RESTORATION ADVISORY BOARD

FORT McCLELLAN, ALABAMA

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Taken before SAMANTHA E. NOBLE, CCR, Certified Court Reporter and Commissioner for Alabama at Large, at Fort McClellan, Alabama, on the 21st day of April 2014, commencing at approximately 5:00 p.m.

R E P O R T E R ' S I N D E X

MR. SCOTT BOLTON: I'll go ahead and call the meeting to order, and we'll do the roll call right now. But, obviously, we've got significant absences.

Ed Kimbrough is excused. James Buford is excused. Phillip, you're on the phone, right?

MR. PHILLIP BURGETT: Here by phone.

MR. SCOTT BOLTON: Don't have a clue about the status of Dr. Cox. Mr. Elser is excused. I don't know where Dr. Harrington is or Mr. Foster, so they're absent.

Obviously, Gene is here. I don't know where Mike Kimberly is at, so another absence there.

Let's see, John Hall, John, you're here.

MR. JOHN HALL: Yes, sir.

MR. SCOTT BOLTON: Thank you. John Pearce is not. Dr. Steffy is excused. And Tony Thompson is not. Ed Turner is.

So, we technically lack a quorum. However, I am going to suggest to the group that even though it's a technical violation of our procedures, that with the difficulty we've had getting quorums, I would suggest that we would use the members that are here to vote on whatever business is necessary, particularly in light of the fact that we've moved to semi-annual frequency.

MR. GENE HOWARD: Agreed.

MR. SCOTT BOLTON: You can be held hostage for years by --

MR. GENE HOWARD: Yeah.

MR. SCOTT BOLTON: -- by two or three people not showing up.

MR. GENE HOWARD: Yeah.

MR. SCOTT BOLTON: So, unless there is some great dissension, we will just do this by fiat, chief battalion call --

MR. GENE HOWARD: Define fiat.

MR. SCOTT BOLTON: So, the next item on our agenda is an introduction of guests; I guess we can start with that. Brenda, you want to lead off?

MS. BRENDA CUNNINGHAM: Brenda Cunningham, transition force.

MS. HOLSTEIN: Lisa Holstein, transition force.

MS. ALISON ZEYTOONIAN: Alison Zeytoonian. I work for the same company as Lisa and Brenda. And I'm just here observing.

MS. SARAH CLARDY: Sarah Clardy, refuge manager over at Mountain Longleaf National Wildlife Refuge.

MR. TROY WINTON: I'm Troy Winton with CBI Federal Services.

MR. JEFF TARN: Jeff Tarn with CBI Federal Services.

MR. SCOTT BOLTON: I guess, just keep going. We do have some new members.

MS. KAREN PINSON: Karen Pinson, National Guard.

MR. GERALD HARDY: Gerald Hardy with Matrix for MDA.

MR. SCOTT BOLTON: I'm Scott Bolton. I'm the transition force site manager.

Do you want to tell them who you are, for those that don't know you?

MR. GENE HOWARD: Gene Howard, Jacksonville, Alabama.

MR. JOHN HALL: John Hall. Professionally, I work with Anniston Water Works & Sewer

Board.

MR. ED TURNER: Ed Turner, Anniston Water Works.

MS. BRANDI LITTLE: Brandi Little, Alabama Department of Environmental Management.

MR. SCOTT BOLTON: Phil?

MR. PHILLIP BURGETT: Philip Burgett. My affiliation is Anniston Water Works.

MR. SCOTT BOLTON: Right. As many of y'all as we have on the board, we may just have the meeting down there the next time.

MR. ED TURNER: I would be okay with that.

MR. SCOTT BOLTON: So much for the introduction of guests. If everybody would look, we have -- in the packets there are some minutes for back in October of 2013. Do we have a motion to

approve them?

MR. GENE HOWARD: Motion to approve.

MR. SCOTT BOLTON: How about a second? We don't need this thing dying for lack of a second folks. Do we have a second? Oh, seriously.

