ORIGINAL

PUBLIC MEETING

ON BEHALF OF

MASON & HANGER-SILAS MASON CO., INC.

AND THE

IOWA ARMY AMMUNITION PLANT

PZAZZ MOTOR INN

THURSDAY, JULY 9, 1998

TRANSCRIPT OF MEETING

APPEARANCES:

Mr. Rodger Allison, Project Manager, IAAP
Mr. Derek Romitti, U.S. Army Environmental Center
Mr. Kevin Howe, U.S. Army Corps of Engineers
Mr. Scott Marquess, Environmental Protection Agency
LTC Jyuji Hewitt, Commander, IAAP
Mr. David Scharre, Project Manager, Harza Environmental Services, Inc.

M. JANE WEINGART, C.S.R., R.M.R.

(Time: 7:00 p.m.)

MR. ALLISON: Okay, I think we'll go ahead and get started. I'd like to welcome everyone.

My name is Rodger Allison, I'm the project manager for restoration efforts out at the Iowa Army Ammunition Plant. And this evening we're here to accept public comments and discuss the overall project regarding soil cleanup out at the Iowa Ammo Plant and accept specifically comments regarding the feasibility study and proposed plan that regards the cleanup of soils that are stockpiled in what is called the Corrective Action Management Unit or otherwise known as the CAMU.

Before we begin I think I'd like to go right down the line and let everyone introduce themselves, and when it gets down to Colonel Hewitt he had some opening remarks for us.

So, Derek.

MR. ROMITTI: I'm Derek Romitti from the Army Environmental Center. It's located at Aberdeen Proving in Maryland. Our agency had the lead on the investigation portion of the project prior to or leading up to the remediation portion, which we transferred or transitioned to the Army Corps of Engineers, Omaha District.

MR. HOWE: I'm Kevin Howe from the Army Corps of Engineers out of the Omaha District, and as Derek indicated, the Corps of Engineers took over the cleanup activities at IAAP, or most of them, in a transition from Army Environmental Center who did two preliminary studies and so forth, and we are now in a design and construction phase and I am the project manager for the Omaha District and the activities that we're performing out here at Iowa AAP.

MR. MARQUESS: I'm Scott Marquess, I'm with the EPA in Kansas City and I'm in the Superfund program and we provide oversight of all the cleanup activities that the Army does at the plant under the Superfund or circular program. And just so you know before we get into this, we've selected this cleanup strategy for the soils that are stockpiled out at the plant jointly with the Army, and EPA supports the remedy that the Army is going to tell you about, propose to you tonight, so --

LTC HEWITT: I'm Lieutenant Colonel Jyuji Hewitt, the Commander at the Iowa Army Ammunition Plant. I want to welcome you all to come here. I know just like many of you, I'm a parent and there's a lot of conflicts out there which you probably rather do, you know, there's ball games and all that other stuff, so I really appreciate you all coming out here to

support this effort.

I've said many occasions that the Army is interested in the environment. I think that's part of the program which you're seeing here. You see some of the program managers that we have ongoing with the project out there. It is a team effort, and you, the community, is part of that team. We have had a great project going on as far as restoration. You see the pictures on the wall kind of depicts the history of the project.

What we're going to talk about is how to handle the explosives in the soil which is part of that overall project, and we can do a lot of the work, but, you know, we recognized a long time ago it works best if we have community input as well and that's where you all come in, so I really welcome you all to come in, listen to the briefing, apply your comments, and if you've got any questions at the end kind of direct them towards Rodger, who is my staff advocate for the environment at the Iowa Army Ammunition Plant.

And with that being said, let's roll the tape, as they say.

MR. ALLISON: Okay. Thank you, Colonel. That's -- I do want to point out that the feasibility study was our -- well, it describes the alternatives

that we considered. It goes pretty well in-depth on various phases of all those alternatives and the proposed plan which is a more concise document, a shorter document, it identifies our preferred alternative.

Now, when we say our preferred alternative, that, that indicates, that doesn't mean it's strictly the Army's. We've been working with the EPA, we've been working with other agencies, we have the Restoration Advisory Board that has been coming on board and been working with us. But if any of you that haven't been able to see any of the documents -- at your leisure you can currently view those documents at our public repository which is at the Iowa Army Ammunition Plant, they're in the Visitor Welcome Center, it's in the Public -- Burlington Public Library and it's at the Danville City Hall, so please feel free at any time to go down and view these documents as well as the overall restoration project documents at your leisure.

This is the last step before we move into the record of decision, so we, we certainly do welcome your comments and we value your input.

I think at this point I'll turn it over to Dave Scharre, who is a contractor to the Corps of

Engineers. He comes from Chicago. He's with Harza Environmental Services.

Dave.

MR. SCHARRE: Thank you, Rodger. I'm custodian of a rather cantankerous computer which displeases me, so I'm glad to see it is working.

My name is Dave Scharre, I'm with Harza Environmental Services. We've been serving as consultants, consulting engineering working with the Army and the EPA developing and evaluating alternatives for treatment of the soils that Rodger is referring to, contaminated soils, soils on-site. The results of our work are summarized, presented in the feasibility study that Rodger mentioned and then summarized post plan, which is the subject of this evening's presentation and discussion.

First I'll talk briefly about the purpose of the proposed plan. It's first to describe the remedial alternatives that were considered for the treatment of the soils and then identify what Rodger referred to as the preferred alternative and explain that to you, present the rationale for that selection, explain why we came to that conclusion, and then solicit input from, from the public. This is identified as the preferred alternative. Changes in that plan may be

made if public comment indicates that some more appropriate plan should be, should be implemented.

