

MR. MILLER: Yeah, it's basically --

MS. DREY: -- how do you know which soils you have to treat?

MR. MILLER: Right. Which soils you have to do anything with is the question. But let me go back to the bigger picture.

What I think would be a strong component of your recommendation to the Department of Energy is how much emphasis should be placed on treatment, what

are appropriate roles for the Department of Energy to play in developing these treatment technologies that show promise and what are the kind of things that you find favorable.

Using perhaps vitrification technology as an example, what is it attractive about these things, and they may be some technologies that you want to carry down the road, so that when other technologies make themselves available in the however many years it's going to take to clean the sites up, that they are recognized for their benefits based on what you have recommended to this point.

MR. SOBOTKA: This is why I disagree with the motion you have on the table because I think DOE would be more receptive to giving money to a project that has as its goal the proving or disproving of technology and the possible aspect --

MS. DREY: Yeah, well --

MR. SOBOTKA: So if you just say, oh, I want a $100 million --

MS. DREY: No, this would --

MR. SOBOTKA: -- next year --

MS. DREY: No, this would do --

MR. SOBOTKA: -- to clean up --

MS. DREY: -- just that. This would be a

demonstration project to show -- they were going to do a demonstration project at the St. Louis Airport site on the 22 acres -- the 22 acres was inadequate, but they were pretending that they were going to do this R&D project at the SLAPS site --

MR. SOBOTKA: What R&D project?

MS. DREY: To leave it there and put a grouting curtain around it.

MR. SOBOTKA: I see.

MS. DREY: And put police cadets on top of it. But I think it was to show our site -- the airport site was to be a wet test and there was to be a dry test somewhere else. I cannot find the document that said that St. Louis would be the wet field demonstration project.

But I think that's very desirable for our case because it is a flood plain. Groundwater is three feet from the surface in places there. And the creek is one, if you looked at Sandy Delcoure's photographs today, the creek is a residential creek, and commercial as well, but, you know, it goes through a lot of back yards and kids play in it all the time.

THE FACILITATOR: Where does that leave us?

MS. DREY: Well, I think the idea of raising some questions is good. There's no question the Department of Energy has spent twenty years trying to convince St. Louis to leave the stuff in the groundwater. Twenty years that I know of. They do not want to spend five cents to dig up five cubic yards. None. Isn't that right, Dave?

MR. MILLER: Five cents for five cubic yards, we'd take it.

THE FACILITATOR: The deadliest transportation disposal.

MS. DREY: Well, I mean that's what's appealing about this thing is it may help us.

MR. SCHERZINGER: I believe that the portion of the alternative technology contribution to the final report should be open-ended, defining the qualities of technologies in which we're looking for and the fact that as they appear or are brought to DOE, DOE should evaluate them for those qualities which we identify such as the volume reduction, the stability of the final waste form.

MS. DREY: The removal of --

THE FACILITATOR: Wait a second, I can't write that fast. Volume reduction. Stability. Go ahead now, Kay.

MS. DREY: Of the waste form.

MR. SCHERZINGER: The final waste form.

MS. DREY: And I think the removal of the water from the sludge -- waste, buried waste and also I think there's a control over the release of radon gas and radioactive dusts. With have all three radons. Very few places in the United States have all three radons.

THE FACILITATOR: Back up one step. The third one?

MR. MILLER: What I hear you expressing, Kay, is the return of by-products of processes that to be careful with whatever treatment process you implement there you know what kind of dust it's going to generate, what kind of waste water.

MS. DREY: I'm thinking of the dust. Oh, well certainly --

MR. MILLER: And what kind of off-gasing might come from it.

MS. DREY: Right, radioactive dust.

MR. MILLER: Right.

MS. DREY: But also I guess the experiment using this Rosen -- do you want you that Rosebury report? I can get another copy.

MR. SOBOTKA: I'll look at it later.

MR. SCHERZINGER: It's not only radon gasses.

THE FACILITATOR: Well, is it covered in stability?

MS. DREY: No, stability has been shipping this stuff off-site, isn't it?

MR. SCHERZINGER: It would be --

THE FACILITATOR: If it's stable --

MR. MILLER: I would say it's control of other emissions, I mean, including radon. There's dust, there's water, there's gas.

MR. WESTER: There's emissions.

MS. DREY: Air and water emissions.

MR. SCHERZINGER: Just emissions.

MS. DREY: I think air and water.

MR. SCHERZINGER: Contaminated emissions.

MS. DREY: To air and water.

THE FACILITATOR: Okay.

THE CHAIRPERSON: We're going to have to nail down those for the report. You're talking about dust --

MS. DREY: Three radons.

THE FACILITATOR: Okay. Plus the three radons. What other characteristics would be desirable and don't just think -- I would encourage

you not to just think about this technology that we're focusing on, although that's a that good starting point, but what other characteristics might be desirable.

THE CHAIRPERSON: Under one you would want an (a) and a (b). You would want cost reduction due to volume reduction and then preservation of national depository.

THE FACILITATOR: Responsible use of the disposal capacity.

THE CHAIRPERSON: Yes.

THE FACILITATOR: Okay. So (a) would be cost reductions; (b) about cost savings and then responsible use disposal capacity.

MR. SCHERZINGER: Put limited disposal capacity.

THE FACILITATOR: Limited disposal capacity.

MS. DREY: One of the things that appeals to me in this vitrification proposal is that there would be an effort to protect the workers and off-site people using this plastic thing.

THE FACILITATOR: The tent?

MS. DREY: The tent.

THE FACILITATOR: The cover that would be

used during the excavation process, isn't that what you're talking about? Isn't that a fairly -- isn't that something we discussed as being a rather standard approach --

MS. DREY: It wasn't done at Weldon Spring.

THE FACILITATOR: It's not associated specifically with vitrification; it's associated with excavation.

MR. BINZ: We've talked about it before as engineer controls I believe, Jim.

MR. WESTER: Yeah.

MS. PETERFREUND: Well, that's a good phrase to put up there. Engineering controls.

MR. MILLER: Engineering controls is probably a good thing to look at.

THE FACILITATOR: Okay. And why don't we in order to make it easy for us to generate helpful guidance here, why don't we illustrate what engineering controls might be with a variety of them.

MS. PETERFREUND: The Springform.

THE FACILITATOR: The Springform.