MR. JOHN HALL: I'll second it.

MR. SCOTT BOLTON: Thank you, John. All in favor to approve the minutes as written, the October 2013 minutes?

MR. GENE HOWARD: Say aye.

MR. SCOTT BOLTON: Motion passes.

MR. GENE HOWARD: Yeah.

MR. SCOTT BOLTON: They are approved.

We have one item on the old business. We had a suggestion/request to change the

day of the week of the RAB meetings, as obviously we know we normally meet on Mondays, and there has been a proposal to change it to Tuesday.

Is there any discussion on that? Is there -- I saw some wincing down at the end of the table. Is that discussion or the pollen got you, Brandi?

MS. BRANDI LITTLE: That's the only day of the week that I have something.

MR. SCOTT BOLTON: Well, I'm not sure what to do. We can call it to a vote, but obviously ADEM is a key player. Is there somebody else that they would substitute to send --

MS. BRANDI LITTLE: I can check and see.

MR. SCOTT BOLTON: It's only once every six months, too.

Don't forget, we're --

MS. BRANDI LITTLE: That's true.

MR. SCOTT BOLTON: -- semi-annual.

MR. GERALD HARDY: That's a win-win for you.

MR. SCOTT BOLTON: Do we have a motion to change the meeting day of the week from Monday to Tuesdays, semi-annually?

MR. GENE HOWARD: So moved.

MR. JOHN HALL: I'll second.

MR. SCOTT BOLTON: Another motion to second. All in favor?

Sounds like the motion carries. All right, so officially now, our -- we will be doing it on whatever it is, Tuesday of the month, as opposed to Monday.

MS. CUNNINGHAM: So, the next meeting will be October 21st?

MR. SCOTT BOLTON: 21st, yes. That messes you up, because you already put the stuff in.

MS. CUNNINGHAM: That's okay.

MR. SCOTT BOLTON: Okay.

MS. CUNNINGHAM: I can change it.

MR. SCOTT BOLTON: So, yeah, mark your calendars or whatever.

MS. BRANDI LITTLE: We'll have a full table.

MR. SCOTT BOLTON: Absolutely. No doubt. Yes. So, October 21st will be the next restoration advisory board meeting.

Next on our agenda is, we have a program or a Range J and K status update, which is why Troy and Jeff are here from -- what is it -- CBI Federal Services?

MR. TROY WINTON: That is correct.

MR. SCOTT BOLTON: Formerly Shaw.

MR. TROY WINTON: Formerly Shaw.

MR. SCOTT BOLTON: Formerly Shaw.

MR. TROY WINTON: Formerly IT. Formerly --

MR. SCOTT BOLTON: Yes.

MR. TROY WINTON: -- take your pick.

MR. SCOTT BOLTON: That's right. So, we will turn it over to them. And they can give you a status update on Ranges J and K of Pelham Range.

MR. TROY WINTON: I guess that's -- well, you guys do move along quickly, don't you?

I brought my own mouse --

MS. CUNNINGHAM: Okay.

MR. TROY WINTON: -- Brenda.

MS. BRENDA CUNNINGHAM: All

right.

MR. TROY WINTON: Okay. As Scott said, my name is Troy Winton. I work with CBI Federal Services. This is my coworker Jeff Tarn. I'm the project manager for some work that we're doing for the Army National Guard Training Center.

These are two sites that have been in the investigative/remediation process now for many years. So, the purpose of this presentation is to essentially -- for some of you, it'll be backtracking. Brandi is very familiar with these sites; others may be.

It's basically to take you back through kind of the history of the site and the remedial action and where we are today and where we're going forward.

Next slide. Okay, these are two ranges, Range J and Range K. These are former Army training sites located on Pelham Range. Pelham Range is a twenty-two thousand acre area out off of Highway 431. You guys have probably seen the signs for it.

Go ahead and pull up that location map. So, there is Calhoun County. Pelham Range is a twenty-two thousand acre area that sits kind of in the southwest part of the county over there.