The proposed plan document that some of you may have seen follows the outline that's presented on the screen here and this is basically the outline that I'll be using to talk through this evening in the next half hour or so. We'll talk a little bit about the site background, about the history of the site, previous investigations and actions that have been undertaken relating to soils contaminated there. We'll talk briefly about site risk, the reasons why the soils were, were considered a problem in the first place. We'll talk about the scope and role of the action that we're undertaking now, the remedial action objectives; that is, what we intend to do. We'll summarize the alternatives that were considered, describe some of the evaluation of alternatives and then present the bottom line, the preferred alternative, for discussion.

First of all, let me say as I go through the discussion if you have some questions please raise your hand, ask them. If it's something that I'll be getting to a little bit later I may just indicate that. Otherwise we can talk about things or we'll have a period for discussion again.

One other point, there are lots of acronyms

used in this, in this business. I'm going to try to explain what they are the first time I introduce them, but if I just rush over something or don't explain it thoroughly enough, again, please raise your hand and stop me.

I'll assume you're all relatively familiar with the site as far as background, the site and the history. That is, that the plant has been used for production of munitions since World War II, is still in operation, although limited operation, certainly less than at its peak.

The contamination that is on-site has been caused by those past operating practices over the last 50 years or so. Those -- and I do want to emphasis past practices. Those practices have changed, a number of modifications have been made over the years, but there's contamination from the past that has to be cleaned up. The site was listed on the NPL, the National Priority List, which is the federal government's, the EPA's list. When it was listed in 1990 a Federal Facilities Agreement was established between the Army and the EPA outlining the procedures for addressing the problems on-site.

The Army is the lead agency in undertaking remediation, investigations and remediations and EPA is

providing the oversight of that work and working very closely with the Army.

A number of investigations have been conducted looking into site conditions, starting really in about the mid '70s. Several cleanup projects were initiated in '95 through '97 dealing with specific areas of contamination in various places. As I'm sure you know, it's a very large site and there are a number of independent areas that had to be dealt with. What is called an Interim Action Record of Decision, or ROD, was produced and formalized in March of this year. This Interim Action ROD deals with the beginnings of the soil remediation. The proposed plan that we're talking about tonight is the final step for that soils remediation when we are done with this interim action.

The outcome of the interim action was that a number of areas of soil contamination around the site were identified and a plan was developed to excavate the soil from all of these different areas and bring them to a central location on-site. Soils were characterized based on the level of contamination they found. They varied from very high to very low, still low enough where action was necessary. The highest levels of contamination, soils with the highest level of contamination were excavated and stockpiled in what

I think Rodger referred to as the Corrective Action Management Unit or CAMU. This is an engineered landfill on-site, it's intended for temporary storage and stockpile until those soils can be treated as a result of the proposed plan we're discussing here tonight.

Soils with moderate contamination and lower levels of contamination were excavated and permanently disposed on-site in either the on-site soil repository or the inert landfill. Both of those are also engineered landfills intended to contain these materials and these, for these moderate and low levels of contamination this is an appropriate permanent remedy for those materials.

The CAMU, itself, is the subject of the proposed plan and the final action will be undertaken. The CAMU will contain, when it's completed, close to 10,000 cubic yards of contaminated soil. That soil can be grouped in three different categories. The largest grouping is contaminated with explosives residues as might be expected from the site. Small quantity, about 600 cubic yards, is contaminated with explosives plus metals at high enough levels to be of concern. And finally, very small quantity, around 200 cubic yards, is contaminated with what is referred to as

semi-volatile organic compound or SVOCs. These are a few, a handful of different organic materials that, that result in a different classification for that material.

As far as risk of this material, a baseline risk assessment was developed previously to evaluate the risks of soil contamination at the site prior to beginning any of these remedial actions, prior to beginning the excavation. This actually provided the basis for classifying the soils as high, medium or low, low levels of contamination. What that really refers to as high, medium or low levels of risk from risk to human health or the environment. Those site risks have been mitigated or are being mitigated through containment in the CAMU or the soils repository or the inert landfill and treatment of the materials in CAMU.

The treatment is what we're going to be talking about. Just in an overview of histories at the plant, there are four what is called operable units that have, have been established, actually three that are functioning now. OU number -- operating unit #1 deals with soil contamination throughout the site. OU #2 was used on an interim basis; for simplicity and completeness was merged in with OU #1 soils, not used anymore.

OU #3 deals with groundwater issues, whether on-site or off-site, and OU #4 is permanent, installation-wide unit, that, that will deal with, call it odds and ends -- final closure of the CAMU after all the soil has been taken out and treated, it will deal with what is termed institutional controls such as possibly deed restrictions on future uses of the property, it may deal with environmental risks that might be identified sometime in the future, really any other issues that may come up in the future that are not already being covered under OUs #1 and 3.

Now, the proposed plan that is out for discussion right now is dealing just with OU #1. It's the final action for soils under OU #1. Groundwater and these odds and ends will be taken care of under OUs 3 and 4, but those, those are separate, separate actions. There will be other meetings such as this in the future with regard to them.

Remedial action objectives for the final soils action are identified on the screen now and there are really three types of objectives here.

First is to provide treatment of these soils that are contained in the Collective Action Management Unit to reduce toxicity, mobility and volume of the materials that are contaminants. Second, to comply

with some regulatory requirements that are referred to as land disposal restrictions, or LDRs. They're mentioned in the discussion. And finally, to provide -- finally and, really, overall to provide for the long-term protection of the health, human health and the environment in this area.

There are two methods of achieving compliance with those objectives that come into play in dealing with the soils. First is treatment followed by management of the treated residuals in a landfill on-site. Second is the possibility of treatment to even lower levels, a greater degree of treatment followed by unrestricted land application. These lower levels would, of course, also be based on risk considerations and assurances that there are no unacceptable risks with that action.

Remedial alternatives that are presented in the proposed plan have been developed for each of the three classifications of contamination because there are differences in the contaminants, there are or may be differences in the ways in which they can be handled, so we developed alternatives for each type of soil contamination independently.