MR. BINZ: I think it's pronounced Sprung, Sprung Instant Structures. S-P-R-U-N-G, is a vendor's name.

THE FACILITATOR: Sprungform.

MR. BINZ: Artificial barrier.

MS. DREY: Frozen barrier.

MR. BINZ: Barrier or curtain.

MR. WESTER: Artificial frozen barrier.

THE FACILITATOR: I know I can only do it with one of you speaking at a time, I'm quite sure the reporter who is trying to do it in words can only take care of one of you at a time. So artificial barriers.

MR. WESTER: Frozen barriers.

MR. SCHERZINGER: Put artificial impermanent barrier.

MR. WESTER: Artificial frozen barrier.

THE FACILITATOR: Okay. You're all going to get a chance at this.

MS. DREY: Sides and bottom both.

MR. MILLER: Where frozen is, I'd say frozen is just one type of barrier.

THE FACILITATOR: I'll hang it out there so you can attack it or modify it or shape it or add to it.

MR. MILLER: I'd say artificial barrier actually.

MR. WESTER: Because there's others too.

THE FACILITATOR: Okay. So artificial -- yes?

MS. BUNTON: I just found out I can speak at this meeting.

THE FACILITATOR: You've been biting your tongue all this time?

MS. BUNTON: I have, yes. Is a quality one that would return it to Greenfield standards?

MS. DREY: Standards? Is that what you're talking about?

MS. BUNTON: Uh-huh. Is that a quality --

THE FACILITATOR: I think that's the overriding objective although not in every case.

MS. DREY: Well, it should be included.

THE FACILITATOR: Well, it's not a technology. The point is that's the overall objective to be expressed --

MR. BINZ: It's a goal.

MS. PETERFREUND: It's a goal, yeah.

MR. WESTER: It's a performance standard for the technology.

THE FACILITATOR: And what we're focusing on here is what technologies or what qualities of technological approaches might help us achieve our broad goals. So I think that maybe --

MR. SOBOTKA: This is not limited to the five-fifteen or Greenfield standards, right?

MR. GRANT: No.

THE FACILITATOR: In fact, we have -- I'm sorry.

MR. SOBOTKA: One might find that the technology lends itself to producing extremes of output that can be used for certain locations that do not meet five-fifteen.

MS. DREY: Like what?

MR. SOBOTKA: Let's say the airport expands and they want a lot of dirt under their runway.

MS. DREY: Oh, yes.

MR. SOBOTKA: And they're creating a --

MS. DREY: Artificial reuse they call it.

MR. SOBOTKA: Yeah, I'm just pulling something now out of my pocket.

MR. SCHERZINGER: Industrial use scenario.

MR. SOBOTKA: Industrial use. And you might find that you have this stream being produced so you may decide that 50 is -- there's a lot of use for 50 locally and you've got it.

THE FACILITATOR: So would that be an objective of ours, though.

MS. PETERFREUND: To meet the performance

MR. WESTER: And then you'd go and actually leave them with a report of a positive nature.

THE FACILITATOR: Focus on the ones that we really believe --

MR. WESTER: Right.

THE FACILITATOR: -- ought to be pursued.

MR. WESTER: Don't confuse them with two lists.

MS. PETERFREUND: Right.

THE FACILITATOR: Kay?

MS. DREY: You said transportation.

THE CHAIRPERSON: Isn't there a good and a bad list, though?

MR. WESTER: But the bad list is being put aside in the opening statement by saying, for example, use of chelating agents in the soil --

MS. DREY: Transportation, is that what you said --

MR. WESTER: -- has been eliminated because --

MS. DREY: Well, I think it should say transportation.

MR. SCHERZINGER: We projected one --

MR. WESTER: Use the list for whatever you want but don't make it a list. Make it a narrative.

MR. SCHERZINGER: But these are qualities we're looking for --

MS. STEWARD: That's not the only reason you'd want it in stable form.

MR. SCHERZINGER: -- in technologies. We want to leave the report open.

THE FACILITATOR: You don't have to get all of this.

THE REPORTER: Okay.

THE FACILITATOR: The essence really is what will wind up here and that's what we need to get.

THE REPORTER: Okay, fine.

THE FACILITATOR: Elsa, what were you just saying?

MS. STEWARD: I was saying that we want it in stable form not just for transportation purposes.

MS. DREY: You said transport and disposal.

MS. STEWARD: For storage.

MS. DREY: Storage is interim, right?

MS. STEWARD: This stuff is all stored. Disposal is storage.

THE FACILITATOR: You know, stability is stability. So it doesn't make any difference if it's stable. I don't know whether we have to go beyond

that --

MS. STEWARD: Right.

THE FACILITATOR: -- and illustrate the many ways in which --

MS. STEWARD: Or the many reasons.

THE FACILITATOR: That's right.

MS. STEWARD: Or the many reasons we want it stable.

THE FACILITATOR: If it's stable, it's stable.

MS. STEWARD: Right.

MS. DREY: Yeah, but I think it should say for transport and storage.

THE FACILITATOR: Does anybody object?

MS. DREY: For the safer transport and storage.

THE FACILITATOR: Okay.

MR. SCHERZINGER: No, I --

MS. DREY: Less safe?

THE FACILITATOR: We'll leave it up there and then we'll see what you don't like about it.

MR. SCHERZINGER: It's for permanence. So that it can't leach into our groundwater. I mean, if we can safely move it -- we could freeze it and ship it in frozen blocks and let it melt.

THE FACILITATOR: That's storage.

MR. SCHERZINGER: But it's --

THE FACILITATOR: It's safer in its storage --

MR. SCHERZINGER: But once it melts it's no longer stable.

THE FACILITATOR: I see.

MR. SCHERZINGER: You know, to fix the radionuclides and have it no longer being able to be transported into our groundwater is one of the most important facts.

MS. PETERFREUND: Do you want to say stable and non-leachable?

MR. SCHERZINGER: Stability of final waste form.

MS. STEWARD: I think it says all that needs to be said.

THE FACILITATOR: That's what I was thinking too.

THE CHAIRPERSON: I mean, there are several reasons we want it --

MS. STEWARD: That's right.

THE CHAIRPERSON: -- stable in its final waste form.

MS. STEWARD: That's right.

THE CHAIRPERSON: One of the ways is --

THE FACILITATOR: All this is irrelevant once you --

THE CHAIRPERSON: -- due to transportation.