Ranges J and K. J is kind of in the eastern central portion, right in here, and Range K is up in the northwest corner. Okay, close that.

Also, have an aerial view. There's not a lot to see. Unfortunately, this is not the

greatest quality -- oh, there we go. But, really, what it shows is these sites are located in very heavily wooded, undeveloped areas of Pelham Range, which most of Pelham Range is.

This is J. That little shape actually is -- and we'll get to this in a little bit -- but that's the groundwater plume outline, in relation to the boundary of Pelham, and then this is the plume outline for Range K.

That's where they are. As I said, they're part of the National Guard Training Center. All of Pelham Range is part of the training center, in addition to some areas over here. If you have -- we do.

So, the Army has been responsible for identifying and

cleaning up contamination at these sites. The cleanups follow the CERCLA process. I don't know if you guys are familiar with CERCLA. It's a big acronym. It's a federal law mandating investigation and cleanup of old hazardous waste sites.

There you go right there. It also ensures that the parties responsible pay for these cleanups. And the Army is funding the cleanup at Range J and K.

If you want to pull up that CERCLA process. I won't bore you too bad. This is just generally to show you the process, for those of you who don't know it.

You basically have a pre-remedial process where you

do some basic records review to see if you might have had an activity that might generate waste to be a problem. Then you move forward and you investigate the site as part of generally a site investigation, collect samples to see if there's contamination or a potential issue. Can you roll that up just a little bit?

This process, if you do during the site investigation -- if you encounter contaminants that warrant further study, then you move into remedial investigation, which is a more advanced study, additional sampling, installation of wells, you'll do a risk assessment with your data. But the whole purpose then is to determine the nature and extent of

contamination so that you can work on selecting a remedy to fix the problem. So, that's step three.

This information is communicated to the public in the so-called proposed plan. Are you guys familiar with these terms or is this just too --

Anyway, so that gives the public a chance to weigh in on the selected remedy for a site. A decision is made. And that decision is captured in a decision document or record of decision. It explains the rationale for the remedy, what media, what cleanup goals you're going to follow. It involves, you know, state involvement, EPA involvement at some sites.

The following step then, once you've selected a remedy is to

actually implement the remedy. And finally, once the remedy is implemented, to continue with it and periodically review it to see whether it's still working as it was intended and whether it's still protective for human health and the environment.

This is the step we're on with Range J and K right here. We've gone through all of these. But we'll get to that in a minute.

So, Range J is about a two-acre fenced area out in the eastern central portion of Pelham Range. This is not the greatest map, residually. This is a little bit of a close-up.

There was a fenced area. It's actually still fenced. This just shows some of the topography of the area. Range J is kind of a flat area. Sits up

on a crest there. Groundwater flow is generally to the southwest.

Okay. You can close that.

This was a former chemical agent training and disposal area, involving things such as mustard agent, which was a blister agent, tear gas was a riot control agent. These are loosely called, you know, chemical agents.

Some of these agents were dissolved in solvents, particularly chlorinated solvents like carbon tet, tetrachloride or 1,1,2,2-tetrachloroethane. Benzene might have been a component of some of the chemical agents.

And then, incidental to their training activities, the Army

would also use decontamination agents to eliminate the hazards of the chemical agents. And these were also toxic compounds in their own right and included very often things like bleach, or chlorinated organic solvents, again, like benzene, carbon tetrachloride, chloroform or 1,1,2,2-tetrachloroethane.

Range K is another pretty small area. It's about two acres in the northwestern part of Pelham Range used for a brief period in the early '60's. Do you want to pull up the site map?

MS. CUNNINGHAM: Yes, I do.

MR. TROY WINTON: I hate it when I can't see my cursor.

Here is Range K. It is -- there used to be fence, but the fence is down. There's very

little to show you what's left of Range K. This is reflected. And really, Range J does, but at least the fenced area is still visible.

Again, very remote area. These are just dirt roads out here in the northwest portion of Pelham. Groundwater flow is generally to the south, southwest at Range K.