First we'll talk about explosives-contaminated soils. I'll present the

alternatives that have been developed for those, and then we'll talk about the smaller volume of explosives plus metals and then the even smaller volume contaminated with SVOCs.

Four alternatives were developed in detail and presented in the proposed plan for dealing with explosives-contaminated soils. Really are two thermal alternatives in consideration and what is called low temperature desorption or LTTD and then two biological options, composting and what is called bio-slurry treatment.

There are a number of common elements to all four of these and I'll talk about them briefly and then get into the specifics or the differences among them. First, they all involve excavation of soils from the CAMU, the Corrective Action Management Unit, and transport of those soils to a temporary treatment facility on-site.

They all involve preparation of the soils for treatment, screening and grinding of the, crushing and shredding of the soils and then blending to provide a more uniform feed to provide a more uniform treatment, and then treatment using whatever specific technology is identified by the alternative. That's really what varies is the treatment technology. After treatment,

confirmation sampling will demonstrate and will verify that the treatment was effective in reaching the treatment goals, treatment requirements, and then the treated soils, the residuals will be disposed of on-site. So these are common to all four of the alternatives.

First alternative in consideration involves use of the mobile rear kiln incinerator on-site. This mobile unit would include appropriate air emissions controls to control releases and comply with regulations on air emissions. Trial burn would be conducted and risk assessment will be, would be developed and presented to the public prior to implementation of this alternative. Both of these would monitor the performance and emissions and safety issues associated with incineration.

The actual treatment, itself, only takes a couple of months of facility operation on-site. The total project, though, takes about two years to implement. The initial year and 10 months or so, the initial part of the work involves developing the specifications for the work, soliciting bids, reviewing the bids and awarding contracts, conducting the trial burn, developing the risk assessment, developing work plans that detail the procedures that the, that will be

used in the operations, mobilizing the equipment on-site and getting it set up and so on.

The second alternative, low temperature thermal desorption, uses the technology that are in many respects similar to incineration. The differences are primarily technical. The biggest is that it operates at a lower temperature. Because it operates at a lower temperature in the initial chamber the equipment is, doesn't need to be as, as robust, it can operate safely and effectively so it's less expensive to build, operating at a lower temperature is less expensive to operate. It also involves moving mobile equipment on-site, includes appropriate air emissions control facilities. A trial burn and risk assessment also are required for low temperature thermal desorption.

The operation takes a little bit longer, it takes about six months to complete, just operates at a somewhat slower rate. The overall project, then, is about two and a half years, again the same planning activities up front.

The third alternative and the first biological alternative is composting. This alternative is, use of technology really is something you may be familiar with if you have a compost pile in the back

yard for grass clippings and leaves. It's really the same, same idea, the same technology. Soils are blended with appropriate amendments to provide some structure and provide some nutrients for naturally-occurring microorganisms, environmental conditions are maintained in terms of temperature and moisture and air and the microorganisms degrade the contaminants and break them down.

There's also a binding operation as a result of composting. Contaminants are degraded and then complexed with the soil matrix, itself. A temporary shelter would be provided so that this operation can go on year-round, environmental conditions could be controlled in the wintertime or in the rain. It takes about a year to complete the treatment operation, itself, so adding the two years of planning and so on up front, a total of about three years of, for the project.

The finished compost may, may be suitable for direct land application if additional testing and investigations confirm that the destruction and binding of contaminants is complete enough for the direct land application to be safe. Otherwise the compost would be landfilled on-site. That, in fact, is the basis for the cost estimating that's presented in this -- is the

assumption it would be landfilled on-site.

The fourth alternative dealing with explosives-contaminated soils is what is termed bio-slurry treatment. In this case the soils and amendments, nutrients and so on are treated in a wooden liquid slurry. They're made up in liquid slurry and then treated in temporary facilities that would be erected on-site. These temporary facilities are really very similar to what is used for biological wastewater treatment, for treatment of wastewater in a municipal wastewater treatment plant. It takes about three to five years to process the soils in this manner; adding the initial planning activities up front, a total of five to seven years for this alternative.

Those were the four alternatives that were evaluated in detail for the explosives-contaminated soils.

For the soils that are contaminated with explosives plus metals there are three alternatives that were developed and presented. The first one involves processing these soils through whatever is selected for the explosives-contaminated soils, one of those first four, to take care of the explosives portion, and then following up with a solidification process to deal with the metals.

Solidification would involve blending the soils with cement, fly ash, other materials that then form a solid matrix and bind the metals contamination within that solid matrix so that they're immobilized, they can't, they can't move, they can't leave the site. That residue would then be, be landfilled and managed on-site.

The second alternative is a variation on the first. Instead of processing these soils along with the first group of soils, explosives-contaminated soils, this, these soils that have explosives and metals would be processed separately using a solidification/stabilization process that uses both the cement-fly ash technique for binding up the metals and the addition of activated carbon for binding up the explosives, so the combination of those produce a matrix that binds both of the contaminants concerned into a solid material that again is landfilled on-site.

The third alternative for this small volume of soils was the possibility of off-site disposal. Off-site disposal, of course, would be a commercial, a licensed commercial waste disposal facility.

The third category of contamination, contaminated soils was those contaminated with SVOCs, the semi-volatile organic compound. The first four

alternatives presented here are the same as were presented for the explosives only; that is, incineration, low temperature thermal desorption, composting, bio-slurry treatment. And the last one for this small volume was off-site disposal again in a commercial licensed, regulated, off-site disposal facility.

As a description of the alternatives that are presented in here were developed in detail, each of these alternatives was evaluated against nine specific criteria that are identified in the EPA regulations. These criteria are listed on the slide and the next slide, couldn't get all of them here.

The first one was overall protection of human health and the environment. This, of course, is the basic requirement of all of the work that's done here.