THE FACILITATOR: -- once you get to the issue of stability is desirable.

MR. MILLER: If there's a permanence in the stability.

MS. DREY: I think we're safe in transporting. To me, it's one of the main reasons I like vitrification.

MR. SOBOTKA: But, Kay, these are qualities we're looking for in technologies. And if it's stable, it's stable.

THE CHAIRPERSON: If you put transportation they may literally hose it down, freeze it, ship it and have it melt. I mean, you're opening yourself up to --

THE FACILITATOR: I bit my tongue when I first thought of this, but I'll say it now, if you qualify it by saying for safer transport and/or storage, let's say, then you may just be inviting the argument that okay it's safer to store.

MS. DREY: Yeah, you'd be inviting Lee

Sobotka to do something.

THE FACILITATOR: Well, you know, he doesn't need an invitation. Yes, Tom.

MR. SHEPHERD: I'm sure this is the same for Envirocare. Our facilities are designed to take the material as is in a safe way as accepted by the NRC and the state of Washington and I'm sure the state -- or Utah. So from our perspective that technology doesn't enhance the safety of storage at I think our already licensed sites. You don't change our condition in terms of a better situation.

THE FACILITATOR: Well, in final analysis you may not even be interested in buying reduction. You may want to fill that hole as fast as possible.

MR. SHEPHERD: Sure.

THE FACILITATOR: But for the Task Force purposes --

MR. SHEPHERD: Yeah. No, no.

THE FACILITATOR: -- you know, it's desirable.

MR. SHEPHERD: No, I understand. I just wanted to --

MS. DREY: Let's leave those words out.

MR. MILLER: Yeah, I think what Mitch is saying is correct --

MS. DREY: I've been outvoted.

MR. MILLER: -- is what you want to do --

MS. DREY: -- so would you please scratch --

THE FACILITATOR: We will hear about it. You'll all pay for this. Okay. Anything else that you think of that would indicate a desirable quality? Yes, Tom.

MR. BINZ: I think we need to revisit No. 3. I'd like to maybe incorporate the concept of removal, treatment, management, disposal, something of that nature related to No. 3. We need to incorporate and ingrain I think more than just removal aspects of water. We need to do a complete management, appropriate management of water.

THE FACILITATOR: Well, maybe if we substitute --

MS. DREY: But if we freeze it --

THE FACILITATOR: -- the word management for removal, what happens then?

MS. DREY: We're not removing water. Oh, I see what you're saying, we're removing it from the transporting it.

THE FACILITATOR: Yes, exactly. Those were your words, I thought.

MS. DREY: Yeah, I mean --

THE FACILITATOR: You know, I was taking your words down when I wrote this. But what Tom is suggesting is a broader --

MS. DREY: You're talking about the water, the groundwater.

THE FACILITATOR: -- concept management of that water not only -- no, he's not talking about groundwater. He's talking --

MR. SCHERZINGER: Removal in management.

THE FACILITATOR: Right, that's what I'm suggesting. If we put the word management here does that cover --

MS. DREY: I was just thinking about removal of water from the materials that we ship.

THE CHAIRPERSON: Doesn't that get covered in No. 2 then?

MS. DREY: Maybe.

MR. SOBOTKA: If you remove the water and don't vitrify, it's worse --

MS. DREY: Well, I don't want to remove it.

MR. SOBOTKA: -- for radon, for emission of gasses.

THE FACILITATOR: I see.

MR. MILLER: In fact, I think there is some acceptance that require a certain moisture content.

THE FACILITATOR:. So you can't have very much, but you have must have some.

MR. MILLER: Right.

THE FACILITATOR: Let's focus on three. Tom's suggestion is what's on the table. He's proposing that we substitute the word management for --

MR. MILLER: I think we can get rid of three almost because we have stability of final waste form and that deals with moisture content of the waste form. And in four we have control of emissions, including air and water, which in my mind addresses by-products of the process that you might have to deal with in the terms of the water. I think it's redundant. That's my opinion.

MS. PETERFREUND: Isn't that going to take care of the water issue that you might get when you excavate or you have an open hole and you're getting water filling it in, that's not -- in the engineering controls emissions.

MR. MILLER: Then I would add that to four and say management of water or something. You may be right there, that there's other water that you have to deal with that's not in the emission water.

THE FACILITATOR: Right. Actually water

has been a driving issue especially as we've gotten closer and closer to defining our recommendations.

MR. MILLER: Right.

THE FACILITATOR: Groundwater issues particularly have been perhaps the principal issue.

MR. SCHERZINGER: So you're going to make groundwater management?

THE FACILITATOR: So groundwater management --

MR. SOBOTKA: Be careful, there's surface water too.

MR. WESTER: No, there's surface too.

MR. SCHERZINGER: Well, groundwater and surface water.

MS. DREY: Why not say ground and surface water.

MR. SCHERZINGER: Yeah, groundwater and surface water.

MS. DREY: I think it would be helpful to people. I don't see why we just have to leave out words. You could put transport in No. 2.

THE FACILITATOR: Groundwater and surface water. Okay. Anything else?

MR. WAGONER: Just a question. I came in late and I saw a sheet that said assume 50 percent

reduction and cost neutrality.

THE FACILITATOR: These are assumptions that were integrated into the analysis of the process.

MR. WAGONER: The reason I ask that is something that if I were a federal agency, I would have liked to have seen your list covering something about cost effectiveness. But essentially we're putting that aside with those assumptions, is that --

THE FACILITATOR: No. What we're saying is that based on the assumption, as I understand it, based on the assumption of achieving volume reduction of 50 percent, based on a program that addresses 279,000 cubic yards of material at SLAPS, which we know something about, it appears that based on what we think we know today the financial or the economic consequence would be neutral. You would wind up -- and this is taking it through the entire process including assumptions about transportation and dispose, you wouldn't save any money.

MR. WAGONER: And we've agreed to that in this group, have we?

THE FACILITATOR: No. We haven't agreed to anything yet except not to include a couple of words.

MR. MILLER: I think what he's getting at is there's got to be some mention of cost neutrality or cost effectiveness.

THE FACILITATOR: I see.

MS. DREY: And I think the fact that we wouldn't have to pay in perpetuity for monitoring the site should be listed somehow.

MR. GRANT: Yeah, that could come under cost effectiveness.

