US ARMY CORPS OF ENGINEERS
BUFFALO DISTRICT
1776 Niagara Street
BUFFALO, N.Y. 14207-3199

In the Matter of:

NIAGARA FALLS STORAGE SITE

Formerly Utilized Sites Remedial Action Program

Remedial Investigation Report Addendum

Lewiston-Porter, New York

September 28, 2011

Transcript of meeting held in the above-entitled matter at Lewiston Senior Center 4361 Lower River Road, Youngstown, New York 14174 on September 28, 2011 at 6:00 p.m pursuant to notice.

APPEARANCES:

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Buffalo District Commander
(Appears via video)

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P R O C E E D I N G S

ARLEEN KREUSCH: Thank you. I'm just going to go over a few logistics. The restrooms are on this side, and there's two exits in the back and there's an exit where you came in and signed in. And I will now introduce a video from our Buffalo District Commander who couldn't be with us tonight.

LT. COLONEL STEPHEN BALES: (On video) Good evening and welcome. I am Lieutenant Colonel Stephen Bales, Commander of the Buffalo District, United States Army Corps of Engineers. I am sorry that I cannot be here with you tonight.

The Corps follows the Comprehensive Environmental Response Compensation and Liability Act process, also known by the acronym CERCLA, when working on projects for the Formerly Utilized Sites Remedial Action Program. As shown on the screen, the Niagara Falls Storage Site is now in the Feasibility Study phase of this process. The site was divided into three sections or operable units. A separate Feasibility Study, Proposed Plan and Record of Decision will be developed for each operable unit.

The operable units for the Niagara Falls Storage Site are the Interim Waste Containment Structure (IWCS), the

balance of plant and groundwater. The team is currently working on the Feasibility Study for the Interim Waste Containment Structure (IWCS) operable unit. The objective of this study is to identify and evaluate potential remedial alternatives for all radioactive and chemical contamination within the Interim Waste Containment Structure (IWCS). The Corps will issue five technical memoranda that will be integrated into the Feasibility Study report. We are taking this approach to provide multiple opportunities for public input during development of the report.

In order to further enhance our communications, the Corps hired Mr. Douglas Sarno to serve as liaison between the community and the Corps members during the development of the technical memorandum and the Feasibility Study report. A workshop will be scheduled for each technical memorandum to further promote stakeholder involvement in the Feasibility Study process.

These workshops will include a brief presentation on the status of the Feasibility Study and provide a forum for the Corps to address your questions. We are committed to maintaining an ongoing process of open and constructive dialog with you. The Corps will respond to community concerns on these documents in a timely and professional manner.

Tonight’s workshop is about the first technical

memorandum in this series. Let me emphasize. We are committed to working with the community throughout the development of this Feasibility Study.

I will now turn this meeting over to the program manager for the Niagara Falls Storage Site and Lake Ontario Ordnance Works site, John Busse. Thank you for attending tonight's meeting.

JOHN BUSSE: No applause.

(Laughter)

JOHN BUSSE: Anyway, thanks for coming out as we initiate the Feasibility Study for the IWCS. We're grateful that you're here. We hope we get some real meaningful dialog and input going tonight. Before we kick off the presentation, I'd just like to go around the room and introduce the Corps team and we seem to have quite a few personnel.

We have David Frathingham, our Environmental Engineering Team leader. Bill Frederick, he's the Environmental Project Management team leader. Jane Staten, the Project Manager for Niagara Falls Storage Site. We have Carol Reinbird, our Contracting Officer. Jeff Hall, Environmental Health Team leader. Roger Birch, our Strategic Planner. Andrew Kornacki, our Public Affairs Officer. I saw William Kovaleski, Chief of Special Projects. I saw Ron Church. He's our FUSRAP Account Manager for the Great Lakes

and Ohio River Division. We have some of our contractors, too, Laura Obloy, Ellen Rager, Steve Connor and I can't leave our Karen Keil, our Risk Assessor.

Neil Miller the Health Physicist. We got a lot of people here. But I'd also like to introduce Julie Reitinger and George Butterworth. They're technical leads from SAIC and they'll lead the discussion tonight along with Doug Sarno. I'm going to turn it over to Doug and have him get everything underway.

DOUG SARNO: Thanks, John. I'm going to go ahead and use this one, because I haven't been known to be able to sit still. I am Doug Sarno and I'm the technical facilitator that the Corps hired back in May to kind of help design and lead the public through this process of the Feasibility Study.

So tonight we're going to talk a bit about what that process is going to look like. We're going to talk about the first major milestone and report on that process and to kind of move forward from there. The meeting is going to be organized into a couple of pieces here. I'm going to talk a little bit about the CERCLA process that the Commander introduced just a second ago.

And then we're going to talk about the two pieces that are in this technical memorandum that is the subject of

tonight's meeting. One is the lessons learned from the Fernald cleanup and how those might be applied to the NFSS and in particular the Interim Waste Containment Structure (IWCS). And then we're going to talk about the considerations for off-site disposal from the IWCS, where it might go and the locations and the considerations in looking for off-site disposal. Now, off-site disposal is just one possible piece of a solution.

It's not, you know, no decisions have been made to send anything off site, or to send everything off site. Those are all considerations that are coming down the pike. After each of these conversations or presentations, Fernald lessons learned and then after the off site disposal discussion, we're going to have about 10 minutes for questions and I want to keep those questions focused to, was there anything there that didn't make sense, that you didn't understand, that you'd like more detail on, that relate directly to that presentation or that topic, because later in the evening, sort of in the last hour, we're going to transition from this presentation to actual discussion, and this is where we really want to hear from you and get into some good dialog around a number of questions which I'll introduce in a little bit. But we really want to kind of get your feedback on the information that was presented and the consideration of that information as we move

forward in this process. So we'll have about 45 minutes or so in those small group discussions. That's why you're sitting at tables. At that time we'll have the people who are facing us from the front just sort of flip their chairs. We might consolidate a few tables depending on how many folks we have in the room at that time. We do expect a few more stakeholders to trickle in. And then each table will have a facilitator and a note taker to help move that process along.

So with that I want to begin the presentation. And there will be three presenters tonight and we're talking about three different topics. So my topic is to kind of give you an overview of the process, where we are and where we're going and how public involvement is going to fit into that, and also my role as technical facilitator and what you can expect from me.

Remember, we're talking about the Interim Waste Containment Structure (IWCS) operable unit. Operable units are just the name for it. The segments that this site has been split into, it's been split into three segments. We can look at the next slide.

As the Commander said, the IWCS OU is, what are we going to do with all the materials that are located inside that structure, and then the balance of plan is looking at the soils and any other materials that are currently located

on the NFSS property but outside that structure and then the third being the groundwater. But tonight and for the foreseeable future we're focusing on the IWCS operable unit. That's the Feasibility Study that we're in the middle of at this moment.

Another thing that the Commander said was that we are following the CERCLA process here under the FUSRAP (Formerly Utilized Sites Remedial Action Program) for the Niagara Falls Storage Site. CERCLA is the main law. It was passed in 1980 to address America's abandoned hazardous waste sites. And it's also sometimes known as Superfund because of the big pot of money, they thought it was big at the time, that was set aside for that response. This is the CERCLA process. Federal facilities such as this are actually not amenable to using the Superfund. They're government funded. And -- next slide.

And this site is a site that has not been put on the National Priorities List (NPL) and I'm just letting you know that because we're going to be talking about Fernald and the Fernald site was a large Department of Energy cleanup that was placed on the National Priorities List (NPL), and this list is the list that's designed under CERCLA to identify the highest priority sites across the country and the highest priority sites in each state.

And when this site was ranked, the Niagara Falls Storage Site was ranked, all the waste was already in the Interim Waste Containment Structure (IWCS) so it wasn't seen as an imminent or immediate threat. So at non-NPL sites like the NFSS the Federal agency that's in charge of the cleanup is also the lead agency under CERCLA. So the Corps has overall responsibility for the cleanup as well as the regulatory process here at the site. At NPL sites like Fernald was, the US Environmental Protection Agency has that lead agency status regardless of who is the owner or operator of that facility. So at Fernald that was a Department of Energy facility site but the EPA had oversight. Here it's also actually a Department of Energy site although it's been, control has been given over to the Corps and the Corps is the lead agency and has oversight.

You saw a variation of this in the Commander's presentation and you've probably seen variations of this in different Corps reports. It really is just the CERCLA process for steps in the remedial decision making process. We have already gone through all of the site kind of inspection and investigation steps here for the IWCS and now we are in the Feasibility Study process. And as was pointed out, what the Feasibility Study is there to do is identify possible alternatives for cleanup. Then a proposed alternative is

selected based on the analysis in the Feasibility Study and then the Corps will put that out for public comment in something called the Proposed Plan. That Proposed Plan will have a preferred alternative in it. We'll get comment from all the stakeholders. The Corps will consider that comment, make a final decision and codify that decision in a Record of Decision. Any remedial actions that are suggested in that Record of Decision then have to go through a detailed remedial design and ultimately a remedial action program to implement those activities.

Once all three operable units go through that process, the IWCS, the balance of plant and groundwater, then the site will be closed out and put into a long term maintenance and monitoring stage, and at that point transferred back to the Department of Energy, and the Department of Energy has a large long term stewardship program under which it manages all of its sites that are being cleaned up around the country but that still have residual materials there that need to be managed.

CERCLA defines the Feasibility Study very specifically as a study to develop and evaluate remedial alternatives. As I said, we're done with the remedial investigation but we'll be using all of that information gathered in the RI to do the evaluation of the various

alternatives developed in the FS (Feasibility Study). It doesn't mean that no more information is developed or looked at. There is lot of new information that happens in the FS (Feasibility Study) as well but the vast majority of site investigation happens in the RI. Later on you'll find that even more investigation sometimes has to happen during the remedial design phase so that you clarify what's there. The idea of the RI and the FS (Feasibility Study) is that we gather enough information and do enough analysis that we feel confident we can select the right remedy for the site.

So the first thing that's going to happen is define objectives and then develop remedial action alternatives and then do a detailed analysis of those alternatives for decision making. The FS (Feasibility Study) stops short of actually making a decision or picking which one is the preferred alternative. That happens in the subsequent steps, the Proposed Plan and Record of Decision.