Second is compliance with what is termed applicable or relevant and appropriate requirements, or ARARs. There are a number of different regulations that either apply directly to specific activities or are at least relevant and appropriate and they all need to be considered.

After these two initial threshold criteria there are several other criteria. The long-term effectiveness and permanence of the alternative, the

alternative's ability to reduce the toxicity, mobility and volume of contaminant. The short-term effectiveness -- short-term effectiveness refers to effectiveness while the process is actually under way, so if you're concerned in connection with things such as safety for the operators, the safety for the community while the remedial action is being undertaken.

In addition, we had to evaluate the implementability of the alternatives, can we really do those things or not under these site-specific conditions, the cost of the alternatives, and then state and community acceptance. Are these going to be acceptable with you.

These are the nine criteria that were evaluated, and we go to each of them individually in relation to the explosives-contaminated soils, the largest volume of soils that we're dealing with.

First, overall protection of human health and the environment. Well, both thermal processes and the biological processes provide treatment, they provide destruction and/or degradation of the contaminants to acceptable levels and management of any residuals, on-site in a landfill or other manner. So they all meet that requirement.

There are a number of ARARs, applicable or relevant and appropriate requirements, that apply to all of these alternatives. The thermal treatment alternatives have a couple of extra requirements that would apply to them. These would relate to air emissions and combustion facility risk assessment. The biological processes would not have those ARARs to deal with. Otherwise the regulations are pretty much the same on all of them.

Long-term effectiveness and permanence of the process. Both the thermal and biological treatment processes are considered irreversible. The processes degrade the materials or destroy the materials and the materials are then not going to recombine or reform on their own sometime in the future. The destruction is more complete with the thermal processes, as may be expected.

The reduction of toxicity, mobility and volume. Both thermal treatment and the biological treatment reduce the contaminant below the requirements. Although the thermal treatment provides a greater degree of reduction, as I indicated on the previous slide, biological treatment provides enough reduction to meet the requirements, manage the risk associated with any residuals that might remain. So

both of them do address the toxicity and mobility of contamination.

As far as volume change goes, incineration, as you might expect, reduces the amount of volume. The compost will actually increase the amount of soil to be dealt with. It will destroy or degrade or bind up contaminants, but the volume of soil will increase because there are amendments that are added to the compost. The volume may increase by 50 to 100 percent, so we may have more soil to deal with. There's room on the on-site landfills to contain this additional volume, that's not a problem. The low temperature thermal desorption and bio-slurry are not expected to have any significant change in the volume.

Short-term effectiveness is the next criterion. In general, alternatives are short-term effectiveness. The thermal treatment, as we mentioned previously, do require combustion risk assessment to identify the appropriate measures to be taken to manage risk and provide for short-term effectiveness and plan those measures now.

In terms of implementability, all of these technologies use commercially available equipment. There are multiple vendors available to furnish these technologies. All of them do require some additional

testing, testing has been -- testing of one sort or another has been undertaken on these specific soils using each of these technologies, but some additional testing, the trial burns for the incineration processes and some additional treatability testing to further define the specific requirements for composting or bio-slurry treatments under these site-specific conditions would be required, so that's equivalent for all of the alternatives.

There are differences in the time required, as I indicated when we talked about the alternatives individually. Consideration of low temperature thermal desorption might be two, two and a half years to implement, composting around three years, bio-slurry five to seven years or longer.

Cost is, of course, a factor in decision-making of this sort as well. This slide presents on the left individual alternatives. The second column is the capital cost, which is the cost of the initial construction, the initial setup and the initial planning and the initial testing, all of the -- everything that's needed to get things under way. And then operating cost, costs to continue to do the treatment and the variable costs depending on the volumes. And then finally in the right-hand column all

-- the capital and operating costs were pulled together in what is called present worth so that we can compare alternatives.

If we have an alternative that has high capital cost but a low operating cost but a long period of operation and another one that has a low capital cost but high operating cost, a short period of operation, it may be a little difficult to pull things together -- it's present worth equalizes them, and as the note says, does include contingency as well. As you can see from the figures presented here, the total cost for incineration is noticeably higher than the other alternatives, it's expensive. The equipment is expensive and the energy it takes to run it is expensive.

Low temperature thermal desorption, the composting, and even the bio-slurry treatment are -- within the precision of these sorts of estimates, are pretty close. The bio-slurry treatment may be a little bit more expensive than the other two, but for discussion purposes they're very similar, they're close.

The last two evaluation criteria were state and community acceptance, and that's what you're here for. Those issues will be addressed at the end of the

public comment period and take questions later at the end of the presentation, will be receiving written comments through July 20th, and then all of those comments will be brought together and addressed in what is called the Record of Decision, the ROD, which is the formal legal document that comes out of all of this.

That's the evaluation of the alternatives for the largest volume of soils, contaminated with explosives only. We went through a similar analysis, similar evaluation for alternatives dealing with soils contaminated with explosives plus metals. The results, quite frankly, were, are very similar to the alternatives that, to the evaluation we just went through. I had slides originally prepared for that, going through each of them again, and we decided that was going to be too repetitive, too redundant. The bottom line is there were no significant differences among any of those alternatives for dealing with explosives plus metals.

As far as costs go for this class of soils, the first alternative treatment with the explosive soils treatment followed by solidification and stabilization, and the second one dealing with these separately through a solidification/stabilization process, they're very similar. Off-site disposal at a

commercial facility is more costly.

The SVOC-contaminated soils, again, the results of evaluations of these alternatives are presented in the proposed plan. Again, no significant differences between them, the evaluations are very similar to what we talked about previously. The one difference of note is that the effectiveness of biological treatment for these compounds is, I'd have to say, uncertain. The effectiveness varies with the specific compound, some are very -- some SVOC compounds are very amenable to biological treatment processes, others are more resistant, and testing has not been done on that small volume of soils using biological process fees that were to be implemented and then testing, of course, would have to be done.