MS. DREY: Yeah.

THE FACILITATOR: We certainly want cost savings. We've done it in the context of volume reduction. We thought we knew what we were talking about then, maybe we weren't covering all the bases.

MR. WAGONER: What I heard this group say I think is let's define a list of qualities that would fit any technology that the DOE would look at.

THE FACILITATOR: That we would propose that they look at.

MR. WAGONER: But somebody said, I believe, that if something becomes available that we don't know about today we ought to be able to judge it against those criteria. Cost effectiveness is an important item.

THE FACILITATOR: In many people's minds.

In some people's minds there are other -- I mean, I'm not suggesting we shouldn't put it on the list. I'm just saying that there are other issues that are far more important and cost effectiveness is almost irrelevant in some people's view.

MR. WAGONER: Not to DOE.

THE FACILITATOR: I know that.

MS. DREY: Yeah, and I think that's an important point.

MR. SCHERZINGER: To us -- or to myself volume reduction and stability of final waste form has a value, a dollar value attached to it.

THE FACILITATOR: There is a benefit, at least.

MR. SCHERZINGER: It's tangible in my mind.

THE FACILITATOR: So is there a sixth item or not? I mean, back to the suggestion. Do we identify as a desirable quality something having to do with cost effectiveness?

MR. MILLER: Well, you know, if I might just, you know, add to the conversation a little bit. Cost-savings from volume reduction and stability still don't address other costs like if there's some minimal monitoring of the waste that has to be done, wherever you intend to leave it, if there

are waste streams -- now, we might be identifying these in control of emissions -- but if you have to deal with particular waste stream in a certain way it's going to add cost to the process. So I think there is more to the cost issue than simply volume reduction.

MS. DREY: But if you have a tent on top, you're not going to have much --

MR. SOBOTKA: What if there's water emission from the particular process that you have to treat.

MR. SCHERZINGER: Yeah, right.

MR. SOBOTKA: And the treatment of that water would cost money. The tent costs money.

THE FACILITATOR: So we're talking about an integrated overview.

MS. PRICE: How would you manage control?

MR. MILLER: I think what we're doing is confusing some issues, at least in my sense, engineering controls can be viewed as a technical thing or there's cost associated with them. Perhaps if we capture cost as a category, we will be covering things that we may not have covered in our other ones. The way we have it right now is kind of piecemeal. We have a piece of it here and a piece of

it there.

THE FACILITATOR: Give it a shot. Give us some words.

MR. MILLER: I'd say cost competitiveness with other technologies with other remedial actions that meet the cleanup goals.

THE FACILITATOR: Okay.

MR. BINZ: Cost effectiveness?

MR. MILLER: That's what that is, right? Good. Yeah, that's good.

THE FACILITATOR: Okay. Is that okay?

MR. WESTER: I heard that somewhere else.

MR. SOBOTKA: What's not here is the potential for a technology produced analyzed and perhaps processed exit streams. Multiple.

THE FACILITATOR: Okay. You'll have to help me there.

MS. DREY: You said beneficial use of the treatment waste?

MR. SOBOTKA: Well, it might be treated. It just might be analyzed. It just might be identified. In other words, that the process can produce multiple streams of output that are analyzed so you know what's there.

THE FACILITATOR: So do you want me to put

those words down?

MS. PETERFREUND: That would be a quality.

MR. MILLER: That would be a quality.

MS. DREY: What was that?

MR. SOBOTKA: That some technology might just pick it all up and put is through the whole process.

MR. SCHERZINGER: Technology would minimize the necessity for the process.

MR. SOBOTKA: Minimize the necessity by analyzing it.

THE FACILITATOR: The analytical issues which go to the laser ablation and --

MR. WESTER: Mobile gamma spectroscopy.

THE FACILITATOR: Okay. So what is it about -- I'm trying to integrate your thoughts with Lee's, what is about those technologies, and you were talking about it a little while ago as well, what is it that we could put down in sort of a list that makes them desirable.

MR. WESTER: Well, if you're wrestling with that because it falls under volume reduction, it falls under cost effectiveness but it is a separate tool from what you're addressing with those issues.

THE FACILITATOR: So enhanced -- pardon?

THE CHAIRPERSON: Is it characterization techniques --

MR. WESTER: It is.

THE CHAIRPERSON: -- we're talking about?

MR. SOBOTKA: But it's actually characterization so you can exclude it.

MR. WESTER: Expedited characterization.

MR. SOBOTKA: Exclude it from the process.

THE CHAIRPERSON: From the process. So --

THE FACILITATOR: Refined --

MS. PETERFREUND: How about analytical tools for sorting? Isn't that what you're talking about.

MR. WESTER: Or selective processing. Analytical tools for effective and selective processing.

MR. SOBOTKA: Right.

THE FACILITATOR: Is that all right?

MS. DREY: Why effective? Why not just selective?

MR. WESTER: Effective. I want to be right, not just pick the wrong stuff. I want to pick the right stuff so I want to be effective selection of material to be processed.

THE FACILITATOR: Selection of materials --

MR. WESTER: Of materials for processing.

THE CHAIRPERSON: We're trying to minimize the amount of material processed so --

THE FACILITATOR: Well --

MR. SCHERZINGER: No, we're not trying to minimize --

THE FACILITATOR: -- not necessarily to minimize it but to put it in the right spot. If it has certain characteristics, you can do certain things with it.

MR. SCHERZINGER: We're trying to optimize --

THE FACILITATOR: If it has other characteristics you may have a different end result.

MR. MILLER: I'm still not sure that's a quality of a technology.

MR. WESTER: Take effective out maybe and change it for optimize. Mitch just came up with a good word here -- optimized selection.

MR. SCHERZINGER: Optimization.

THE FACILITATOR: Analytical tools to optimize selection of materials for processing. Does that help?

MR. BINZ: You could use analytical tools to reduce the volume of material to be processed.

THE CHAIRPERSON: They want to discriminate better and optimally minimize.

THE FACILITATOR: Let's see what I've got. It's analytical tools to optimize selection of materials for processing is one thing.

THE CHAIRPERSON: No, take out the word effective.

THE FACILITATOR: Analytical tools --

THE CHAIRPERSON: Is that right?

MS. PETERFREUND: No, it's not right. Take out the word effective. It's analytical tools to optimize selection of materials.