The Feasibility Study that we haven't identified of any specific alternatives or detailed alternatives yet, the work plan for the Feasibility Study identifies the range of alternatives and the types of alternatives that are going to be looked at and studied under the Feasibility Study and it's really the full range of alternatives for the materials in the IWCS. From doing nothing, which is called the no action

alternative, and I don't think anyone expects that we're going to do nothing, but a no action alternative is required by CERCLA to be investigated and evaluated so that you have something to compare to. What happens if you actually take no action, what are the risks and costs associated with doing that? All the way to removing all of the material from the IWCS and sending it all off site somewhere else. So you've removed virtually all of that risk and all of that volume. And then there's obviously alternatives in between, alternatives that take some of the materials out and send it off site and leaving the rest here on site, either in the IWCS or in a new containment facility that would be built on site for any materials that are left back in site, and the question about developing those alternatives really becomes an equation of how much goes off site, how much stays on site, and how do the materials that stay on site stay contained and organized for long term safety.

Treatment could be applied to any of these alternatives, so some materials might need to be treated in order to safely be shipped off site. Other treatment alternatives may be looked at in terms of what's left on site. Right now there's no sense of what those treatment alternatives actually could be. Developing those treatment options and evaluating what treatment options are available

for this site are part of the process of the Feasibility Study. Next slide.

No matter what, the alternatives that are developed, they're all going to be evaluated against the same criteria and they're all going to have to meet certain criteria in order to be considered or selected for the site here at the Niagara Falls Storage Site. The criteria are not arbitrary. They come again from CERCLA. These are the same criteria that all CERCLA projects use to evaluate the alternatives under consideration and they are basically in three categories and then there's a couple criteria under each of those categories.

The first category is threshold criteria. There are two threshold criteria and any alternative that's considered, and certainly any alternative that's selected, must meet these threshold criteria. There is no choice. The Corps has to demonstrate how these threshold criteria are met by the alternative it puts forward. The first of which is overall protection of human health and the environment. That is primary and paramount to any selected remedy and to this entire operation. The second is compliance with something called ARARS, and ARARS is an acronym for Applicable or Relevant and Appropriate Requirements. And that's the set of rules and regulations and laws that apply to this cleanup. And so right now that process is underway to kind of evaluate

what are, what is that set of laws and regulations that have to be considered, and you'll see that analysis of what constitutes the ARARS here and those will drive again the alternatives and the things that they have to meet in terms of rules and regulations, and there's usually a pretty wide spectrum of those that affect everything from health to transportation and other kinds of things, depending on the alternative selected.

Once you recognize that you have alternatives that meet the threshold criteria, then each alternative is evaluated according to these five balancing criteria and these are basically technical criteria. They're going to walk through these technical criteria in detail and see how each alternative performs against these criteria. The first is long term effectiveness and permanence, how effective is this over time and/or permanent is it over time. Reduction of toxicity, mobility or volume of contaminated materials through treatment technologies. Short term effectiveness, how quickly and how well does it address the issue. Implementability, how difficult is it to make it happen. And then obviously cost is another factor. You know, these are balanced against each other, no one is necessarily seen as paramount or having a detail over others.

And finally, once a Proposed Plan is developed based

on these seven criteria, it goes out for comment. And it will get comment from agencies. In this case the Corps of Engineers is the decision making agency but it's going to get input from the State and from the US Environmental Protection Agency and it's going to look for agency acceptance and community acceptance of that preferred alternative as modifying criteria as understanding, how well does this meet the needs of those stakeholders. And that will be considered before a final remedy is selected. Next.

So as was pointed out, the Corps is going to release five technical memorandum during the course of the Feasibility Study and the reason for this is that this is a very complex process, it's a fairly long term process, and the Feasibility Study report itself is probably not going to come out until some time in 2013. Over the next year though we'll be working on and releasing five technical memorandum, and this is an opportunity to bring stakeholders into the FS (Feasibility Study) process, to let you see what's going on, to let you weigh in on key choices and issues that are part of the Feasibility Study process, so that there's an opportunity for conversation and dialog and input prior to waiting for that final FS (Feasibility Study) report which has that range of alternatives written in it. So the first one that's available is this one now and it's the Fernald lessons learned and the

off site waste disposal options as we discussed a minute ago.

The next one that's coming out is radon assessment and probably the next two are going to come out in similar time frame, the radon assessment and health effects of hypothetical exposure to the contaminants and those are going to look at the risks associated with the materials in the IWCS. What kinds of exposures can we expect and what kinds of conditions and what kinds of impacts would those have for workers, for residents, for anyone in the vicinity, and what are the kinds of things you need to think about both for implementing and then long term management of these kinds of things.

So then after those two are done, the next technical memorandum is the remedial action objectives and ARARS and this is the one that's going to lay out, here are the objectives that all of our alternatives must meet. This is the public health and environmental protection objectives that we're going to lay out here for any alternatives for the IWCS as well as listing all of those ARARS that we talked about.

And then the last and final of the tech memos is remedial alternative technology, development and screening. And here's where they'll look at the full range of technologies that are available to the waste types and waste

volumes that are there in the IWCS. And then they'll screen all those technologies. They'll take a look, here's everything that's available, and then they'll screen them against the actual conditions and identify the ones that hold the most promise or the most interest in being applied in some sort of alternative.

Ultimately all of this information will then be used to develop that FS (Feasibility Study) report which will outline detailed alternatives across that full range of options that we talked about and then screen all those alternatives against those criteria that we talked about. And so the FS (Feasibility Study) report, when it comes out in 2013, is going to say, here's the set of alternatives and here's how each one stacks up against the criteria.

So this is the process that the FS (Feasibility Study) will go through and there's eight key steps and the technical memorandum kind of fit into this in different places. At the end of the day, once we've looked at all the issues and all the activities involved in the technical memorandum we have actually seen almost everything that ends up in the remedial, or the Feasibility Study report which comes out at the end of this process.

The first few steps are setting the criteria, the objectives for cleanup at this site, the remedial action

objectives that set overall requirements that every alternative must fulfill with regard to public health, environmental protection and other kinds of things. ARARS list all those rules and regulations that every alternative must meet in order to be implementable. The next, the key technical memorandum will come in right here, which then compiles the RAOs and the ARARS and talks about all of those. So there will be a document for you to look at and understand at that point in the process about what's going on in terms of the objectives and the rules and regulations that have to be followed.

After that we'll identify some general response actions. These are not detailed alternatives but they give a more robust look at, here's the kinds of approaches that make sense and that are available to us to meet those objectives and so those will be laid out and then applied against the set of volumes in the IWCS to say, which one of these hold promise, which one of these make sense, and these will form the framework or platform later for developing more detailed alternatives. With that sense of direction you then get to look at technologies that are available within those approaches and for those waste streams that say, what kinds of technologies might we apply, whether those be treatment technologies or other kinds of technologies to deal with these

wastes, to make them less mobile or less hazardous or even reduce the volume. And those will be screened and looked at in terms of which ones make sense here, which ones don't.

So then we'll pass that screening and we'll come out and we'll say, okay, so now we understand kind of the set up technologies and the general approaches that make sense and those will be combined to develop a set of very detailed alternatives that say, here's exactly how we could go about addressing all of the materials in that IWCS. So that set of alternatives will be developed and then screened, and ultimately that's what will be put into the Feasibility Study report which is the result of that screening and analysis of the alternatives that are available. And that's going to -- this is going to take pretty much through the next year and a half or so.

The five technical memorandum will be going between now and probably summer of 2012. And so that's a really busy period I think for public input and public involvement. Next slide.

And that's one of the things that we're going to encourage everyone to be paying to attention to over the course of the next year both here at these public workshops and in several other meetings that will take place. So for each of the five technical memorandum like the one we're dealing with

tonight, there will be a fact sheet that says, summary of, this is what this technical memorandum is all about, this is what's in it, this is what it says, these are the conclusions it reaches, and those are going to be made early on. They'll come out commensurate with the report itself. Obviously each technical memorandum will available for your review as well. But they're going to be pretty dense reports. They're only going to get more complex and more complicated as we move forward.

So we'll have some fact sheets available to give an overview of that. They'll be discussed at the monthly meetings of the Community Action Council (CAC) which is kind of a redo of a longstanding group here in the community that's going to look at all these issues associated with this Feasibility Study and they're going to meet on a monthly basis. There's a fact sheet about the Community Action Council on the table and if you didn't get one please make sure you get one. Their next meeting is going to be next Thursday on October 6th and we'll make more of an announcement about that at the end of tonight.

But one of the things that they're going to be doing is looking at all the results of this meeting tonight, this workshop tonight, everything that you said, and using that information to help develop community based input on this

technical memorandum. And they'll be doing that for each of the five technical memorandum, they'll be meeting beforehand to evaluate and look at it, and being present -- there's a number of members of that group here tonight, being present at these meetings and then meeting afterward to compile and develop input and ideas back to the Corps.

For each of those technical memorandum there will be a workshop like tonight around that technical memorandum and then there will also be just a basic public input period. And so public input on this technical memorandum will be accepted through October 28th and I'll give an email address for that input in a little bit that you can just provide comments directly or you can come to these workshops and/or you can come to the CAC meetings. All of those are places you could come and talk about the technical memorandum, hear about the technical memorandum and provide input to them.

The other piece of the puzzle here is my services and what I'm doing as the technical facilitator. So I was hired to serve as a point of contact and a liaison between the Corps and the community to sort of help drive the process forward, design ways of bringing people together and helping make the information understandable and accessible to the community. I'm supporting much of the Corps community outreach and I'll be at all the meetings. I'll be attending,

I'll be facilitating, working directly with the CAC group at their monthly meetings to sort of help organize those meetings, bring -- make sure we bring the right kind of information to those meetings and have the right kind of dialog around that information.

Now, there's also a one page sheet on the scope of work for my services that says exactly what's in my contract from the Corps that says, this is what Doug should be doing, and please feel free to contact me and ask me to do any of those things, if I'm not already helping you in some way through the CAC or whatnot. We want to make sure that nobody misses the opportunity to understand what's going on here or get involved because they didn't have access. And I'm one of the ways you can get access to this process. So please feel free to call me or email me and I will absolutely help you.