Similar story here. It was, you know, used for chemical agent training shell tapping. Shell tapping is the process of accessing a military round that contains chemical agent and removing the agent.

These things might have been agents such as mustard gas or sarin, which is a nerve agent or phosgene, which is a choking agent, irritant. But the

purpose would be to remove the agent from the round and then decontaminate the round to get rid of it.

As with Range J, they used decontamination agents. Again, it would be things like bleach solution or chlorinated solvents were popular, carbon tetrachloride, 1,1,2,2-tetrachloroethane. Real similar contaminants at both of these sites.

So, as a result of the investigations that we did over the years, we did a remedial investigation. The issue at these sites is the presence of volatile organic compounds in groundwater.

And these would be things like at Range J, the primary contaminants, contaminants of

concern are benzene, carbon tetrachloride, chloroform and tetrachloroethene, also referred to as PCE. These things all most likely came from the decontamination agents that were used and -- or possibly some chemical agents were composed of things like benzene or chloroform or carbon tet. But the most likely source of these was the actual decontamination agents, not the chemical agents, themselves.

Range K, similar contaminants. Again, a lot of chlorinated solvents, 1,1,2,2-tetrachloroethane, trichloroethene or TCE -- I'm guessing most people have heard of TCE -- vinyl chloride and cis-1,2-dichloroethene. And, again, these almost assuredly

came from the decontamination agents that were used to eliminate the hazards of the chem agents.

Yes, chem agent breakdown products were not detected in site, nor were chemical agents for that matter. Those things usually break down. It's the decon agents that left the mess once the training activities were done.

So, once we studied the problem to determine the nature and extent of contamination, it was apparent that the problem was limited to groundwater at these sites. These solvents, these benzene and other chlorinated compounds ended up in groundwater.

So, the next step was to determine how to address the

problem. And this is done in a feasibility study. It considered these factors here, protectiveness, effectiveness, implementability and cost. And this was per standard EPA guidance on how to do a feasibility study.

These four alternatives were evaluated in the feasibility study, separate feasibility study for each site, although they look very similar. The same alternatives were considered.

Alternative one, no action, that is -- that's the baseline event which EPA suggests for comparison purposes.

Alternative two would be using land use controls and monitored natural attenuation, which means you do periodic samples to see

how things are naturally breaking down.

Alternative three was LUCs, monitored natural attenuation, and also in-situ anaerobic bioremediation -- a big term that we'll talk about in just a little bit more.

And then alternative four was actually groundwater extraction and treatment, a treatment system, pulling it out of the ground, treating it, and then discharging it to surface water, in conjunction with land use controls.

Long term monitoring, also known as periodic sampling, is a part of all of the active alternatives.

All of these -- these alternatives were presented in the proposed plans for these

sites, which again is the -- it's the public input document. It's the document that communicates to the public the Army's intent in this case. Alternative three, which was land use controls, natural attenuation, and in-situ anaerobic bioremediation was presented as the preferred alternative to address the groundwater contamination at these sites.

ADEM was in agreement with that recommendation. They reviewed all these documents, the RI, the FS proposed plan. Of course, they're involved with everything.

The Army solicited input on the proposed plans during a public comment period in 2008, which is required by the

regulations that you solicit input from the public. There were no comments received. So, The national Guard Bureau moved forward and prepared decision documents, which formalizes the selection of the remedy. It goes from being a preferred alternative to a selected remedy. And that is captured in the DD or record of decision. In this case, they were called decision documents. The DDs were signed by NGB in 2009.

A little primer on monitored natural attenuation. It's a passive approach, whereby natural processes tend to degrade contaminants in groundwater under either aerobic or anaerobic conditions. Aerobic meaning with oxygen, anaerobic without oxygen. Over

time, certain compounds will degrade naturally. And then the key part of this is that it's monitored, so you sample periodically to track that degradation to see if it's occurring.

Next slide. Then the other big term is in-situ anaerobic bioremediation. This is a key component of the remedies that were selected for Ranges J and K.