Costs really, regardless of which way we approach it, the volumes are so low that the cost differences are not significant. We're talking at least, at least compared to the total project it's not a significant cost. Compared to my checkbook, yeah, it's still a real number, but the difference in the overall scope, the differences between the alternatives are not significant.

So, finally, the bottom line preferred alternative. As presented here in the proposed plan,

preferred alternative for dealing with the explosives-contaminated soils, the largest volume, is low temperature thermal desorption. That appears to be -- that's a very effective way of dealing with these soils, very economical way, it's relatively quick way of dealing with the soils as well.

Biological treatment has been identified as contingency. As I indicated, there is additional testing to be done on all of these processes, really, but additional testing to be done on low temperature thermal desorption and the combustion risk assessment to be prepared and presented to the public. If the outcome of that has some surprises, if it's not satisfactory, it's not acceptable for one reason or another, then the contingency is biological treatment, which also this is a very effective way of dealing with these soils, it's just overall the balance is in favor of the low temperature thermal desorption.

For the soils contaminated with explosives plus metals, the solidification/stabilization with the activated carbon is the preferred alternative. This way, these soils are dealt with separately from the explosives-contaminated soils and are dealt with independently, they're not contingent upon anything else, can be dealt with and gotten out of the way.

And, finally, for the SVOC-contaminated soils, preferred alternative is off-site disposal at a commercially licensed, regulated waste disposal facility. It's a small enough volume that it's really not worth dealing with in any of the other ways, there's a very simple way of getting it done.

So that's the end of my presentation here. I'd turn it back over to Rodger for discussion, questions and comments. As noted on the screen, the public comment period ends July 20th. The formal responses to the comments, both comments presented here and comments presented in writing, will be presented in the Record of Decision.

MR. ALLISON: Okay, thanks, Dave. That was an excellent presentation. Thank you very much.

As Dave said, the public comment period does end July 20th, so you have a little time to, to prepare any written comments or questions that you'd like to pose to us regarding this selection, you know, if it comes to you later and then we'll respond as well formally in the Record of Decision, and I'm sure that we can make sure that you get a personal response as well.

So like to open it to the floor for questions, comments.

MARK HAGERLA: One comment, Rodger. The incinerators you have on-site now, I know they're not large enough for big volumes, but are they capable of doing any of this project?

MR. ALLISON: No, and the reason I say no, first of all, we've not looked into it and I think there would have to be some additions or adjustments made to those particular processors to, so they can do the job that we're after. The low thermal treatment isn't a direct incinerator, so it cooks off the explosive or the compound and moves that air into another chamber and that's where it burns it off from that, that air, and our processes don't handle it quite like that.

MR. MARQUESS: I think that's soil handling issues.

MR. HOWE: The process is different enough that I don't think the existing facilities would be well suited to do it either in materials that they would have to handle or volumes that they would have to handle and there may be -- I suspect there would be permitting issues, too. I think they're permitted for a specific use and this would not fall within the permitted use of those facilities, that's not what they're designed to do, and I suspect there would be

quite a host of problems in trying to do it that way. And I think you want to bring in a unit that's specifically capable of doing exactly what we want done.

Eric.

ERIC ORTH: Two questions. First, one of the problems with the incineration as the method of treatment is that you totally destroy organisms present in the soil, making it rather difficult to use it for anything. I didn't get a good feeling whether LTTD does the same sort of thing or if it's a low enough temperature you're not seeing that total breakdown.

MR. HOWE: We'll pass that off to Dave, you're probably best to respond to that.

MR. SCHARRE: Certainly there will be degradation of other organic compound in the soils. We can't make this selective to, to only the contaminants that we're concerned with and leave the others alone. This does operate at mostly lower temperature than incineration. For these compounds it will be probably in the 4 to 6 hundred degree range, for incineration maybe 1200 degrees or more. I really don't have data on just how far it would go in volatilizing and destroying other desirable organic constituents, it just depends on the particular compounds, the boiling

point, the vaporization states of those compounds.

MR. HOWE: If I could, let me add -- I don't profess to be a real expert in this, but I believe, you know, some of the information Dave presented as far as volumetric considerations, he indicated that there is actually a volumetric reduction using incineration and that's essentially because there are, there is no organic matter left in it, at the end of it you've burned it all off, it's ash. You've completely sterilized that soil. There's nothing organic whatsoever in it at the end of it.

However, in the LTTD, if you noted in the slides he pointed out that the volumetric balance is essentially about equal going in and coming out. You don't really alter the volumetrics much from what you started, and I think that basically represents that you're leaving a lot of those materials there that the incinerator actually destroys and converts to ash. I mean it's, it's a delicate balance. Like Dave said, I'm sure you're destroying quite a bit of organic content in there. It's certainly not going to probably be as productive soil, you know, to grow.

MR. MARQUESS: What we have is clay, we don't have a lot of topsoil, I think of that volume it's pretty small percentage so there's, there's other holes

out there if we, if we treat at the levels that are protective enough we could still use it at, you know, kind of low level fill.

MR. HOWE: That's right, we probably would not be utilizing that material as topsoil anyway. It would probably be placed underneath some, something else that we've considered topsoil and it would be some grade material anyway.

MR. ALLISON: Yes, Eric.

ERIC ORTH: My second question is looking at the large capital costs in association with using some plan, has any thought been given to modularizing it to a certain extent? If there is a treatment that's preferable, is there any way of looking at using it after we're done with it, sending it to another facility?

MR. HOWE: That's exactly what will happen. In fact, these are mobile units that we're talking about. They'll bring them in, they are modular already, they'll come in, load it on. I mean, in fact, one will be here in a month or month and a half, two at most. Anyway, they come in on the backs of 2, 3, 4, 5, whatever 18-wheelers that it takes to bring them in depending on their size, and they just bolt the pieces together and set it up and they go.