With that, we're going to take some questions after the next presentation so if you have any questions about sort of the process or my role we'll take those as well after this presentation. So this presentation is on the first piece of the two big chunks of that technical memorandum which is Fernald lessons learned, what did we learn from the Fernald process, and I'm going to ask Julie to come on up and give you that, and then I'll be back and we'll have about ten minutes for questions about the Fernald lessons learned and the

process. Do you want this?

JULIE REITINGER: I think I'll try this. Thank you, Doug. Good evening. I think we'll get started tonight with just giving you a brief overview of the site's history and so in 1942 the US Government acquired approximately 7500 acres in this region for the development of a TNT production plant which they called the Lake Ontario Ordnance Works, and that's what we see in the brown tan outline here. The purpose of the process was to develop a TNT production plant and that production of TNT only lasted approximately one year. At that time the plant was shut down and then in 1944 the Manhattan Engineer District requested permission to use a portion of that site for the storage of radioactive residues. And that portion of the site is approximately 191 acres and that's what you see in the blue outline here on the slide.

This area became known as the Niagara Falls Storage Site. Periodically between 1944 and 1954 the Manhattan Engineer District as well as other successor agencies periodically shipped radioactive residues and other waste to the Niagara Falls Storage Site. These residues were primarily a result of the processing of uranium ore into uranium metal for the production of atomic weapons. Of these residues that are stored on site the one that contains the highest level of radioactivity is called the K-65 residues. So we're going

to talk quite a bit about the K-65 residues tonight. Next slide.

During the 1980s the US Department of Energy began remediating various areas of the Ordnance Works and what they did was they consolidated the various residues and the waste material, other things such as contaminated building debris, into the IWCS for the purposes of containment. And so the IWCS here is in the dark blue area on the Niagara Falls site. The IWCS was designed to prevent or reduce radiation emissions. It was designed for prevention or infiltration of precipitation as well as contaminant migration to the groundwater.

So the purpose of the technical memorandum that we're going to talk about tonight is really twofold, and we're going to sort of give it the name of the Fernald Lessons Learned technical memorandum just as an abbreviation, but again as Doug mentioned, it's to support the Feasibility, so really we're going to look at two main areas. We're going to look at the Fernald site, which the Fernald site was a successful Remediation Project located in Ohio and basically they were able to successfully remove the K-65 residues that they had on site, treat it, and then ship it off site for disposal. So we're going to look at that Fernald site just to gather information. Again, part of the FS (Feasibility Study) is

to really look at a variety of technologies that might be applicable at the Niagara Falls site. So we're going to look at what Fernald did with their K-65 residues to get a better idea.

The second part of that which George is going to talk about is really what are the options for off site disposal of these wastes that are contained in the IWCS.

So in doing so we're really going to try to answer four primary questions that we see up here, and those questions are, really how do Niagara Falls and Fernald compare? So what is it about Fernald that we possibly could use at Niagara Falls? Also most importantly is, how did they do the job of removing the K-65 residues? What did we learn from Fernald besides just the removal of the K-65, and lastly, where could the IWCS wastes, the wastes that are contained currently in the IWCS be disposed of off site?

Fernald is a good example of a successful Remediation Project, so just in order to give you a little bit of background information about the Fernald site, we're going to take a look at a couple of main issues. The Fernald site was located approximately 18 miles north of Cincinnati, Ohio. It was really called the Feed Materials Production Center and it was a full scale production facility where they took uranium ore and ran it through the production process

and produced uranium metal. That plant was in operation from 1951 to 1989. In 1989 the plant production ceased and at that time the EPA placed Fernald on the National Priority List because of the nature and extent of contamination at the site there. So in order to see what we can really do at the Niagara Falls site here, we're going to do a little bit more of a comparison between the two sites. Let's see. Excuse me. So first off, to give you sort of a scale of the remediation that was done at Fernald, the Fernald site was about five times the size of Niagara Falls. So Fernald was approximately a thousand acres whereas the Niagara Falls site is 191 acres. In addition, what I think was sort of interesting is that the K-65 that was stored at Fernald and the ones that are inside the IWCS both originated from the Mallinckrodt Chemical Works that was in St. Louis, Missouri, and because of that reason they're similar in form, chemistry and radioactivity to the ones that are at Fernald. Fernald stored these K-65 residues in storage silos, above ground storage silos located at the site, and they called those Silos 1 and 2, so we'll be referring at times tonight to Silos 1 and 2 Remediation Project and that's what we mean by the handling and the treatment of the K-65 residues.

The silos at Fernald stored approximately 8,900 cubic yards of the K-65 residues. In comparison the Niagara

Falls site has approximately 4,030 cubic yards. So Fernald had about 9,000 cubic yards -- I'm sorry, Fernald had about 9,000 cubic yards and the Niagara Falls Storage Site has about 4,000. Just to give you sort of a scale of what 4,000 cubic yards is, it's approximately the size of what might fill an Olympic size swimming pool. That's the type of volume of waste that we're talking about in the K-65's.

The remediation of Fernald resulted in 123-acre on-site disposal facility which is shown in the dark blue here, and that's in comparison to the 10 acre IWCS that's located at the Niagara Falls site.

This is a picture of Fernald and it's sort of a picture of approximately that 1989 time zone, so just when they stopped production and before they started doing the remediation there, and so some of the remedial activities at Fernald not only included the removal of the K-65 residues, the treatment and the off site disposal, which they shipped those residues from Fernald to the Waste Control Specialist in Texas, but also the cost of those K-65 Remediation Project was approximately $490 million and it took 12 years to complete, so that was from the planning phase all the way to the last shipment off site.

The remediation at Fernald also included, as you can see, it's a full scale production facility, so it also included the dismantlement of over 300 buildings, the

remediation of the waste pits that you could see up in the upper left hand corner there as well as removing over 100,000 drums of waste that were located throughout the site, and also the other problem that they had was that because of the contamination at Fernald it contaminated the groundwater aquifer that was located beneath the site, and that was called the Great Miami Aquifer and that was a primary source of drinking water for that region.

This is what Fernald looks like today so this was taken in approximately 2008 and so you can see that on the site there they have the on site disposal facility which is in the upper corner here. And so approximately 99% of the total Fernald waste products, the building debris, the contaminated soil on site, the waste pit materials, went into the on site disposal facility. They considered this to be their low level waste is what they put into that facility. DOE has committed to long term monitoring and maintenance of that on site disposal facility and in 2007 they also determined that the rest of the portion of the site would be used as a recreational and they called that the Fernald Nature Preserve. The total cost for remediation of the Fernald site was approximately $4.4 billion.

So what we're going to do right now is to basically look at the first question that we sort of put together. It's really comparing the Niagara Falls site to Fernald so that

we can draw some comparisons about what we might be able to use as we go through this FS (Feasibility Study) process.

The first thing, as I mentioned to you, both of the sites, both Fernald and Niagara Falls site, were -- did store K-65 residues on site. So that's the similarity that's most important right now for us as we look at some of the options for removal of waste. The other thing is the risk that is associated with the K-65 materials, the radiological risk is primarily associated with the Radium-226 and when Radium-226 decays it produces radon gas. And we're going to talk a little bit about how to handle radon gas or how Fernald handled radon gas as well, too, through the remediation process. One thing that's a notable difference is that the Niagara Falls only stored the K-65 residues and other residues whereas the Fernald site also manufactured uranium products as well.

Unlike Fernald, the Niagara Falls is not located over a primary source of drinking water, and so at Fernald because this Great Miami Aquifer which was contaminated for probably about 225 acres, it was something that had to be restored. And so that was one of the reasons why it got placed on the NPL, because this was considered a key environmental asset.

Additionally, the land use that was adjacent to Fernald was primarily residential or resident farmers, whereas the Niagara Falls site, here the primary immediately adjacent

land use is industrial. Fernald was placed on the National Priority List because of the fact that the silos where the K-65s were stored were really structurally unsound, because of the presence of the waste pits that were on site, because of the presence of open drums throughout the area, and also because of the contamination of the groundwater. In comparison, the Niagara Falls site was not put on the NPL list because at the time that the evaluation was done, all of those wastes were contained within the IWCS and so there was a determination at that time that there was no immediate threat to human health or the environment.

So although Niagara Falls and Fernald do have some common remediation issues, we also understand that there are some things that can't be directly carried over, and so that's really part of the purpose of the technical memorandum is to really look at all of the different remediation activities that were done at Fernald and try to figure out what might be able to be implemented and then looked at a little bit more when we get to that technology screening that Doug was talking about as part of the FS (Feasibility Study).

So one of the key components at Fernald was really how the K-65s were handled, and so we're going to talk in a little bit of detail about that. What's important to note about this is that just the removal of those K-65 residues required quite a large process. There was several buildings

built and several processes that had to be implemented and created in order to handle those residues.

This is a picture of the Fernald silos and we wanted to use this one slide which actually shows silo 3 in the foreground here in the picture, so you could just get an idea of what we mean by a concrete silo or where those K-65 residues were stored. And silo 3 did not actually have K-65s in it, but they had cold metal oxides and we do not have cold metal oxides at the Niagara Falls site. It's a lower level activity waste, and so we're not going to really talk about that further here. But what we are interested in is the Fernald silos that are behind there. They're called Silos 1 and 2 and that's where the K-65s are stored. And what you can see from that is that -- what you can see from that picture there is, those silos were surrounded by earthen berms and primarily the purpose of those earthen berms was not only to shore up the walls of the concrete structures but they also prevented some radon emissions or some exposure to the public and to the workers in that area as well, too. The containerization, the placement of those K-65s in those silos as well prevented some release of –- or prevented the release of radon gas to the environment.

Silos 1 and 2 only contained the K-65 residues and so at the time that it came for them to remove those wastes from the silos, what they basically did was to cut a hole in

the top of the silos, and using a method that they called hydraulic mining, they basically introduced high pressure water into that silo and created a slurry with those K-65s in the water, and that slurry was pumped out to the remediation facility. So we'd like to just talk a little bit about what the removal of the K-65 or the other waste might be because in comparison to what's at the Fernald site it's a little bit different. And so basically this shows a picture on the left here of the IWCS, an aerial view of that, and the K-65 residues are actually located in three buildings. I'm sorry, the residues that are found at the IWCS are located in three buildings.