THE FACILITATOR: And then also to reduce volume of materials to be processed. And that's really one thought, it seems to me.

MR. WESTER: One's a cost and effect.

THE FACILITATOR: That's right. It is one, isn't it?

MR. BINZ: Yes.

THE FACILITATOR: With this upper half do we not need the section below the line; is that correct?

MR. SCHERZINGER: Right.

THE FACILITATOR: We do not need it, okay.

THE CHAIRPERSON: Okay, I'm leaving.

THE FACILITATOR: What time is it? Does anyone need to feed parking meters?

MR. MILLER: It's four o'clock.

THE FACILITATOR: What else? You know, Jim, what do you think we're going to need beyond this. Yes, Laurie.

MS. PETERFREUND: Can I make a suggestion, because we've added lot of questions and thoughts about this, this meeting on Tuesday and we can ask Dr. Golden to come back in to do the kind of presentation we have had here and address some of the -- give a good explanation to the full Task Force so when they see this list or they see the final report they know what they're commenting on. You know, with some sense of understanding of what they're talking about.

THE FACILITATOR: What do you think?

MR. SOBOTKA: He's available?

THE FACILITATOR: The question is would it be appropriate to ask Dr. Golden to come to the Task Force meeting next Tuesday to deliver the same presentation to whoever is there on Tuesday, as he delivered here, so that when this list is presented there's at least one illustration of something that we think fits, if we think it fits.

MS. PETERFREUND: If you go through in the report and you list out what we've eliminated and what we're suggesting is something that should be looked at in more detail, I think it will be very difficult for the Task Force to comment on that section if they haven't heard some of the detail that we've been discussing for the last couple of weeks.

THE CHAIRPERSON: Well, seeing how his company has contracted with DOE, I think we're safe on avoiding any conflict there. Or are we now?

MR. MILLER: I'm only concerned from the fact there are a lot of other companies out there that are either under contract with DOE or for other technologies -- I mean, we have to be careful that there are other technologies that would like the same opportunity.

MS. DREY: We could go on forever.

MR. MILLER: Yes. And then you're opening that up. I think that they need a method for keeping this moving, though, too because it's a technology that offers some promise here and that could be very beneficial to this site. But I do worry about those --

MS. PETERFREUND: Well, the issue of other technologies that might come forward we've now

identified them as potential for DOE to look at that so it's not that we would prevent them -- they've not come to this group and were not identified is something to be pursued in more detail. I mean, why would you have somebody get up and talk about soil washing.

MR. MILLER: I think it's rather presumptive to say that we've considered all the possible technologies.

MS. DREY: And we never will.

MR. MILLER: That's what I'm saying.

MR. SCHERZINGER: This is to be included into our report to the Task Force as leaving it open-ended.

MS. DREY: Yeah. Well, one of the reasons here today -- I think the reason we're here today is because the man with the County Health Department -- what's his name? Ric Cavanagh? -- said he didn't know enough about whether -- in the technology, unfortunately he didn't show up today which, you know, is too bad but, you know, maybe there are other people on the Task Force who feel they would like to know more about this.

THE CHAIRPERSON: You know, don't we have a report from this man?

THE FACILITATOR: Yes, we do.

THE CHAIRPERSON: And haven't we sent that to everyone?

THE FACILITATOR: No, I don't think so.

THE CHAIRPERSON: You know, as much as I can see it would be helpful, Laurie, I can still see where it would open a door to pressure from -- I mean, I realize that we need to hear some examples but I think we can do that -- I didn't even see the presentation.

MS. PETERFREUND: Well, let me go back to when we were talking about soil washing and Rust engineering, there were people that were knowledgeable about that technology that spoke before the group.

THE CHAIRPERSON: I was trying to remember that. How did that work?

THE FACILITATOR: DOE had contracted with the Clemson Technical Lab and Rust to test soil washing for both St. Louis soils and New Jersey soils.

MS. PETERFREUND: That's right.

THE FACILITATOR: And because there was direct connection --

THE CHAIRPERSON: To us.

THE FACILITATOR: -- there was already a contract, there was already something underway that they hoped had merit here, and because it involved our soils, we were invited to go take a look at it.

THE CHAIRPERSON: Not only that we authorized $250,000 for two years, you know, of our $15 million budget to study, as a Task Force we voted and approved of that expenditure, so that's why this is going to seem to some people who haven't been following this like a sales pitch.

MS. PETERFREUND: If we can find somebody else who is knowledgable about microwave --

THE CHAIRPERSON: Dr. Sobotka could talk for us on behalf of that technology.

MS. PETERFREUND: I don't think so. I mean he had a lot of questions too that weren't resolved. As a matter of fact, he was just asking me to have Jeff call him.

MR. SCHERZINGER: This is a guideline to DOE -- our recommendation to the Task Force for a guideline to DOE. The Department of Energy acts like any other rational, self-interested party. If it's cheaper and it's better, they're going to buy it.

But as a Task Force we don't have the ability to give out a contract. We can make a

recommendation but there are other vendors out there as well that they may fit the same criteria. I think that it is the Department of Energy's task to choose what technology they're going to choose to reduce their cost, to the reduce volume. This is our recommendation to them.

I have no idea what a pilot scale project would cost. I haven't seen or had a chance to analyze the technical information on it. The Department of Energy, you say, developed it. They will be able to look at it and evaluate it on its own merit as far as proprietary information.

Once they look at it and say we want to do this, they'll most likely contact our department to see if we'll give it our blessing. And then it will go under the lawyer's name and have lawyer-client confidentiality and we'd be able to maintain the proprietary nature.

But as the Task Force, you know, I'm not sure that it's up to us to tell DOE that this is how you're going to spend money when we have such a small budget right now.

MS. DREY: Well, we're asking for a bigger budget.

MR. SCHERZINGER: Yes, we are. And once we

get a bigger budget then maybe it would be appropriate for us to recommend technologies.

MS. PETERFREUND: I'm not suggesting that Ric meant technology, I just suggesting that we have experts present at the next Tuesday's meeting to present the concept of the technology, answer any questions that might come up from folks like a Lee or any of the other technical people that are part of the conversation.

MR. SCHERZINGER: I'm sure that nobody in the Task Force is going to disagree with any one of these seven things that we have come up with.