And then when they're done, because they're only here for a few months at a time, they have, off they go to the next site, so that's exactly what these are.

ERIC ORTH: There's an initial capital cost and turn around and, say, send it to Badger (Sic) or something?

MR. HOWE: The capital costs we're talking are to bring it in and set up, all that sort -- it's not cost of the thing. We're only renting it for all intents and purposes.

MR. MARQUESS: By the way, that unit is not coming -- it's coming here to do another job.

MR. HOWE: Thanks for the clarification. However, it may be worthy of mentioning, however, at this point, too, as Dave indicated, that additional testing needs to be done on all these different treatment technologies, that, it's not the primary purpose for bringing, bringing it here in the next couple of months but there is an existing project for the so-called former fire training pit.

The selected technology that we went through a similar process on some time ago for the fire training pit and the contaminants that are in that site are to use low temperature thermal desorption, okay, so

we are bringing an LTTD unit to Iowa AAP. It's due to be here during the month of September doing treatment of the soils on the fire training pit site, and because of the timing of this situation and because we need additional data to determine effectiveness, whatever the additional testing Dave was referring to for explosives destruction in an LTTD unit, we're going to use that same unit while it's here at the end of the fire training pit project, we are going to tack on a small test phase, if you will, for -- I don't know, three to five days, something like that, of operation to do a small amount of treatment in a test kind of way of the soils, of the explosives-contaminated soils which are currently stockpiled in the CAMU. So we are going to do some of the additional testing required Dave mentioned earlier in a couple of months, and we will know much better whether or not we have selected a good technology because of actual, real data with real soil from this site with a real unit pretty soon, so --

AL KAM: May I add, too, on these LTTD is they're not universal, LTTD units usually are developed for certain specific constituents. You might have one for volatiles, you may have one for PVC, you have one for larger volumes. What we're really looking at is a smaller one so it will be in a smaller unit. Most of

these are built or designed by subcontracting, so really what you're doing is you're subcontracting it out to someone else who has proven it. So it isn't that the Army has purchased it, it's a unit that's coming from a private contractor who's being subcontracted to do the work based on previous experience of where he has worked, like at the fire training pit, for similar volatiles.

Now, in a situation here is that your differences will be in the amount of feed or the amount you're feeding it per hour, five to ten tons per hour, it depends on the type of soil you have, if you have to break it up, shred it or whatever, so that there's a difference where you have a sandy loam versus a fat clay, a fat, wet clay. There's a difference again if you're dealing with a wet clay, a wet, dense clay, then you have a slurry problem. Then another situation you have is residence time, how long does it have to take to stay in a certain portion of the unit in order to volatilize the contamination that you have and it gets cooled down and goes into a batch pile.

Then after that's done you sample it and if it passes then you normally either, normally in this case it will go into the Trench 6 Soil Repository, otherwise it's found that it did not pass the minimum

requirements it may be basically sent through the unit a second time or there might be some adjustments to residence time, feed time, that sort of thing. So there's a lot of variables in different units, so when you say LTTD we could talk about it generally, but you just don't go out and get a unit because the units normally are very specific to the type of contamination they're dealing with.

MR. ALLISON: Well, let me introduce Al Kam, he's our technical representative from the Corps of Engineers. He's part of our team with the Army and works hand in hand with Kevin.

MR. HOWE: If I could, I'm going to add just one note to what Al just said.

The unit that's coming out here in a couple of months for, for the fire training pit project, as Al said, these are not just, they're not -- I mean, they're not cookie cutter-type units, I mean every one of them is different in their own kind of way. They're designed for a specific function and so forth.

That particular unit that we have coming at the site, as it turns out, because of the particular requirements of our project they are having to fabricate a modification to their unit and it is being done right now. I mean, so this unit is having, well,

the contractor, subcontractor is fabricating a modified section of his, of his LTTD operation to be applied to our particular project, and, of course, he will probably use that in the future on similar-type needs, but, again, these have modular pieces, they can take, they can alter the configuration of the units to some degree to fit the needs of the specific project, and that's what is happening with this particular unit that's coming to IAAP in a couple of months.

MR. MARQUESS: This is a pretty common technology for environmental restoration, but it's not a commonly applied technology to the treatment of explosives, so there are some cost advantages here, but there are also some processing and technical uncertainties associated with it, so I think that's the purpose for the contingency that we have a remedy of bio treatments that's been proven at other facilities, and it's a cost competitive approach and we have facilities and space and logistics here to do it.

So I think, you know, it makes sense to take a look at the low temperature thermal treatment, but it also means, because it's not been done, that we're going to look at it closely in terms of emissions and risks and want you to know. You know, it's an incinerator-like unit, so we're going to look at it in

that sense from a risk standpoint or emissions standpoint and if, in fact, we do the tests and it does look like it's feasible and that's what the remedy would be, they would, we would then come back and do a full-blown risk assessment to look at what the emissions might do and any impacts on the community around here and, and, you know, when we do that we would then present, share those results with the public and let you all have a chance to, you know, to comment again and be comfortable and voice your concern with, with how we would, how we would assess the risk and when we propose to operate the system, and if there were concerns at that point there would still be an option to implement the contingency, which would be bio treatment.