The K-65 residues are located in Building 411. So we've got Building 411, 413 and 414 and those are the ones that are shown in yellow. And those buildings were actually former buildings associated with the Ordnance Works. And so those buildings were used for the water treatment plant at the Ordnance Works and so actually they're the basements and so this picture on the right here shows the basement of 411 and so the K-65s were put into these basements primarily because they added some containerization to that, the K-65s as well, too.

The other thing I wanted to mention to you is that George is going to talk a little bit more about the R-10 residues, and the R-10 residues are much lower radioactivity

than the K-65s and the other residues that we're talking about, so they were placed actually north of Building 411.

Now, we're going to take another look at how these wastes are placed in the IWCS so I'm going to take a cross section view from that southern portion of Building 411. So if you were going to take a cut through the IWCS and look north, what you might see is this Building 411 here, and we have Building 414 there too shown, and Building 411 was actually divided up into these bays, so bays A through D, and the K-65s are represented in purple on this figure, and so as you can see the K-65s are located in two different areas of Building 411, in the basements of Building 411.

The other waste that we're going to talk about tonight, lower radioactivity but still considered higher activity residues along with the K-65s, there are things like, names like L-30 and L-50 and those are represented in the green so those are also placed or containerized inside Building 411. And then the light green is actually contaminated soil that was placed on top of those building structures and the purpose of that was really to sort of provide some additional containerization to prevent radon emission.

One of the things that's not represented well in this image is the fact that the light green actually not only represents contaminated soil but it also represents some contaminated building debris. So things like the demolition

of the other structures that were within the footprint, the other Ordnance Works facilities that were used on site there, the silo that the K-65 was stored in originally before it was transferred to Building 411, piping, other contaminated building rubble are also found in this southern portion of the IWCS. And so some debris or concrete is actually also placed in those bays at Building 411.

One other thing that was done basically is that the Corps built the –or, I'm sorry, the Department of Energy also built these cutoff walls or these dikes, right here, and the purpose of that was these clay dikes also helped to contain. So those go in, all the way around the perimeter of the waste and they help contain that waste as well. And then contaminated soil was put on top and then finally there was a clay compacted layer that provided it additional protection for radon emission.

So the key difference is that although we can look at the removal methods for what happened at Fernald we need to recognize as well that there are some significant differences to the placement of the waste in the IWCS as compared to the removals that we can do, as compared to the removal that was done at Fernald.

So at Fernald they built this large remediation facility and the primary purpose was to take that slurried, the slurry of the K-65 residues that came from the silos, and

so the silos are represented up in the left hand corner there, and they pumped it over to the treatment facility and in that treatment facility they basically did chemical stabilization with that, and there was a treatment method that we'll talk a little bit more on in just a couple minutes. Then they pumped those treated wastes into containers and then they allowed that waste to solidify and then they placed them on trailers and they were shipped off site at that point.

So this figure depicts the process that was used at Fernald and this remediation facility was built so that it had some safety measures incorporated into it. So the first thing that was done was that they had air containment so that it would prevent the release of radon, because again, radon gas is one of the primary things that we're concerned about when we handle the K-65 residues. It also did radon abatement methods such as shielding workers from those tanks and inline sampling, those kinds of things. So if we were to remove those K-65s from the IWCS a remediation facility of this type would need to be built.

One of the key factors that we need to talk about is the radon control system. And I think this is sort of a really good picture of the facility, the remediation facility that was built at Fernald, and what you can see in the background of that figure on the left here is Silos 1 and 2, and so you can see them a little bit better, that they're

enclosed in these earthen berms. In the foreground here of that same picture is the radon control facility and this is just a portion of that remediation facility too.

So the radon control system was really designed to capture radon gas during the removal of the K-65s from the silos but also throughout the remediation facility. It was designed to provide continuous air management and it was provided to require less PPE so that the workers could be safe but they could also use less personal protective equipment (PPE). So instead of them having to work with the respirators on in full suits, it allowed them to be more efficient while being safe while they were handling these residues. And it also eliminated off site releases of radon gas because all of the air was contained and treated.

So when we start considering treatments and alternatives for any kind of removal of wastes at the IWCS we'll also need to incorporate a radon control system.

The manner in which the K-65 residues were treated and transported can also be evaluated for use at the Niagara Falls site. Treatment consisted of a process called chemical stabilization and basically what happened is once those K-65 materials were slurried into the remediation facility they were mixed with cement and flyash and then what happened was that they were slurried over to the containers and these are the containers that are shown here. They were slurried over

to those containers where they were allowed to create a solid form and that was called stabilization of that waste. And so at Fernald they had to create these specially designed containers. They were approximately 6 feet wide by 6 feet tall.

They were approximately a half inch thick steel and they weighed 20,000 lbs. each. So these containers, they were placed on the specially designed flatbed trailer for shipment to Texas, two containers to a flatbed trailer. And so Fernald shipped approximately 3,770 containers and that took approximately one year to ship all those containers off site. And so that works out to approximately seven trucks per day that were shipped. The truck transportation to the facility in Texas included one minor traffic incident and more importantly, what George is going to talk about, is that all those containers, all that waste, was accepted for disposal at the off site facility. Therefore, a similar method of treating and shipping and transporting those wastes to any off site facility if that decision is made, will also be needed for the Niagara Falls Storage Site.

In addition to the basic things that were involved in removing the K-65 residues, we also learned a couple other things from Fernald. One of the important lessons, or one of the important things that Doug was emphasizing is that

there's this process of screening the technologies and screening the alternatives, and so you have to look at whether we would containerize those residues, whether we would treat those wastes, whether we would ship them off site, whether we would keep them on site, and those types of technologies, one of the most important ones that you need to look at is how we're going to treat those wastes. So treatment is a component of any remedial action that we'll have to do for the K-65s. And at Fernald they also looked at treatment. And early on when they originally signed the Record of Decision they chose an innovative treatment process called vitrification and what vitrification is, it's a method by which the waste materials are heated to a high temperature, about 3000 degrees Fahrenheit, and they form this molten lava and then upon cooling they create this glasslike waste form. And the reason why the DOE chose this was that even though it was an innovative technology at that time, this was back in the 80s, they found that the tests that were being run as they were looking at those treatment processes were more promising in terms of the stability of that glasslike waste form, so that's why they initially chose it.

These studies required that the DOE design and build a pilot treatment plant, and so that's the facility that you see on the left here, and that treatment facility had to be built, or that pilot plant had to be built because nobody at

the time had ever done this full scale vitrification process. So they went through many activities and many testings of the pilot process so that they could develop a method by which they could actually treat the K-65 materials, and so this pilot plant actually did not even use K-65 materials. They used what they called a non-radioactive surrogate and they took it through these tests. And so basically what happened was, they had many technical and operational difficulties moving through that capability of taking a non-surrogate waste form and creating a molten glass out of it. And so basically they had one incident where they were in the final testing and the equipment basically, the melter failed. It released the surrogate material, and so at that time the DOE decided that they could no longer pursue this innovative technology called vitrification and so what they ended up doing was having to switch their treatment option to chemical stabilization and the result of that unfortunately was the demolition of this $60 million vitrification plant.

So what we learned basically is that as a part of that FS (Feasibility Study) process we need to look at innovative technologies, especially those that are more promising in terms of treatment, but we need to balance that carefully against those treatment technologies that we know already work. And that will be process. We'll look at all technologies as part of the FS (Feasibility Study) but then

there will be that balance between effectiveness, implementability and of course cost.

One of the other lessons that we learned from Fernald was that, really the importance of applying safety at all levels of the planning. So in all management decisions safety was incorporated. In all engineering designs the safety was incorporated. And even in the daily work practices. So practices such as using remote handling equipment in that remediation facility reduced worker exposures. We also did the radon abatement method such as shielding and inline sampling so the workers didn't need to be exposed, and also the radon control prevented those off site releases, any off site releases so that we could have protection of the public. And so because of their high degree of commitment to safety at Fernald they had approximately 1.5 million safe man work hours without a lost time injury and the remediation was accomplished in a safe manner for both the workers, the public and the environment.

The Corps also incorporates this level of safety management to all the projects that they do and so this same type of attention to detail and to safety will be implemented for any remedial action that's done at the Niagara Falls site.

At Fernald the citizens of the community provided valuable input to the remedial action decisions. A citizens group was formed in 1993 and provided input on various issues

that were most critical to the community. The stakeholders at Fernald agreed that if they could ship those K-65 residues off site that there was an appropriate balance in putting the rest of the lower level radioactivity waste on site.

The public also provided valuable input in what they called the future land use of the site. So the portion of the site that was designated for the on site facility was considered industrial in it's use while the remainder of the site that became the nature preserve was called recreational use. So therefore any kind of activities at the Niagara Falls site will also benefit greatly from public input.

And what else did we learn from Fernald? Well, the main thing is that we learned that the K-65s could be removed safely. It does require precise and detailed planning, it requires a focus on public and worker safety and it requires community input and public participation and it includes ongoing testing and monitoring to ensure that those controls that we put in place are protective.

So I'd like to thank you for your attention tonight and if you have any questions I'll just turn it over to Doug and we can go from there.

DOUG SARNO: We have a few minutes for questions specific to this presentation, and please use the microphone on your table so everyone can hear you.

TOM JOHNSON: As I understand it the Fernald

remediation was not actually a remediation, it was in fact an off site relocation of the materials in a stabilized form. The point that I'd like to make is this. One, we're in a Great Lakes watershed and that should increase the priority of removal of the materials from the Niagara Frontier as the aquifer did in the case of Fernald. Two, what happens when they reach Texas? How are they remediated, how are they treated, or are they buried in some salt dome or something? What's going on?

DOUG SARNO: George is going to focus on off site remediation so will answer kind of that off site question. And the first part of that, Fernald actually was sitting over a sole source aquifer so their drinking water was directly impacted by that. And I think there are strong parallels there in terms of --

TOM JOHNSON: I'm just saying we have a binational watershed involved in this.