THE FACILITATOR: Well, let me suggest another possible course of action. I don't know what the right solution is but there were a bunch of questions that were raised today, this is really the forum where those things ought to be fleshed out if they are going to be, and then once we have worked our way through the tough questions and have gotten to some sense of where we stand, then it is time to make a presentation on that issue to the Task Force.

Before we started today it was my impression, and it is a vague one, but I thought that there was sufficient grasp around the table of the benefits of this technology to recommend it as

something specifically to be pursued.

THE CHAIRPERSON: Right.

THE FACILITATOR: It turned out that we weren't quite at that point.

MS. DREY: I'm not sure that's true.

THE FACILITATOR: Well, I thought there were a half dozen unanswered questions.

MS. DREY: You'll always have unanswered -- my father taught me that even a turtle can't go anyplace until he sticks his neck out.

MR. WESTER: I thought that your follow through to your list was the fact that here are some technologies that we have reviewed which are the positive list --

MR. SCHERZINGER: No, I have no problem with that.

THE FACILITATOR: Maybe I missed something.

MR. WESTER: -- for presentation to the full Task Force for consideration to be offered to DOE to follow.

MR. SCHERZINGER: Well, I have no objection with saying --

THE FACILITATOR: I missed that.

MR. SCHERZINGER: -- you know, that

vitrification looks like it could fulfill all these requirements and would recommend that you evaluate it.

MR. WESTER: Right.

MS. PETERFREUND: But don't we want to give the Task Force a little bit more meat behind that.

MS. DREY: I think the Task Force should have some and I think it may help pass my motion.

MR. SCHERZINGER: But we're having to call extra meetings right now because we can't get the work that we need to get accomplished, accomplished without bringing outside speakers.

MS. PETERFREUND: Well, we're having John Lark in to talk about Coldwater Creek. I don't care whether it's Dr. Golden or not but somebody who is knowledgeable about microwave technologies who can present an overview of how this works.

MR. SCHERZINGER: Right.

MS. PETERFREUND: And how it meets that set of criteria.

MR. SCHERZINGER: I have to apologize, I've exceeded my bounds, I don't sit on the Task Force.

MS. PETERFREUND: I don't either.

MR. GRANT: Well, I want to make a comment. If we were going to the Task Force and

saying you got to vote up or down now on whether we use microwave technology, vitrification technology, then I think it's very important that they get a full dose of what it is and understand all the details. At this point we're not going to go forward to them and say no or yes, we're going to go to them and say based on some criteria we've developed we believe this technology potentially has merit and ought to be followed up on, there's some questions that have to be answered and some reasonable program ought to be developed to answer those questions. And so I think on that basis I don't know that it's necessary that everybody get a primer on the technology. That could come at a --

MS. DREY: I don't think it can be in our Task Force report at this point because not enough people in the Task Force have heard what this is all about.

MR. GRANT: Yeah, but we're going to make a proposal, or a report and a proposal to the Task Force.

MS. DREY: That will include a description of this?

MR. GRANT: That this is a technology that we've identified as having promise and it ought to be

pursued to determine -- and where we've defined some criteria, some concepts here we have that are positive, we need to pursue it to make sure it really meets these criteria over the long run. Tom?

MR. BINZ: I think there are people ahead of me.

THE FACILITATOR: Well, actually I defer to the chair and then to Molly and then to you. Sally.

THE CHAIRPERSON: My only comment, whenever we have these times where we're not sure should we move left or right or stay where we're at, I think back to what we've done in the past, and that may not necessary, but in the case of Dawn and Envirocare we, as a working group, alternative sites, decided to flesh out the facts of each of those potential opportunities in the working group in special sessions because we hadn't been meeting for approximately a year and then report to the Task Force. And I think that's where these sorts of presentations have -- we try to deal with them on a smaller basis.

MS. DREY: Yeah, but I don't think that was good, Sally. I've always been sorry that the full Task Force didn't hear those presentations. I think they would have learned a lot. And especially

we want to ask for it to be done because I don't think we're capable, some of us at least, are capable of doing that.

MR. SCHERZINGER: It's perfectly --

MS. DREY: And it has promise. I really like that word.

THE FACILITATOR: Tom Shepherd has been biting his tongue for a while.

MR. SHEPHERD: As an observer it seems to me this group has evaluated a range of technologies and you've established a set of criteria on which you've judged them. It seems to me at least what we could consider for this next meeting is, in fact, describing that list of technologies you've evaluated and compare them against the criteria that you've used and, in fact, let the people see your decision about which ones you've retained as promising and which ones you've rejected.

And in that way it wouldn't be just soil vitrification or soil washing, you could describe everything you've done and the basis on which you have made your decisions and then let the Task Force -- I think that would be a way to let the Task Force see everything you've done without necessarily focusing on one or the other.

I mean, there's a range of things and it seems to me that might be one way to overcome whatever stumbling blocks you have here as well as get the information that you've generated in here to the Task Force at large.

MR. RODEN: First of all, I want to tell you, Kay, Ric Cavanagh had to go to Jefferson City for a Department of Health meeting, that's why he's not here this afternoon.

But, secondly, I just wanted to -- I kind of feel like -- I think we do need some primer, some primer or primer, on some of this vitrification. I don't think that the total Task Force is going to be up to par, even when we mention the term, to be able to evaluate that whole process without some kind of information.

And I don't particularly care whether -- you know, we have some reservation about who that might be, I would think that even a representative from the Department of Energy, maybe even from Rocky Flats, as far I'm concerned, at least be available to our meeting.

MS. DREY: The problem is just the delay. You know, which is what the DOE has been trying to do all these years.

should make a fifteen minute performance.

MR. SCHERZINGER: That's one quarter of our --

MS. DREY: All we have to do is vote on my motion.

MS. PETERFREUND: That was the primary reason for holding a special meeting was to deal with the technology issue.

MR. WESTER: Get it up to speed.

THE FACILITATOR: Before the day was over there were four agenda items.

MS. PETERFREUND: Right.

THE FACILITATOR: One of which was the Technologies Working Group report.

MS. PETERFREUND: And John Lark. I mean that's a technologies issue as far as I'm concerned. And Kay's motion. What was the fourth?

THE FACILITATOR: I don't remember.

MR. SCHERZINGER: If we had time -- I enjoyed the presentations.

MS. DREY: A ten year plan.