MR. HOWE: If I could, sort of an additional comment to Scott talking about that we would do the risk assessment and on the air emissions and that sort of thing, with the plant being as large as it is it does present some additional advantages in the way of protection of the public. There are some, you know, incineration or incineration-like operations have sort of a lot of bad press frequently associated with them, and in this particular case, you know, first of all, as Scott says, we would do our homework pretty well to

make sure there isn't an unacceptable problem of some sort created by it in the first place; but in addition to that, I would say that we have the advantage at IAAP of being able to put it dead center, almost, of a 6 or a 30 square mile facility, which means that any emissions as minute as they would be are going to have to move, you know, 3, 4, 5 miles off from the center of the plant basically to any receptor off-site, and it really improves the situation as far as potential risk to any off-site receptors if there were any problems of any kind anyway, so --

MR. MARQUESS: It would be a short-term operation, in and out and be done, and so it wouldn't be something that is a long-term concern.

MR. ALLISON: Okay, any other questions? Larry.

LARRY ORR: In regard to the SVOCs and the off-site treatment there, do you have sites in mind that could handle that, and if so, where are they, how would you get the stuff there, and also help me visualize, how big is 200 cubic yards?

AL KAM: 200 cubic square yards, if you put them in roll-offs like you see from the trash company, assuming you had 20 cubic yard roll based on highway load, you would load them halfway to be safe, 10 to 20

cubic -- you've loaded them a little over half full, you're looking at 20 loads.

For locations on -- depending on where you want to send them, there could be a location in Ohio, there's a place, they call it Last Chance, Colorado, Highway 36 right east of Denver, that is certified TSDH that will take everything up to hydrazine, which is very corrosible and cancerous, so there are areas that will take it, it's just a matter of distance and cost.

MR. ALLISON: There's other, there's, I think, a location in Peoria and a location in Missouri.

MR. HOWE: Dave, tell you what, let me answer two ways here. First of all, let me answer your question about visualizing the quantity and then I'm going to go back to Dave. Since he did the research and did the costing on it he can tell you who he looked at, but if you're asking 200 cubic yards, that would be, oh, I'm sorry, yeah, that would be like 5 yards by 5 yards by 8 yards gives you 200 cubic yards, so you can convert that to feet if you will, and you're looking at a 15 foot by 15 foot by 24 foot tall (Indicating) block, so it's, it's not really all that big. You know, very easily would fit into this space behind us in this room, so it's not real large.

MR. ALLISON: Okay, then, Dave, can you fill

us in on some of the locations that you looked at?

MR. SCHARRE: As far as locations, the cost estimates were presented here were based on conversations with commercial waste disposal facilities and transport of this volume would probably be by truck. And the specific locations -- there are various ones that would go out for bids, and then they're selected on that basis. There are a variety of commercial facilities, different locations are open.

MR. ALLISON: Any other questions?

UNIDENTIFIED SPEAKER: In the proposed cleanup process is there any process that we are producing additional carcinogens that the public should be aware of?

MR. ALLISON: Are you speaking towards our current operations?

UNIDENTIFIED SPEAKER: No, the proposed.

MR. HOWE: In the treatment technology proposed, you mean?

UNIDENTIFIED SPEAKER: Yes.

MR. HOWE: Through LTTD are you saying are we going to create compound that inadvertently are going to be a problem? Scott, you're a guy to answer that.

MR. MARQUESS: Well, that's the purpose of the, I mean, for a low temperature thermal you're going

to have air emissions, I mean that would be the primary by-product. The soil that you'd be treating would theoretically, I think we would believe it, that you could use it in your yard if it was, had organic value to it, so the soil would be clean then, it wouldn't have anything new or additional created.

There would be potential for air emissions with the intent that you would be addressing those. In this thermal treatment these would be low temperature to drive the contaminants out of the soil into the gaseous phase and then a secondary afterburner, higher temperature, longer residence time to destroy the organics to combust them to carbon dioxide and water, so the notion is that you produce CO2 and water out the stack of that incinerator.

Thermal treatment unit -- you don't produce solely that, there are other things that may be produced, other products of incomplete combustion, and those are the kinds of things that we'll assess or would assess in risk assessment. You know, there are thermodynamic considerations that would be -- hopefully some stack gas monitoring when we do this pilot test as well to get an idea what is coming out of the stack; and as I said, incineration has kind of been the treatment method of choice by the Army for treatment of

explosive-contaminated soil across the country and so there would be a data base to rely on for past treatment operations to see that, to provide some level of comfort with what is coming out so we can compare it.

But that would be evaluated, as I said, that would be something that we'll come back and share that we've done evaluation, we believe this is the kind of things that would possibly be emitted and these would be the associated kind of risks and, you know, maybe there would be certain areas around the plant at least on prevailing winds that would be more potentially exposed than others, so -- and there may be not receptors there, either.

MR. HOWE: But there's additional controls one can put on it. The initial look would indicate that there may be some unacceptable by-products of combustion, additional things can be added to the, to the treatment technologies, scrubber, air scrubbers, other, other technologies that can help reduce the emissions that might otherwise be created.

MR. MARQUESS: The risk assessment kind, it can drive, well, will drive the design of the unit. There's kind of going to be off-the-shelf design that's kind of standard operating practice, but as you look at

what you're treating and the processing condition, if you see in the risk assessment that you aren't meeting the criteria that you need to meet, then you can do other things to address that, and if you can't, if you can't do that, then we won't do it. We won't.

MR. HOWE: Scott is correct and your question is headed in the right direction. I mean, any kind of a burning operation, if you will, anything with a flame produces -- you know, it produces some additional emissions of the sorts that may not be the desired effect. However, these particular units are designed in such a way, first of all, to create minimal quantities of those in the first place so interior to the system there is not a great deal of it created in the first place.

Although, you know, I don't think anybody here would want to say that none is created, it's not zero, it's just very small, and then there are the additional controls that are provided to eliminate some of the things that are created from actually going out the stack, and then even that, though, you still can't say it's zero going out the stack. But at that point you'd take over with the risk assessment things that Scott is talking about where you have a few molecules that do go out the stack -- what happens to them, where

do they go, how far will they move, what potential receptors would be there, that sort of thing, and is that any particular problem for that amount of material to go out the stack.