DOUG SARNO: I hear you and we'll note that. I'm going to ask the folks to note those kind of comments in our group dialog. Right now I'm just looking for questions about this presentation or clarifications around what Fernald was doing. Yes, sir.

RON CHURCH: You mentioned that the State and the EPA will have some due process on the FS (Feasibility Study) or Proposed Plan. What role does the DOE in that?

DOUG SARNO: I'll let John answer that. Does the DOE have a role in the decision process?

JOHN BUSSE: The DOE does not have a role in the decision process. The Corps is the lead agency so once we make a decision we move forward and do the remedial action, whatever that may be, then we finish that up, then the DOE ultimately takes over the legacy management of the site.

DOUG SARNO: Yes, sir.

JOE CALARCO: I have a question for Julie. When you showed the picture of the cross section of our site in the yellow -- I'm sorry, the light green area, you said was a residual contaminated soil or whatnot. Is there a ceiling over our, the K-65 and anything else down there?

JULIE REITINGER: Well, there is a liner that separates the K-65 materials from the other contaminated wastes that are in the IWCS. But they purposely put that lower level contaminated soil on top of that to help create a containerization of those waste materials. And so they purposely layered other waste on top of it to help add those extra protective layers.

TOM JOHNSON: Do you have a clean cap over that?

DOUG SARNO: Yes.

JULIE REITINGER: And a clean cap over that as well.

JOE CALARCO: Can you walk right up to these containers of the K-65s?

JULIE REITINGER: The treated K-65s?

JOE CALARCO: Well, when Doug gave his presentation which is very, very good, Doug, I must say, when you gave your presentation you were saying that Fernald they drilled a hole down through the silo and used forced water to empty the containers. Well, obviously they'd have to go down to the container to put that hose in there. Okay. So can we do the same thing at our site? Do we have that capability of walking up to put a hose down into the container?

JULIE REITINGER: Well, those are types of things that we are looking at is what is the best way to access those K-65 wastes. Now, the thing that's key here is that Fernald did not open up -- I just wish I had a picture of this, but Fernald did not open up that silo without those men being in full protection and they were actually enclosed in a structure, a plastic structure, that helped containerize those wastes. And the air, there was a hose attached to that structure that sucked that radon gas out and sent it to the radon control facility at the time that they were doing that.

So, we are looking at options on what's the best way to extract that material out, whether it be, you know, the size of the hole or other, and there will be some of the scenarios that we'll talk about in the future TMs (technical memorandums) about what are some of the ways that we can remove those K-65s in a safe manner.

KEITH FOX: My question goes back to the Feasibility Study or what goes before it. In other words, we were talking about a remedial investigation which allegedly has taken place, and I have not been able to find that anywhere on the Corps website. Has it been posted?

DOUG SARNO: Yeah. Both the remedial investigation and the remedial investigation addendum are there and I can help you find that information.

KEITH FOX: Well, I'm pretty good at that but I haven't found it yet. Is it here?

DOUG SARNO: Yes. It's there. It is there.

KEITH FOX: That's good. Thank you.

DOUG SARNO: Joe?

JOE CALARCO: Could you go to slide 25? So there's a table on slide 25 that has the differences in the contents and the last thing that's checked for Fernald is the manufactured radiological materials. And I guess I thought you were referring, for example, to what was in silo 3 in that one picture. But in NFSS there are other radiological materials, not just contaminated soil, so while -- is it a matter of volume that the manufacture of radiological materials were –

DOUG SARNO: No. That means that they actually manufactured radiological materials.

JOE CALARCO: I know, yeah.

DOUG SARNO: That's why that -- it doesn't refer to what's there, it referred to what they did there.

JOE CALARCO: Right. Okay. I see. So I was a little confused by that. I thought it had to do more with, you know, issues due to the contents, not what was done there.

DOUG SARNO: Right. Is there anyone else that hasn't asked a question yet? I just want to make sure I get everybody. Yes, ma'am. Could you use the microphone, please, because this is being recorded so we can get a good record.

JULIE BOOTH: I don't think this is on.

DOUG SARNO: It is, it is.

JULIE BOOTH: In your comparison of the Fernald site and the Niagara Falls site, maybe I misunderstood. Evidently there is 400 -- I'm sorry, 4,000 cubic yards of residue at the Niagara Falls site.

JULIE REITINGER: That's correct, of K-65 residues.

JULIE BOOTH: Right. On 191 acres?

JULIE REITINGER: No. It's within the 10 acre IWCS. So not only is the 4,000 cubic yards in the southern portion of the IWCS but they're all contained within Building 411.

JULIE BOOTH: Okay. And then at the Fernald site you had 8,900 yards of residue on 1,050 acres? That's the notes that I --

JULIE REITINGER: They were stored, yes, but they were stored inside those two silos, those K-65 residues were stored in the two silos and those silos were part of the entire Fernald Feed Materials plant area which was a thousand acres.

JULIE BOOTH: Okay. I was worried about the proportion of the concentration. Was there a comparison between the two, the proportion of the concentration.

JULIE REITINGER: The radioactivity was similar between the two sites.

JULIE BOOTH: Well, the odd thing is, with 4,000 cubic yards of residue, okay, being stored on a total of 191 acres, the total site, and then you got 8,900 yards of residue in a 1,050 acre site.

DOUG SARNO: That really is apples and oranges. It's not really relevant how large the site was in relationship to the amount of K-65 material. The Fernald site had millions of cubic yards of total contaminated materials. We're just really comparing this K-65 material because it was so similar to what we're dealing with here.

` JULIE BOOTH: But the total land area has no bearing on the amount of residue?

DOUG SARNO: Not really, no. We were just trying to make a comparison between the magnitude of these sites and the size of these sites.

JULIE BOOTH: It just seemed odd, as I'm coming in

late to this, so it just seemed odd to me that you would have half amount of residue and the entire site being only 191 acres where the amount of residue --

DOUG SARNO: Yeah. Right. And it really is not relevant to the overall issue. The question really was, both had these very similar materials and we were trying to give you a sense of what the Fernald site was all about and what the NFSS was all about.

JULIE BOOTH: Thank you.

DOUG SARNO: Sure. Mr. Johnson.

TOM JOHNSON: Just regarding the Niagara site, I'm just suggesting it might be useful as an addendum to your slide presentation, a map of the overall site. It would be a contour map showing drainage patterns, the location, nature, extent, depth of questionable materials, and also a page of acronym definitions.

DOUG SARNO: And yes, sir, many of the Corps reports do have that kind of information in them and that's been presented at previous workshops.

TOM JOHNSON: A map would be extremely helpful. I'm sort of new to this area.

DOUG SARNO: Understood completely.

TOM JOHNSON: A map would be extremely helpful.

DOUG SARNO: We'll think about that in terms of bringing those kind of background posters into the room to

augment the presentation.

TOM JOHNSON: Well, I think it might raise some on point questions --

DOUG SARNO: Right.

TOM JOHNSON: -- if someone were to look at a contour map and compare it -- and a drainage, with drainage matters, and compare that with your site storage locations.

DOUG SARNO: Right. But we're just not really framing -- this meeting is not about that. That's why it's framed differently. That's all. But I agree.

TOM JOHNSON: Thank you.

DOUG SARNO: All that's going to be important as we move forward.

TOM JOHNSON: Thank you.

DOUG SARNO: Yes, sir.

TERRY DUFFY: Terry Duffy. On follow up with the land concentration issue, were there any discussions or analysis with regard to IWCS with respect to the southern location, the suspicions of groundwater leakages, the issue of no liner underneath the site at all compared to what looks like sealed silos at the other site. Mainly the groundwater issue but -- did that come into play at all, or has it?

DOUG SARNO: I'll let Julie answer that question.

JULIE REITINGER: Well, the DOE designed the IWCS with the idea of using many of the underlying natural clay

materials, and in fact when you build an on site disposal facility you may add a liner but you also add a compacted clay layer below that. We do acknowledge those differences between the IWCS and an on site disposal facility such that was built at Fernald and as we go through the FS (Feasibility Study) process we'll take into consideration those differences as we evaluate the protectiveness of what the IWCS currently is.

DOUG SARNO: Part of the challenge here is that we're looking at a slice of information right now that is contained in this technical memorandum and it's really just looking at comparing the K-65 materials and how they handled them at Fernald.

Its intention wasn't to look at how things are actually managed right now at NFSS or compare how they were stored in one place or another in any real detail. It's really trying to just see, can we learn some lessons for how they handled it, how they moved it, and we were just trying to create some context for background. But those issues around how they're stored and what the IWCS does and doesn't do and how it is and isn't built are going to be critical to looking for remedy as we move forward. Yes, sir. Last question and then we're going to take the next presentation.

JOE CALARCO: Thank you, Doug. On the non-priority list, has Niagara Falls ever been on a priority list?

DOUG SARNO: It's never been on the NPL, the

National Priorities List (NPL), no.

TOM JOHNSON: Some of us contend it should be.

DOUG SARNO: Again, that's another question and another issue and Julie described why it was ranked the way it was by EPA at the time. You know, there's little chance that it's going to be revisited or reranked by EPA. It's firmly entrenched in the FUSRAP process and moving forward for remediation and what NPL does is get you to the front of the line for remediation so it kind of wouldn't add any more to the process at this point.

JULIE REITINGER: The process of evaluation is the same. They're both CERCLA processes, so I understand the attention that's maybe warranted for the site, but it will go through the same decision process looking at exposures and things like that as well.

DOUG SARNO: Okay. I'm going to turn it over to George Butterworth who's going to give a similar length presentation on the evaluation that was done to look at what are the options for or the opportunities for off site disposal.

GEORGE BUTTERWORTH: Thanks, Doug. Now we'd like to turn our attention to focus on waste disposal, outside waste disposal options and particular look at what happened at Fernald because they successfully did remove and ship off site for disposal K-65 residues as well as some other wastes. So we wanted to look at what they had done and look and update

current waste disposal facilities capabilities throughout the United States and gather the information regarding what they can accept, what levels they can accept, and what the various costs would be associated with those waste classifications and waste types.