MR. SCHERZINGER: No. It's that people would like to -- I have no opposition to it. You know, we're up against the wall as far as the deadline is concerned and to bring in outside

THE FACILITATOR: In fact, the county has been the host for every one of these, or virtually all of these working group meetings.

MS. DREY: I don't think that's what she's trying to say. She's saying there are some questions that have been raised, as we had questions about the Riverfront Trail, we had questions about vitrification. I do not think -- I mean I wrote down that that we have studies of this technology as promised and then, I don't know, maybe I fudged on this a bit, and I said we would like to recommend to the DOE for its consideration. But I think the word promise -- and I don't think we should vote on anything about this technology. I'm not capable.

MR. SCHERZINGER: I would like to request that DOE evaluate.

MS. DREY: Okay. We would like to request that the DOE evaluate it. Is that what you're saying?

THE FACILITATOR: David Wagoner had his hand up a long time ago.

MR. WAGONER: I'd like to make a comment from my past instead of my present. I was the division director of the Waste Management Division of the EPA, the way the record and decision process goes

will provide, as Jim says, plenty of opportunity to evaluate technology. You don't have to decide on a technology. In fact, there will be design studies and those kinds of things around any technology that isn't kind of state-of-the-art, and I don't think vitrification is, so I think it could be -- I think you are right there's plenty of time to consider this kind of a technology and if you went ahead and put something in like Kay is suggesting, I mean, you suggest and it'll be considered. And that can be developed in the record of decision --

MS. PETERFREUND: I don't think anybody is arguing with that. I think that that's what this group wants to come forth as a statement but what we're talking about I think is how much information, how much background information we want to share with the folks as a Task Force and community about why we thought this was promising.

MS. DREY: I decided not to raise my motion this morning because I heard that Ric Cavanagh wanted to learn more about this.

MR. MILLER: It would be nice to also get, I think, the information that Mitch has requested to us and I don't quite understand why he can present it to the Task Force, you know, in the next meeting and

we don't have it here.

MR. WESTER: I don't know that there is anything --

MS. PETERFREUND: Yes, the concept and how the process works. What Mitch is asking for is some very specific numbers on what was actually done at DOE and I don't think that the Task Force would care.

MR. MILLER: Well, but that's how threshold issues move to the Task Force is to get that rigor of examination at this level and then they move from this level to the Task Force level. And I hear they haven't gotten that here.

MS. DREY: Well, you know, I guess my feeling is, speaking of my motion, I think next week is an important time because Jim is going to start writing his report. I think he needs to know from us --

THE FACILITATOR: Your report.

MS. DREY: I offered to wordsmith.

THE FACILITATOR: No, it's your report. I'm serious about that. It's not my report.

MS. DREY: Well, I think you may want to put a committee together to help you with it. But at this point I think it's extremely important for us to

evaluate whether we think -- and my proposed motion is that the airport should be considered the primary site, but when I heard Ric Cavanagh couldn't vote on that because he didn't know enough about this potential technology, I mean -- it doesn't do any good to say we want to clean up the airport site if we don't -- even if there's way to do it.

MR. MILLER: Will he know anything more as a result of this presentation --

MS. DREY: I learned.

MR. MILLER: -- that the information that Mitch is asking for is really the kind of information you need to make a decision, a remedial decision, about whether a technology is ready to go to pilot or field or to actually be implemented?

MS. PETERFREUND: But all we're saying as the Task Force is this has promise and the DOE should look at it. And we're just saying to the Task Force just give them a little bit more background information on what microwave vitrification is.

MS. DREY: Were we saying airport site here or St. Louis site? St. Louis site means all kinds of -- I was thinking in terms of the airport site.

MR. MILLER: I think that offers opportunity --

laser ablation and gamma ray spectroscopy. Something along the lines of the Technology Working Group --

MS. DREY: But you're listing monitoring and technologies and treatment technologies. I don't think we need to take on both.

THE FACILITATOR: They're a package.

MR. WESTER: They're a package.

MS. DREY: Isn't that monitoring, though?

MR. WESTER: No.

MS. DREY: As a part of this thing it isn't?

MR. WESTER: Analytical.

MR. MILLER: Characterization.

MS. DREY: Well, it's sampling and analyses and so forth, okay. I call that monitoring. I think to do that might make people think it's way beyond them. Laser ablation, it sounds Jewish if want my opinion.

THE FACILITATOR: Oh, my goodness.

MR. WESTER: I won't say a word.

MS. DREY: Laser ablation is a Jewish term, I'm sure.

MS. PETERFREUND: Call it LAN technology then.

THE FACILITATOR: I don't know how anybody

else feels but I'd like to try and get this wrapped up so we can get on with life.

MR. SCHERZINGER: Something along the line of the Technology Working Group believes that there are technologies which show promise for application at the St. Louis sites and request that the DOE evaluate --

THE FACILITATOR: Them?

MR. SCHERZINGER: Them. These include but are not limited to microwave vitrification, laser ablation, and gamma ray spectroscopy.

MS. DREY: See, those last two are not treatment technologies.

MR. WESTER: Nowhere does it say it's treatment, does it?

MS. DREY: Well, they're apples and oranges.

MR. WESTER: No.

MS. DREY: And my feeling is if you're going to list a technology, you're only listing one.

MR. WESTER: No.

MR. GRANT: Yeah, we've focused on treatment technology --

MS. DREY: Yeah.

MR. GRANT: -- soil washing, vitrification

but we also haven't ruled out characterizations that --

THE FACILITATOR: You know, it's funny, it's ironic, because at one point early in the game we said we weren't going to pay much attention to characterization.

MR. GRANT: We did say that but I think it's part of the whole package.

THE FACILITATOR: I agree with you.

MS. DREY: But you can characterize forever, Jim, and not have --

MR. WESTER: You're missing two words.

THE CHAIRPERSON: To achieve those objectives, you have to do the other thing.

MS. DREY: Well, let's put it in parenthesis so that it shows that it's related to that.

MR. GRANT: No, Kay, this is a different type of characterization.

MR. WESTER: It is expedited characterization to meet DOE's own approach to these projects.

MS. DREY: But it won't clean the soil up.

MR. WESTER: But it helps in the volume and cost containment.

THE FACILITATOR: Okay. Believes there are technologies. Or that technologies exist. Does that hold promise?

MS. DREY: That's better because my mother-in-law used to tell me not to start with there is or there are.