So, to break it down, in-situ means in place. So, we're not removing the groundwater. It's where it sits.

And in this case we use lactose, which is milk sugar. It is mixed with water into a solution, and it is injected, i.e., poured, into existing wells that are in the -- kind of

the center of the plumes. With the intent being to target the bulk of the contamination in the center of the plume.

And what lactose does, for lack of a better phrase, is, it feeds the naturally occurring microorganisms in the subsurface, gives them food, gives them energy so that they can do what they do. And what they will do is break down the contaminants.

So, after we feed them with lactose injections, the bug population, these microorganisms that naturally occur in the subsurface of these sites will use this as food. And incidental to that, they produce hydrogen, which creates favorable conditions for breakdown of the contaminants.

In this case -- and I'm getting this from our bioremediation expert -- I'm not a bioremediation expert -- but the bugs essentially breathe in the contaminants, much like we breathe in air, and give off CO_2, they will breathe in carbon tetrachloride and breathe out chloroform. In other words, carbon tet with one of the chlorines lopped off.

So, there's -- it's a process, this respiration process. Over time, the bugs will sequentially remove chlorines from these chlorinated solvents. And over time, you end up with non-toxic end byproducts, if the cycle goes to completion.

And here is a -- this has a lot of, probably too much technical stuff, but I just

wanted to show you --

SCOTT BOLTON: Pay attention. We'll test on this after -- next time.

MR. TROY WINTON: Yes. This is just to show you kind of the breakdown process, where we start from, kind of the so-called parent product. Here is carbon tetrachloride for example. Here is tetrachloroethene, here is 1,1,2,2-tetrachloroethane, which are some of those contaminants we mentioned in the earlier slides.

And just to point out, we put in next to these -- J means Range J -- so that's a contaminant of Range J, for example, and K would be a Range K contaminant, just so you can see which ones go with which

site.

But generally what you're doing here, you're taking carbon tetrachloride, which has four chlorines on it, and in each successive step you're removing a chlorine. So, you go down and, you know, as this is reduced, you produce chloroform. As you take off another chlorine, you produce a species called Dichloromethane. You take off another one, you end up with Chloromethane. And ultimately, what you're doing, if it all goes to completion, as designed, you end up with harmless end products, such as Methane or Ethane. What these are, are these fully dechlorinated species.

Now, as a result of the process, you know, you can

produce other things that are nasty players. Just because vinyl chloride is down here and it's close to being to the green -- you know, red being bad, green being good -- that's not to imply that vinyl chloride is any less toxic than some of these others. It's just to show you color-wise how you can sequentially dechlorinate these things and make them less toxic compounds.

For example, the -- I mean, the MCL, the drinking water standard for vinyl chloride is actually lower than it is for carbon tetrachloride. So, I'm not meaning to imply that you're getting less toxic necessarily down to this point. Now, when you get to here, of course, now you have really produced

innocuous end product.

But I just wanted to show you kind of the pathways that these go. I mean, generally speaking, you're just pulling chlorines off of these species, as the progress goes.

Next slide. So, we selected a remedy in the decision document. It was alternative three, which included land use controls. LUCs are in place to prevent access to the contaminated groundwater. These would take a few things, such as administrative controls or -- all of Pelham Range is fenced. You can't just go out there. But there are various mechanisms to keep people from accessing these areas. You can't install wells at the sites. The -- you know, the wells that we have are

capped and locked. And these are just various controls to keep access to groundwater prohibited for as long as the remedy is going on, i.e., for as long as there is an issue with it.

In-situ, we first implemented that part of the remedies in September of 2009. We -- that began by doing lactose injections into two wells at Range J. And these two wells -- it's MW10 and MW11 -- they were selected. You can see they're kind of in the middle of the Bullseye there.

The plan was to target this -- kind of this .1 milligram per liter contour, the heart of the target, to address the bulk of the contamination. And so, we injected lactose into

those two wells.