Off site disposal is one component of a remedial alternative that can be considered and will be considered as part of the FS (Feasibility Study) development of the various alternatives for detailed design and cost estimating purposes. For that reason we want to include the more detailed information and current latest up to date information regarding the costs and capabilities and what we need to address in terms of preparing any potential waste that might be considered for off site disposal. That way in developing any detailed design and cost estimates for any alternatives in the FS (Feasibility Study) associated with off site disposal would have a better -- would be better defined because of the use of more recent data and information. So the next few slides are going to talk about, what is off site disposal, what was considered and how did we -- what conclusions did we include into the technical memorandum regarding potential off site disposal facilities and their capabilities. Next slide, please.

First of all, waste disposal, there's numerous considerations that you have to take into account regarding

off site waste disposal. First and foremost, these waste disposal facilities are regulated by Federal and State laws, rules and regulations. And those are administered by either a State or Federal regulatory agency.

A waste disposal facility must demonstrate to that regulatory agency that their siting, design, construction, operation and closure of that disposal facility does in fact meet all the rules and regulations that are applicable to their facility, and in the process of doing that, the means upon which the regulatory agency has control is that they issue licenses or permits for that disposal facility, and based on where the disposal facility is located and the type of waste that the facility wants to manage or dispose of at the site, the regulatory agency will issue the permit or license for that specific facility. But once the license has been issued, that establishes what we call waste acceptance criteria, which is really the set of rules that have to be complied with for you to be able to shift waste to that specific facility.

And part of the waste acceptance criteria that is reviewed and approved by the regulatory agency is, what type of waste, what classification of waste can be disposed of at a particular facility, what are the concentration limits for various radionuclides that can be placed in that disposal facility and what kind of containers can be used and what is the appropriate waste form, acceptable waste forms that they

can accept. Another factor in terms of off site disposal is actually transporting the waste to the disposal facility and those -- the transportation of those waste containers is regulated by the Department of Transportation regulations and those must be taken into consideration in design and your strategy and what your detail design and processing and et cetera would need to be for any alternatives because there are restrictions on the transportation in terms of those limits for the waste containers, et cetera. And so all of those have to be taken into consideration during the FS (Feasibility Study). And then finally the key component that we want to learn from all of the potential waste disposal facilities would be, what are the disposal costs for each of the different waste classifications and associated activity levels. Next slide.

As we just discussed, an off site disposal facility will have waste acceptance criteria. These waste acceptance criteria are going to be different, definitely different for different disposal facilities. As I indicated earlier, the license or permit will be determined by the regulatory agency in terms of where the facility is located, because they're located in different regions and throughout the country, the type of waste materials you're going to place there, the actual design, you mentioned the design features, the actual design of the disposal facility itself, the cells, what do the cells look like, how will the containers of the waste and the various

waste forms be placed in those cells, so as to provide for long term stability and comply with all the Federal and State rules and regulations regarding disposal of radioactive waste.

So as I mentioned, the waste acceptance criteria, and I can't over emphasize it, those are the rules. You know, like I said, they're different for different facilities and they're driven by what the regulatory agency feels can be safely disposed of at that location and comply with all the rules and regulations. So therefore, they become the rules for folks like ourselves who might want to ship waste to one of these facilities. You must comply with all of the rules of their waste acceptance criteria. No waste can be shipped to a facility unless it meets all of the waste acceptance criteria for that facility. Next slide.

So one of the key things that I mentioned in terms of the waste acceptance criteria, it's driven by waste classification. There are three principle waste classifications associated with the waste currently located within the IWCS. Those waste classifications are designated as 11e.(2) byproduct material, low level radioactive waste and low level mixed waste. There are also two other waste classifications used in the regulatory agencies and that is that have been mentioned by -- at some point in time associated with the Niagara Falls site has been brought up are high level waste and transuranic waste, those two waste classifications.

So I'd like to take an opportunity here to define real quick what these waste classifications are because they define where waste can go. You have to meet the waste classification criteria for specific disposal facilities.

Byproduct material that's designed 11e.(2). There are four classifications of byproduct material specified in Section 11e of the Atomic Energy Act. Section 11e.(2) defines the byproduct material as tailings and waste associated with the processing of uranium or thorium ore for the purposes of recovering uranium or thorium.

That is the definition that fits the residues that are currently placed, the high activity residues currently placed within the IWCS. All of those residues are the result of processing of uranium ore, the tailings and waste associated with the processing of uranium ore. The next category is low level waste -- low level radioactive waste, I'm sorry. And generally the term is defined as what it's not. It is radioactive material, waste material that is not spent fuel waste classification, not classified as a high level waste, not classified as a transuranic waste, not classified as a byproduct material and not classified as a naturally occurring radioactive material. So it's what it's not. So if it's not one of those it's a low level radioactive waste. And then the other category's a low level mixed waste and there that

is a term to describe a waste stream, you have a low level radioactive waste and it has to have two components. It's a low level radioactive waste and a chemical hazardous waste present, both in the same waste stream. If they are both present then that waste must be managed as a low level mixed waste and has to be disposed of in appropriately permitted facility for handling low level mixed waste.

The high level waste is defined to be the highly radioactive material resulting from processing of spent fuel, spent nuclear fuel. That's the classification for high level waste. Transuranic waste classification is any radionuclides with an atomic number of 92 -- greater than 92, I'm sorry, because the atomic number for uranium is 92, so any radionuclides with atomic number greater than 92, and has a concentration of 100,000 picocuries per gram or greater is classified and must be managed as a transuranic waste. Now, those are the definitions of those various waste categories.

I want to point out, we do not have high level waste classification materials at the Niagara Falls site, nor do we have transuranic class waste classification materials at the site, although there has been detectable quantities of plutonium identified in some of the remediation investigation work in some isolated areas where concentrations were at approximately 6 picocuries per gram, and as I indicated, for

it to be classified as a transuranic waste and managed as a transuranic waste, the concentration has to be at 100,000 picocuries per gram or greater, which is not the case at Niagara Falls.

The Corps looked and evaluated all the potential disposal facilities out there that could handle and address the three principle waste classifications that I've identified, the 11e.(2), the low level radioactive waste and low level mixed waste. Next slide.

This slide shows the facilities that were deemed available that could handle the various, the three waste classifications that we have at the IWCS. They include the US Ecology Site in Idaho, the Energy Solution Site in Utah, the National -- I always have a problem, the Nevada National Security Site, which used to be called the Nevada Test Site in Nevada and then the Waste Control Specialist Site in Texas where the Fernald K-65 residues were shipped for disposal. Those were the key waste disposal facilities that truly can handle the type of waste classifications we have at the -- in the IWCS. I want to note that, you'll notice that there are two boxes that are shaded green.

Those are the two facilities, the only two facilities, commercial facilities, that can accept the 11e.(2) waste classification materials. They are also able to accept

the other two waste classifications, low level radioactive waste and low level mixed waste. The boxes shaded in white cannot accept 11e.(2) material so any 11e.(2) waste to be shipped off site cannot go to those facilities. However, they can handle some low level radioactive waste and low level mixed waste. So they are options. They were looked at in further detail and we did get a lot of information from them in terms of their waste acceptance criteria, what their container types have to be as well as what their disposal unit cost would be for each of the different waste classifications. This is a preliminary list of what the available facilities are. It is based on what we know today. That list could change. Their waste acceptance criteria could change. New facilities could be built or existing facilities that we looked at could go and approach their regulatory agency and have their license or permit amended or revised to accept a different waste classification or even to accept a different level of activity associated with waste. Next slide. So after having gone through and identified, yes, we now have –- there are potential disposal facilities and they can handle these different waste classifications and we have the cost information and waste acceptance criteria. We then focus the attention on, okay, what do we have within the Fernald site -- not Fernald, in the IWCS in terms of, what types of waste do we have, what volume, what activity levels, and what are their waste

classifications, all of which we need to know in terms of assessing what a off site alternative might have to consider in terms of developing the detail design and cost estimates.

The first step was to take a look at the wastes that were stored there and regroup them into six waste categories and the grouping was based on how the wastes were made and their activity levels. Next slide.

As you can see here, the six waste categories that we identified within the IWCS are the K-65 residues, the other high activity residues that -- the tower soils, contaminated rubble, R10 residues that Julie mentioned and associated soils around them, and then the bulk of the wastes within the IWCS, the contaminated soils. And on this slide we presented the information that we used in the terms of assessing what would have to be taken into consideration and what the potential costs would be, and that is the activity levels for each of those waste groupings and the volume. And the waste classification, as I indicated earlier, there were three. The 11e.(2) waste classification was assigned to the high activity residues primarily on the basis of, one, they are residues associated with the processing of uranium ore. Those are the waste, the tailings coming from those ore processing, and secondly, Congress mandated that the high activity residues located within the IWCS are to be managed as 11e.(2)

waste for disposal purposes. Those first five categories in that far left column are waste categories that are either high activity residues or wastes that are in direct contact with the high activity residues, or wastes generated as a result of handling high activity residues. Therefore, they all have 11e.(2) designations.

The last category, the contaminated soils, you'll notice there are three waste classifications for those. Real quickly, there are some contaminated soils that were actually placed in Building 411 to cover the high activity residues located in Building 411. Those soils, that small volume of soil that was placed, the contaminated soil placed in there, it's assumed since it's in direct contact with the K-65s and other high activity residues, we assumed it will be managed as 11e.(2). So there's a small volume of the large contaminated soil volume that we're considering would need to be managed 11e.(2). There's another small volume associated with managing contaminated soils as low level mixed waste, and the rationale for that is, there is contaminated soil within the IWCS that may also be comingled with chemical hazardous waste materials that may have been placed into the IWCS. Therefore, an assumption was made that approximately a small volume of the contaminated soil volume would need to be managed as a low level mixed waste. So therefore -- and then the bulk, the rest of the contaminated soils we designated

as the low level radioactive waste classification. These classifications were all assigned so that we could then look at the appropriate facility that could handle that waste classification, what their waste acceptance criteria would be in terms of concentration limits, et cetera, and then estimate what we would have to address in the Feasibility Study. Next slide.