THE FACILITATOR: Okay. Believes that technologies exist that hold promise --

MS. DREY: I'm going to jail because my car has --

THE FACILITATOR: -- for application at the St. Louis site and request that DOE evaluate them. These include but are not limited to.

MR. WESTER: Right.

THE FACILITATOR: And then I would list microwave vitrification, laser ablation and gamma ray spectroscopy.

MR. WESTER: Laser ablation slash nebulization.

THE FACILITATOR: Slash nebulization. That's new. You didn't have that when you were --

MR. WESTER: Oh yes, it's been there all along.

MS. PETERFREUND: That's the "N" in LAN.

MR. WESTER: LAN spectroscopy. And the

other one is mobile gamma spectroscopy.

THE FACILITATOR: Look, I feel really accomplished just having, first of all, learned that these words exist and learning to spell them and now having learned how to say them.

I think we can pull something together that will deal with this on paper. Now, the question is what do you in terms -- or are we doing anything in terms of a presentation?

MR. WESTER: No, you don't have to. I think you've done the job.

THE FACILITATOR: Okay, great.

THE CHAIRPERSON: I'm not clear on what you mean. We don't need to talk about this, do you mean?

MR. WESTER: Yes you can, anyway that you want, but in terms of preparing so that it's a formal presentation beyond the Task Force making the statement and presenting it -- or the working group making the statement to the Task Force, what else has been done in any other of the groups, isn't that the way they come out?

THE CHAIRPERSON: It's always this way.

MR. WESTER: Yeah.

THE FACILITATOR: Generally what happens,

and this I think goes to what you were talking about before, Molly, generally the nuts and bolts work, the give and take, the identification of unanswered questions, the filling of those voids, et cetera, all takes place in whatever is the appropriate working group so that there is adequate time in a smaller forum for details to be really understood.

And then once that has occurred, a report is developed and that is presented to the Task Force in advance of the meeting with plenty of time to absorb and to then discuss it.

The practical impact has been that we have gotten through a process effectively, we have reached conclusions that have been adopted by vote, formal vote of the Task Force, that we would otherwise still be debating if we hadn't done it that way.

MS. BUNTON: I appreciate that. My goal as a matter of fact was not to make Mr. Grant faint or to offend Mallinckrodt because I was trying to bring up was what I saw this morning with the trail and how it occurred and that the county -- because I represent the county -- not be given short shrift in anything.

THE CHAIRPERSON: You know, I really think that you and I should talk because the county hasn't

been very active at our meetings. The city has somebody at our meetings, all of our working group meetings, all the time. And it really isn't -- we have the airport representative, Jan Titus, speaks for the city.

MR. SCHERZINGER: We also have a lot of concerned citizens from the county that are active members.

MR. GRANT: We've been through a process where in the beginning all of the areas that were thought about being treated as part of the money that's being spent, everybody had an opportunity to lay on the table all those things, went through a prioritization process through the priorities committee, came back to the Task Group, was all voted on, and it's all gone through a long, formal process.

And it bothers me to hear that somehow that Mallinckrodt is being accused of manipulating things and getting all the money to come down to Mallinckrodt. Yes, we've had our plans and programs thrown out there. But I haven't added up the costs I think there's as much or more monies earmarked and spent out in the county area than downtown.

THE FACILITATOR: Well, in fact, when the

Task Force put together its fiscal year '96-'97 recommendations there was a conscience stated effort to balance the recommendations so that the benefits would flow in some sensible way evenly across the spectrum.

THE CHAIRPERSON: I am a citizen of the county and I'm simply a representative of citizens.

MS. BUNTON: I think that's great.

THE CHAIRPERSON: But I championed that particular issue within the working group when it came to the Riverfront Trails issue, and I didn't do it in a sense that I disagreed with the trail, I actually think the trail is a wonderful thing --

MS. BUNTON: I do too.

THE CHAIRPERSON: -- for the metropolitan area, the bi-state area because of the Chain of Rocks bridge into Illinois and all that, so the whole picture -- and I realize you're new to this, but there's been so much background and we have piles of papers if you want to trace back and see how it all unfolded, but I brought up that issue because on paper -- and somewhere there is a flip chart that shows 2.9 million was left and nine or so million went downtown. And I'm all in favor of what happened downtown, but I know how it happened. To a cold

observer they might be confused. And that's why I brought it up. And so I wanted the working group to consider it and to justify continued expenditures downtown and in light of it.

And it's all in the minutes and the reasons for going ahead with it are in the minutes and the fact that we in absence of a trail project because at that time we did not know if it could go forward depending on the money, the characterization studies, in absence of it going forward the money was going to be spent on haul route cleanups in the county. So there's been a give and take, it's not all one or the other.

MS. BUNTON: And I am new to this particular process although I worked on this for many years in previous life, and it was the same issues, only just different times. And I think Joe Cavato was a representative that was with this group for some time.

THE CHAIRPERSON: He was and now he's gone. There's hasn't been the continuity with the county that we've had with city but I don't think we've been short shrifted from it.

MS. BUNTON: No, I didn't say that. I just wanted to keep our conversation on the table because

it so important. If we're on the edge of doing anything good, I just want to give it all the conversation we can give it. And I think you would appreciate that.

MR. GRANT: This whole committee is here because I asked that it be put together so we could evaluate technologies to see if there are ways of saving money over the hog and haul way of doing things. And I was hopeful that if we could do that we could keep the cost down and be more effective in getting some things done.

So if there are any technologies anybody has out there that would be beneficial, particularly for reducing the cost, let's get them on the table.

THE FACILITATOR: But let's hurry. I think what we ought to do is wrap this up. I think we've got what we need, we've got more than we need actually, to try to develop a report in the next few days so that we can get it out and available for discussion next Tuesday. That's going to be a bear. So I would like to suggest that the meeting is formally adjourned and that if we want to carry on in informal discussion, that's fine, but I'd like to let this lady go home.

MR. GRANT: That's fine.

(Adjourn.)

CERTIFICATE

I hereby certify that the foregoing is an accurate and complete transcription of my shorthand notes taken at the aforesaid time and place.

Court Reporter

Date

Formerly Utilized Sites Remedial Action Program (FUSRAP)

ADMINISTRATIVE RECORD

for the St. Louis Site, Missouri

U.S. Department of Energy