We also did injections at Range K. Now, its plume is a little bit different shape. It's elongated. We selected five wells at K -- 1, 6, 7, 18 and 20, which kind of, you know, span the length of the plume there -- again, to target that higher concentration area in the center of the plume.

We have been conducting sampling as part of these remedies. Right after we did the injections, we did a year of quarterly sampling. That was done at that frequency to make sure that the injections were working as planned. We wanted to get some performance monitoring data early on to make sure it was working as designed. And so we did that in 2010.

So far, we have not needed any additional injections at Range J. That's largely driven by what the contaminant levels are and how much organic carbon or bug food is still left for them to consume and do their job.

So, at J, the levels have remained above the optimal level. So, we've done a single injection at J.

Now, at K, it's a different situation. We see a much greater consumption of carbon there. So, we've done actually additional injections at K in 2011, 2012 and 2013.

And we have done annual sampling at both sites since 2011. So, we did a year of quarterly. And now we've switched to annual sampling to continue monitoring the process.

Next. I put this slide in because the graphs I'm going to show you in a minute, you're going to think, this guy is crazy. Things aren't going down. They're going all over the place.

Well, that gets back to what I was saying about, as things degrade, you produce other things temporarily, as you move down that chart.

So, what you see is, you know, the items at the top of that list, like carbon tet or TeCA, 1,1,2,2, yes, their concentrations start to fall. But, as a result, you also produce other things. You know, as I take carbon tet and take the chlorine off, I'm now producing chloroform.

So, I would expect that some

of these other daughter -- so-called daughter products will actually go up in concentration for awhile. That's expected.

So, that slide went in so that when I show you this, it will make a little more sense. It's like, whoa, wait, things are going everywhere. This doesn't make any sense.

This is our hottest well at Range J. This is MW11. It was one of those two in the Bullseye. And clearly, not everything is trending downward, and so you think, well, it's not working, right?

Well, the things to key on are this one in particular -- this is carbon tetrachloride. This was the original offender, if you will, the parent compound. And you can see -- and this goes

back to -- this would be the RI timeframe, '99, 2000 timeframe. So, back then, when we first started looking at the problem or investigating it, the levels were quite high. That's ten milligrams per liter. That's a pretty high concentration of carbon tet.

And this dotted line is when we did the injections. So, you could call that the start of the remedial action. That's when we started addressing the problem actively.

And it had started to trend downward. After we did the injection, we saw an even greater drop-off for that first quarterly event. Then it kind of bounced around, you know, stayed about the same, and then it has trended down in these

last two annual events.

So, we started at ten, and now -- and this is a logarithmic scale, so it's -- that's not, you know, half as much. We're down to -- I believe carbon tet is under -- it's about three-quarters of a part per million. And this is where we started, so that's good. That's what we wanted to see. It's trending down.

Chloroform, which was the next box on the list right under carbon tet, was trending down pre- -- before we started, but look at -- this is a very dramatic rise in chloroform right after we did the first injection. And this is totally expected. That means this is being dechlorinated and we're producing this. So,

chloroform's concentration shot up and has stayed up through these last few annual events as expected.

The next one in the list would be methylene chloride. It's kind of bounced around a little bit. We started to produce it. It would come after this starts to decline, chloroform. We've produced methylene chloride. Seeing a little bit here and there.

So, it's kind of a muddy picture in the sense that things are -- you know, these are decreasing, these are going up. But the take home is it's working as planned. That's what you expect to see.

The other contaminant at Range J, and this well only -- it's the only well we've seen it

at -- is benzene, which is this light blue line right here. Now, it is not targeted by the lactose injections. It's not a chlorinated VOC. So, it is -- its remedy is monitored natural attenuation. In other words, we can inject all day long, but we're not targeting benzene with that particular aspect of the remedy.

And I don't -- this is -- you know, it looks like it fell here before the RA. That is probably an -- I don't know what that is. But since the RA, benzene levels have -- you know, they're definitely lower than they were back in -- when we first started looking at this site. They've come down under one, but they have -- they've generally bounced around between about a

half a part per million and one, just below.