This is another way to kind of look at that table of information. Here we're showing on the left the relative percentage of volume of the various six waste categories that we had just talked about, and on the right is the percent of the total radioactivity contained within the IWCS associated with each of those waste groups. For example, the K-65 residues noted in blue, the percent volume is a very thin, slither piece of the pie. It constitutes 1% of the total volume within the IWCS, but if you look at the percentage of radioactivity within the IWCS it represents 95% of all the radioactivity within the IWCS. So here you have a very small volume which constitutes an extremely large percentage of the total radioactivity on site. It's interesting to note, if you were to add all of the materials that are in Building 411 where the K-65 residues are, they would constitute 5% of the total volume of the IWCS but yet they would represent 99% of the total radioactive within the IWCS. So if we were to manage

something like just Building 411 material, you've taken out 99% of all the radioactive associated with the IWCS. One thing you might notice on here, and I wanted to point it out, the R10 pile and the contaminated soil, even though the contaminated soil is the brown on the left, rather very large volume, and the R10 pile residues and soil is the purple and it's also a large volume.

So they constitute a very large percentage of the total volume. But if you look on the radioactivity side, you don't see them. It's because the percentage of their radioactivity is so minuscule they don't show up on the pie chart. So it's not an omission, it's just that it doesn't show up. There's not much there. They're very very low activity. Next slide, please.

Okay. We then took this information after we had broken out the waste classifications and started looking at the waste acceptance criteria, we then looked at trying to estimate what the disposal costs were based on the information given to us by these various disposal facilities. Now, I want to note that the final waste classification for any waste that is shipped off site will really be dependent on what you measure when you go to manage that waste, because there could be -- you might have assumed something is a low level radioactive waste, but when you actually go to manage it and you sample it and analyze it to meet the waste acceptance criteria rules,

you might find that there is a chemical hazardous constituent that fails the test and doesn't meet the criteria so therefore it must be managed as a low level mixed waste. So the final actual waste classification is determined at the time you do any removal action. So I want to make that clear that these aren't cast in stone.

Now, in terms of estimating what the disposal costs would be for each of these waste classifications and their various waste categories and their associated volumes, we then had to look at the waste acceptance criteria for those waste groups, look at the concentrations, the activity concentrations, and compare them to the waste acceptance criteria associated with the facility that would be receiving that waste classification. And we also had to look at the Department of Transportation regulations because they also, like I indicated earlier, have restrictions in terms of what the allowable dose can be from the exterior of the containers as they're being shipped and conveyed through towns, et cetera. In looking at those various criteria, some of the wastes, particularly the K-65 residues, it's obvious that they would need to be what we call downblended, they would need to be mixed with other lower activity waste materials, and part of the mixing with other low activity level materials as well as the treatment process, your target is to get to have the material meet the waste acceptance criteria. As a result of

that, you have a volume increase, so although you might start out with 4,000 cubic yards of K-65 residues the actual disposal volume that goes to the disposal facility would be approximately six and a half times that based on the evaluation we did. So that affects your disposal costs, because you apply the unit disposal costs that were given to us from the disposal facilities to the volume of waste they receive, not the volume of waste you took out of the ground. Next slide.

The results of the estimated disposal costs represented here. Now, I want to point out that this is strictly just disposal costs. It does not include any costs associated with removing the waste from the IWCS, the actual waste containers themselves, the transportation costs, the processing and treatment costs on site, et cetera. This is strictly only the disposal cost. The K-65s, the light blue color shown on the bar chart, the disposal cost because of the volume increase from treatment to meet the waste acceptance criteria resulted in approximately $26 million that would have to be paid to the disposal facility just for disposal. The contaminated soil on the other hand is a rather large cost. And the driver for that is not necessarily treatment and volume increase, it's from the sheer volume of the contaminated soils you have at the site and the disposal cost for low level radioactive waste is much cheaper than the disposal cost for 11e.(2) waste, but because you have such a large volume, if

you were to ship all of the contaminated soils off site, you would approximately cost a little over $80 million just for the contaminated soils. If you were to dispose of all of the wastes within the IWCS, complete removal with off site disposal, the disposal cost alone would be approximately $235 million dollars.

Now, these costs are preliminary and they will need to be updated as we progress through the CERCLA process and the Feasibility Study, because things change. Updates will be made to various waste acceptance criteria. The disposal facilities are constantly changing their pricing and what they will charge for disposal. So as we get to different phases throughout the FS (Feasibility Study) updates to waste acceptance criteria and disposal pricing will be made, so that any detailed design and cost estimating can reflect the best available information at the time that the estimates are made. And more information about those detailed design features that are necessary for treatment of the waste to meet waste acceptance criteria and the disposal costs, et cetera, will be provided in more detail in the FS (Feasibility Study). Next slide.

Okay. In summary, there are options for shipping IWCS waste off site for disposal. Fernald has done it and in looking and contacting the various disposal facilities, the options are there, they are available currently and there

may be new options come available in the future and some options may go away in the future, but we constantly need to be looking at it and getting the latest and best available information. There are only a limited number, as I indicated earlier, that can accept 11e.(2) material which are high activity wastes. Currently at this point there's only two facilities, Waste Control Specialists in Texas and Energy Solutions in Utah. The preferred alternative would be, if we went off site disposal, would be for the Waste Control Specialists facility in Texas because it does have a higher limit regarding the activity levels allowed in their waste.

Also as illustrated earlier, the actual cost will be dependent on what the disposal volume will be. That disposal volume will be dependent on the alternative selected, what the alternative involves, like how the material will be removed, its treatment, any treatment being used on it, and what that treatment would do in terms of increasing volume or even decreasing volume, depends on the treatment. All of those factors would need to be taken into consideration for each of the alternatives in an FS (Feasibility Study). Thank you.

DOUG SARNO: Thanks, George. And again, we'll take about five or ten minutes for questions here. Remember, the focus here was merely to look at, what volumes of waste do we have in the IWCS, what are they classified as, and where

could they go. There was no detailed analysis of an alternative here. It was just trying to understand the lay of the land for off site disposal. So any questions, clarifications on that. Nona.

NONA McQUAY: My name is Nona McQuay. Could Mr. Butterworth please show us slide 46 and describe to us what tower soils are.

GEORGE BUTTERWORTH: No problem. Tower soils. The K-65 residues were stored in a concrete silo tower designed Building 434 at the Niagara Falls Storage Site. They transferred the materials out of the tower into the IWCS in Building 411 basement structure. Then they dismantled the tower and put the concrete debris and that also in the IWCS. And once they had completed taking the concrete tower down, they went to clean up the contaminated soil underneath the tower.

And because K-65 material had spilled as part of the handling and transfer, so therefore when they cleaned that up we called it tower soil and it was placed inside Building 411 along with the other K-65 residues because of the primary contaminant, well, the only contaminant basically was that associated with the K-65s coming from that tower. That's why they're called tower soil.

DOUG SARNO: And this historical poster has a photo of that tower. You can see the structure in the photo. Other

questions? Yes, sir, Tom.

TOM JOHNSON: Would it ultimately be possible to reprocess or recover the K-65 residue into a metallic residue for the use in reactors? I'm just curious.

JULIE REITINGER: Yes. That is some of the options that we're looking at as part of the FS (Feasibility Study). That is one of the alternatives is resource recovery and so we'll examine the viability of the market for that metal as well as the process involved with recovering those metals and how much recovery we can expect. So you'll see that kind of information in the last TM that we'll present in the spring, I believe it is.

FLOOR: Most of that is Radium-226.

MR. BUTTERWORTH: Yeah. Radium-226 would not be as useful in a reactor.

FLOOR: It's not applicable?

FLOOR: It's for a reactor.

FLOOR: Okay, I understand.

DOUG SARNO: But it could potentially have other uses and those kinds of things will be looked at. Was there a question here?

KAREN ALLEN: I was just wondering, since those are just disposal costs, what are the transportation costs for that amount of volume? Has that been looked into at all?

DOUG SARNO: The cost of actually removing those

materials, as you saw at Fernald, it's a very complex process, and the cost of transporting it, as you saw at Fernald, it's not like you just throw it in a pickup and take it to Utah. They're very very high. That was not part of the analysis for this particular memorandum.

GEORGE BUTTERWORTH: Let me speak to that. We did look at transportation costs.

KAREN ALLEN: You did.

GEORGE BUTTERWORTH: And it is in the technical memorandum.

KAREN ALLEN: Okay.

GEORGE BUTTERWORTH: But we didn't do a comparison, we didn't generate the cost estimates because it will be dependent on the alternative in terms of whether you're going to use truck, use rail, use a combination, depends on which facility you might want to go to. You may be able to go direct rail into them. There are not rail capabilities within -- at the Niagara Falls Storage Site.

KAREN ALLEN: Right.

GEORGE BUTTERWORTH: So therefore, options that would have to be considered would be, do you put a rail spur into the site and then go rail to rail, use direct rail, or do you just stick to truck like Fernald did, or do you truck it to a transfer facility nearby and then go rail to the disposal facility. All of those options have different

components of transportation costs. And therefore, we didn't feel comfortable trying to estimate what transportation costs might be, but it was real simple to do for the disposal because if you give them one cubic yard of waste, then here's what your bill is for one cubic yard.

KAREN ALLEN: Thank you.

DOUG SARNO: And those detailed analyses obviously will be done in the FS (Feasibility Study) and we'll have the full set of costs associated with that. And that was also an interesting lesson learned from Fernald because the public at Fernald actually got very involved in that exact question and really pushed for rail transportation because it was safer and cheaper in the long run. But you could -- only certain places could have rail transportation. Any other questions?

(No response.)

DOUG SARNO: Okay. So what we're going to do now is we're going to move into our table conversations, and actually I think there's a couple slides, you're switching in the presentation.

What I want to do is get all the folks in the back that are stakeholders to kind of move up to a table up here. The few stakeholders that are right here unfortunately, I'm going to move you guys to one of the other five tables because we don't have enough to fill up all the tables, but if you

three would pick one of these five and we'll leave this table empty. And those folks in the back also come up and fill in these five tables so that we have five groups. And the idea here is that we want to create a real conversation, a real dialog with you, we want to hear your input, we want to understand kind of your more detailed input on the presentation tonight, the process we're moving through, and we're going to move that around several questions. We'll put this back up at the end but here is actually the -- if you have any questions you can dial the Corps' phone number and click on option 4, and they prefer you didn't leave detailed comments on the technical memorandum here only because they would have to transcribe those and want to make sure they get them right, so they really want comments in writing at FUSRAP at usace.army.mail and/or to the Corps of Engineers address. This information is also in your materials.