LARRY ORR: You'll have continual monitoring throughout the treatment, then?

MR. HOWE: Oh, yes, that's an absolute mandatory requirement of major proportion. I mean, if we weren't already inclined to do so on our own, which we are, EPA would be certain to make sure we were to do it anyway.

MR. MARQUESS: That's why they're modifying their other unit. We have --

AL KAM: Normally what you would see, you would have a stack area, you would have stack monitoring to see what we've got for wind direction, and on the LTTD unit that was chosen, the vendor was solicited based on treating contaminated constituents similar to what we had in our fire training pit, so it wasn't like going out to Joe Blow, saying, Hey, we found out you've got a unit, give us a price.

It's got to be a selected process where you went out to vendors that had a record of doing work and they provided records saying, yes, we treated these constituents that are similar to what you had, and then

the idea was, well, we may have a couple more, can you handle this based on your experience, so that's how the evaluation was made. It wasn't, like, opened up, yeah, we'll take the low bid just because you've got a unit.

MR. MARQUESS: If we get to the point where we're going to do it, it will be we've proven the feasibility of this process, get into the risk assessment process. We have a lot of experience at EPA, we're the ones responsible in our region, we were the ones for doing the Times Beach incinerator. I don't know if you -- But we do have experience with incinerators. We have technical expertise in incinerator operations.

We also have a lot of expertise -- well, we have toxicologists and risk assessors and we're doing -- Region 7 is -- we just in Mead, Nebraska, the former Nebraska Ordnance Plant, Region 7, has just participated in an Army project where they burned about 10,000 yards of explosive-contaminated soil, and then this summer in Saint Louis at the Weldon Spring Ordnance Plant, former Weldon Spring Ordnance Plant going to be another incinerator project that people from our region are going to be involved.

So I think we have a lot of experience in our region with looking at incinerator operations and in

incinerator risk assessments, and when we get to that point here I would bring those people in to help explain, you know, in detail and answer your questions as to what is going on with what we would be doing here at the plant.

MR. HOWE: If I could, too, I might add in addition to his experience base at EPA Region 7, maybe not his personally, but the organization's experience base, I can say much the same thing about the Omaha District for the Corps of Engineers. I've not personally had a great deal of incinerator experience, but many people within our district have. We have done numerous large-scale incineration projects, including a couple that he just mentioned have been done by Omaha District people, and as we get into the details of actually doing such a project, those people who have those, that experience on our staff will be helping pull together the performance specifications and the contract requirements which would then be reviewed by his experts who have similar experience, and so there's a fair amount of experience that would be brought to bear against getting this done right, so --

AL KAM: If I could add, the Corps in 1988 or '89 and again in about 1994, '95, did two large salt incineration burns at Cornhusker Ammunition, Cornhusker

Ammunition Plant at Grand Island in central Nebraska, of which I'm also technical manager there. I also was involved in Rocky Mountain Arsenal liquid incinerator, which would cost at about 15 million dollars to build and about another 60 to 90 mill to operate, and we burned a liquid in it, then the whole total facilities was demolished and razed, and I don't know where the parts were sent -- elsewhere.

I was also involved in about a 10 million dollar LTTD unit up in upper Michigan with similar type solvent type constituent, I guess the unit there came in on several semis. In order to stabilize it they had to actually put down building-type footings, to give you an idea of how large and heavy this unit was.

MR. ALLISON: All right. Any other questions?

MR. HOWE: Aside from process or technology, is everybody understanding the, the more administrative end of this whole thing? This is, as you can tell, some of you are LAP members, you know, those are fairly informal. This is a little bit more formal than that setting. It's an administrative requirement that we go through this step as we are with the feasibility study, the proposed plan and eventual ROD, and all of this is a very formalized-type process.

As Rodger said, you know, we're in the middle of the formal public comment, which is due to close on July 20th, so we're -- well, we're only 11 days from actually closing out the public comments period, and, you know, I just kind of want to make sure everybody is comfortable. If you have comments or questions or anything like that, you know, the process allows for you to raise your questions, concerns, comments, whatever. You can put them in writing, you can -- I believe that the process with our court reporter here means that we will be able to respond to comments and questions in writing that are provided verbally here tonight, but otherwise written comments, questions, otherwise concerns can come in prior to the, or by the 20th of July and we'll, as Rodger said earlier, provide written response to all of these things that become a part of the ROD, itself, so everybody is kind of comfortable with what it is we're doing.

MR. MARQUESS: The idea is, you know, despite what may be the appearance, we really haven't selected anything here as of yet and there are things that we haven't considered or, you know, we should consider or we look at the things we did consider or you just don't like anything, now is the time to say something and, you know, those things will be considered and evaluated

if people have, you know, problems with what we selected or how, the rationale for how we've come to the point where we are.

MR. HOWE: We're getting pretty close to formalizing a final decision, but it is not yet final yet, that's the point. Now is the time to have your say if you want to do so.

LTC HEWITT: The public is probably pretty satisfied. If this was about a shooting range out at West Burlington we might have a different --

MR. ALLISON: All right. Once again I'll open the floor to any other questions, comments.

Okay, hearing done. I thank you very much and good night.

(End of proceedings, 8:18 p.m.)

CERTIFICATE OF REPORTER

STATE OF IOWA

COUNTY OF DES MOINES

I, M. Jane Weingart, a Certified Shorthand Reporter in and for the State of Iowa, hereby certify that I acted as the court reporter for the captioned Public Meeting and that I reported the proceedings in machine shorthand correctly.

I further certify that the foregoing transcript consisting of 51 pages constitutes a true, complete, and correct transcript of my shorthand notes as taken by me on the date indicated.

Dated this 20th day of July, 1998.

M. Jane Weingart C.S.R.

M. Jane Weingart
Certified Shorthand Reporter