Next slide. This is a well at Range K, MW20. A lot of stuff going on here, too. This is a very busy figure, I understand.

Similar thing. This is when we started the lactose injections in September of 2009. As I've said, we've done additional injections at Range K, and here they are.

But what you see is, the primary contaminants were 1,1,2,2, which is this blue line here, and TCE was another biggy, and that's this green. So, both of these were trending down, where TCE was already coming down before we started the RA. We do the first injection, and you get just a precipitous drop here after that. That's a

really good sign.

We did see a rebound, so we did another injection in February of 2011. Again, another huge drop. So, clearly, we're getting the activity we want. We're getting the stimulation of the bugs.

And these last two, TCE has not been detected. We're waiting for some data that we just collected earlier this month for the next look at things, but it has not been -- it was not detected in October. So, we've taken TCE at this point, despite a little rebound, to non-detect, which is fantastic.

TeCA, the 1,1,2,2 is a similar thing. It was detected here. Small detection here in the first quarterly event. And we

have not seen TeCA in this particular well, either. So, again, these things are degrading.

Conversely, this is Cis-1,2-Dichloroethene. This is one of those that's lower on the list than TCE for example. So, TCE fell.

DCE has shot up since the injection, again, as expected. That's what you'd expect. As TCE degrades, you'll produce the Dichlorinated version of that compound. And sure enough, it has shot up and stayed up throughout the last several annual events, as we expected.

This is another Di -- DCE compound. There's two isomers of it, two forms of it; one is Cis and one is Trans. Its level has also increased, which is a

good sign.

And we're even starting to -- remember, I pointed out vinyl chloride at the bottom of that list. That was the last thing before we got to the green boxes. Well, we're even starting to produce some vinyl chloride. That lets us know that we're getting, you know, down that list. We're getting to the green boxes or closer to it, anyway. We're not there, yet, but it's moving in the right direction.

Next. So, all of this really is -- has brought us to the point of where we are now at Range J and K and that is, we are performing a five-year review, which is -- CERCLA requires that you review your remedy at least every five years

to make sure it's still working like you had intended originally and how you had it outlined in your decision document. So, since these DDs were signed -- well, I'm getting ahead of myself. I'll wait for that.

Anyway, you have to look at it every five years at sites where you're leaving contamination at levels that would not allow for unlimited uses under CERCLA exposure, i.e., sites where you have contamination, which is what we have here, of course. The remedies are evaluated to determine if they continue to meet the decision document requirements, and more importantly, whether they remain protective of human health and the environment.

So, based on signing the DDs back in 2009 -- here it is 2014, so we're five years down the road -- we have initiated the five-year review process. It takes a little while to do. It's scheduled for completion by September of this year.

Once we're done, the report will be made available in the administrative record, which is in the local information repositories. There is one over here at the McClellan Center Library right here at McClellan. It used to be the Jacksonville State Library. And there is one at the Anniston Calhoun Library in downtown Anniston. So, you can go and review project-related documents. So, these five-year reviews will make their way there once

they're complete.

Next slide. So, going forward, what's going to happen is, we will continue with annual sampling. ADEM has said, we want you to continue with annual sampling, so we will do that.

The clean-up levels at Range J and K are actually EPA's maximum contaminant levels or MCLs for drinking water. Those were selected way back in the feasibility study just -- even though it's not likely to occur now or in the foreseeable future, but there is -- because groundwater could potentially serve as a drinking water source some day in the future, MCLs were selected as the cleanup goals.

So, those are values that are published by ADEM and EPA. It

is the highest level of contaminant that's allowed in drinking water.

That's true for all of our COCs, except for one, the 1,1,2,2-tetrachloroethane does not have an MCL. So, we had to come up with a suitable replacement, a suitable value. And its cleanup value was a risk-based calculated value.