TOM JOHNSON: We actually have a card for that.

DOUG SARNO: And there's a card there that tells you what to do. So -- and remember, this is open till the 28th of October. Next. So we're going to take about 45 minutes and we're going to really kind of ask you some questions about what was presented tonight and about the process as we move forward, so we can get some insight. We're looking for some input from you to help the Corps and help the process move forward in a constructive way.

The first thing we're going to ask you is to pick a spokesperson at your table. At the end of the 45 minutes each table is just going to give a very quick one, two minute report out on what were the key thoughts and key issues at those tables. But also, everything that's discussed at the tables will be captured and summarized. You'll have a facilitator at your table that's either myself or a Corps of Engineers person, and it gives you another opportunity to kind of meet the Corps staff and interact with them. And there will also be a recorder there who's making sure they capture all the key points that are discussed at the table. But we'd like you to report out kind of what you talked about so one of you is going to be asked to be a spokesperson. Next slide.

And this is what we're going to talk about. First of all, we'd really like to sort of, overall impression of the presentation tonight. Did we hit it kind of at the right level? Was it useful? What could we do better next time? How helpful was this information? Were there places where you'd like more detail, less detail, those sorts of things?

I want to talk a little bit about future land use for the NFSS. We want to understand community expectations at this point. There is no presumptive land use per se. Defining land use at Fernald was a critical first step in the cleanup process but we never, we haven't really talked about

land use from a community standpoint here yet and we'd like to hear some of your initial reactions to that. What other community values or concerns or issues are important as the Corps moves forward on this FS (Feasibility Study) process. We're really just kind of at the beginning of this FS (Feasibility Study) process. It's going to take some time and we want to make sure that we're providing the kinds of information and being responsive to the kinds of issues that are important to the community. I mean, we have a good sense of it. They've been interacting with you for a long time. But we want to make sure we're on the right track.

Are there other important lessons learned from Fernald in addition to the ones that the Corps identified that you think are important or will want to make sure resonate with the Corps as they move forward. And then we're going to ask you to look at the range of alternatives and just make sure that you can give the Corps a little bit of direction about, what is the information or the range of information you want to see as these alternatives are developed and explained and presented to you as a community.

So there's a handout in your packet which has each of the detailed questions listed out and your facilitator will walk you through the process. So please, gather around one of those five tables and somebody will be kind of calling time to let us know where we are, and then we will break and report

out at quarter of.

TOM JOHNSON: One last question. Since the priority of the Niagara site didn't rise to the level of Fernald, were you really spinning your wheels talking about disposal off site, which was warranted by the priority that Fernald had because of the water table?

DOUG SARNO: Hopefully, I don't think that –- (inaudible) not on microphone.)

TOM JOHNSON: Okay. So you're not discounting off site disposal.

DOUG SARNO: Not at all.

TOM JOHNSON: Okay. Great.

DOUG SARNO: But there is –- (Inaudible) --

TOM JOHNSON: Understood. I hear the Russians have a rocket that can take it to the moon.

(At the end of the presentation, several small groups were formed so that the USACE could meet with the citizens attending the meeting. The small groups discussed questions regarding the content of the presentation, the future land use for the Niagara Falls Storage Site, other potential remediation concerns that the citizens might have, and their initial thoughts about several potential remedial actions. Each group reported their findings at the end of the small group discussions.⊙

DOUG SARNO: We're going to try to wrap this up real

quick so if I can get everybody attention. I'm going to walk this mike to each table so that the spokesperson is speaking and if we could just hold the other conversations down so that we can hear. Please, spokesperson, please introduce yourself as you make your presentation, and we're really just looking for a one minute report out of key themes, and Terry seems to be the guy.

TERRY DUFFY: Yeah. I got elected to do this. I'm Terry Duffy from the Sentinel, you guys probably recognize my name so I'll let it go at that. Our perceptions of the meeting itself went very good. There was, overall impressions like I said were very good. This is one of the better presentations that the Corps has held over the course of the years and I can testify to that from earlier ones. There was some questions regarding the 11e.(2) classifications and how it impacts the IWCS and during the Feasibility Study that could be better explained.

Next issue, land use and the component of decision making. It varied, you know, it's understood the whole area is, there's a lot of dump sites here, there's also a campsite here, there's a golf course here, there's ongoing residential development, there's a lot of promise in tourism and it's a beautiful area to live in. Some people, there was some discussion on nature preserves. Some discussion that also people have given up on the site because of its legacy and

some of the issues involving remediating the balance of it and ongoing operations here, I guess. Okay.

Moving in the future, land use, let's see, in terms of lessons learned in Fernald, some of the priorities are different for us today than they were with Fernald due to the time frame, due to the politics, the economy. And there was a question regarding whether we had any input from Canada thus far and surprisingly there hasn't been but it was suggested that maybe we will down the future once this ever gets actually in place and the impact, potential impact on water comes into play.

Moving right along. Let's see. Risks associated -- there was discussion on the risks and expenses with doing it and disposing. There was an understanding that the community as a whole would love to see the K-65s out of here. That's viewed as a stigma and I think we all understand how the outsiders look at Lewiston as the home for Manhattan waste and there was also discussion on how that affects the business and tourism industries here and the consensus was the K-65s would be the thing to get removed out of here and there would be maybe some comfort with the balance of it remaining as a nature preserve being integrated with the general area. Okay. And I guess that's it.

DOUG SARNO: Okay, Tom?

TOM JOHNSON: Okay. According to the guidelines

here for response, I think we generally agree that it was a very thorough presentation of the process, that there is much yet to be revealed. I think we all wanted it to be returned to use between open space or industrial taxable reuse, and there was one contention that in fact if it was an industrial site there could still be a substantial open space component of that site, definitely not farm or dwelling use. And that presuming those uses, we would want to increase the priority due to the lake, freshwater watershed, and remove everything in the IWCS and dispose off site.

BONNIE BOOTH: Hi. My name is Bonnie Booth and we basically all agreed that the presentation was very good. Jack said it was very good at reporting detail. Joe said we spent too much time on the Fernald site and a lot of the information there was not applicable to us and he felt that it minimized the Niagara Falls site, put Fernald on a pedestal, and I added that the presentation didn't cover the integrated contamination in the region, the fact that we have a lot of other brown fields and waste sites in the area that also are big problems and that that also needed to be part of the presentation. Land use, we were totally, it was left up in the air. Julie had inferred or implicated that when it's a residential classification land use that the cleanup goes to a higher level and if it's industrial use for the land, that the cleanup does not extend into that level that it would if

it were residential use, so that's something to consider. And then we have to consider the birds and the bees and all that if we make it into a preserve. So we didn't really have any consensus on that. We need more education on the land use and obviously the costs, and then the future -- well, future land use.

And we were concerned about how the waste would be transported through the community and other communities, the bad press we might get. I think we all kind of agree that we would like the stuff out of here, but we were concerned on how it would be done, the traffic and how we would do it in terms of the logistics and all, and obviously the cost, and we all agreed everything, the presentation was very good.

MARY ANNE ROLAND: I'm Mary Anne Roland. We thought that it was an excellent presentation and the fact that the folders had colored duplicates of what were in the slides. It was a wonderful opportunity to share with other people that were not here and to refer to the information.

And I think this discussion is excellent; just being able to hear what other people from the community feel about the information that was presented is important, too. The long term land use we discussed and like some of the other groups we discussed that maybe farmland wasn't a good use, that maybe industrial would be better just because it's

surrounded by other landfills and in terms of the concern for residential there, we thought that given the extended activity that was going to be going on there in the cleanup that maybe there should be some sort of a moratorium on building in that area because of trucks and so on and so forth. So that maybe we'd need to coordinate with Town officials and so on. We did discuss the water, you know, concerns about water, and that was one of the -- the water contamination was one of the things at Fernald and we were discussing how that might impact. The trucks were the other things that, we're very sensitive about hazardous waste being trucked into our community and that maybe a rail line would be the most efficient way of disposing of some of this material if that was more cost effective. Let me see. And then, I don't think that we really came to a conclusion about how much of it should be disposed of, but like the other groups we felt that the high radioactive stuff should be gotten rid of essentially first, and then if -- my concern is the economy is not going to be good for another 10 years probably and so the cost is going to make a big difference in how we handle this, and just looking ahead, maybe being a little realistic.

DOUG SARNO: Thank you so much. Thank you, everyone, for being such a good audience, paying so much attention, asking great questions, having great conversations. I just want to please refer you again to the

Community Action Council who's going to meet next Thursday evening at 6:30 to talk about all this stuff in more detail. I'm going to bring to them a summary of the small group conversations. They're going to delve into this and think about the kinds of formal recommendations they want to forward to the Corps from the community. We'd love more people to be part of that process and call me if you want any information about that at all.

Also I encourage you, if you want to send in formal comments. Everything here is going to be recorded and considered as part of the process but if you want to get more formal comments in on your own, please do so, or through me. Give me a call, send me an email, and I'm happy to work with you to do that. So I'm going to hand it over to John just to close this out and then we'll call it a night.

JOHN BUSSE: I want to thank everybody for coming out. This is the first step in the Feasibility Study. It's going to be a long, long journey over the next couple years and we definitely need you guys there and giving us input on a regular basis, and like Doug said, I encourage you guys to come out to those monthly meetings.

The more people that participate the better representation we have from the community, the better we can incorporate your comments and input into the Feasibility Study. So thanks a lot. It's past 9:00 o'clock and Go Bills.

(Meeting concluded)

CERTIFICATE

I, RHETT L. BAKER, certify that the foregoing transcript of proceedings in the matter of US Army Corps of Engineers, Re: Niagara Falls Storage Site Formerly Utilized Sites Remedial Action Program Remedial Investigation Report Addendum.

Held in Lewiston, New York was recorded on a SONY BM-146 Confer Corder, and transcribed from same machine, and is a true and accurate record of the proceedings herein.

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Date: 10/3/11