In addition to the annual sampling, until we meet our cleanup goals, ADEM also has -- requires that we show three consecutive years of data below those cleanup goals. So, we don't just get there and quit. There's still another period of sampling, three years, that will go on where you have to demonstrate that you're consistently below the

groundwater standards.

Additional lactose injections may be indicated at these sites. That's driven by the data that we collect annually, as to whether an injection is warranted or not warranted. And then five-year reviews will continue until the remedy is complete.

So, I think that's my last slide. Any questions?

MS. ALISON ZEYTOONIAN: Those charts that you showed us, are the majority of those contaminants above or below the MCL?

MR. TROY WINTON: Well, the majority are -- well, depends on the site. Like at Range J, carbon tetrachloride is still well above MCL. Benzene is still well above its MCL.

Just to give you a frame of reference, the MCL for carbon tetrachloride and benzene are both five parts per million. Benzene has been running about five hundred parts per million, just to give you an order of -- carbon tet is the same thing. It's about seven hundred and fifty, and the value is five.

So, we've made great strides. We're a lot lower than we used to be, but still, yes, there are a couple of contaminants, particularly at Range J, that are still well above the MCL.

K looks better. There are still some stragglers in a couple wells that are above the screening criteria.

But, no, not every single thing on there is above. That's just a plot of all the data.

And again, it's a logarithmic scale, so it does -- to make the data plot, you know, a usable way.

But, no, just because it's on there doesn't mean it's above. It's down to just a couple of key COCs that are still above the MCLs, and not in every well, either.

MS. SARAH CLARDY: How do you determine the amount of lactose needed?

MR. TROY WINTON: I go downstairs and I talk to Dirk, who is the bioremediation expert. That's literally what we do.

He -- we have people that are experts in this.

MS. SARAH CLARDY: Uh-huh.

MR. TROY WINTON: They look at the data. They look, you know,

not just for the contaminants -- we collect other data that tells them the PH in the water, the oxidation reduction potential, the iron concentrate, a lot of data that they look at to determine --

MS. SARAH CLARDY: How much is needed?

MR. TROY WINTON: -- how much is needed. And it has to do with the size of the plume --

MS. SARAH CLARDY: Sure.

MR. TROY WINTON: -- and how many points you're putting it in and what area you're trying to influence.

We have used, these last few injections, about -- this stuff comes in a powder. It just comes in fifty pound bags. And we mix it with water. We've used about .66 pounds per gallon

of water for each well. So, we use about two thousand gallons. That puts about -- just short of about fourteen hundred pounds of lactose into the wells at Range K.

MS. SARAH CLARDY: Sure.

MR. TROY WINTON: Now, J was a little different. It's been a while since we've been out there. We put a -- and, again, it was driven by the data, the concentration, you know, the particulars. We put in a little greater mass into the Range J wells, I think.

MS. SARAH CLARDY: Have you noticed, like, seasonality of the injections affecting the results, at all? Or is it too far --

MR. TROY WINTON: In terms of seasonal --

MS. SARAH CLARDY: -- underground? So that, like, your summer injections are producing, say, more microorganisms than a winter?

MR. TROY WINTON: I don't think so.

MR. JEFFREY TARN: That's a good question. I don't know.

MR. TROY WINTON: I don't think so. We've seen good response, regardless.

I'm trying to think -- we injected in September and then we did one in February. I think we see good response generally, regardless --

MS. SARAH CLARDY: Regardless.

MR. TROY WINTON: -- of time of the year.

You saw in the graph, some of those were pretty nice -- pretty striking after the injection --

MS. SARAH CLARDY: Uh-huh.

MR. TROY WINTON: -- you know, things -- the thing that was supposed to fall was falling and the thing that was supposed to increase, increased, so --

MR. SCOTT BOLTON: Any other questions?

MR. TROY WINTON: Everybody is ready to go eat dinner.

MR. SCOTT BOLTON: If we don't have any other questions, I reckon we will move on.

MR. TROY WINTON: All right.

MR. SCOTT BOLTON: Thank you, Troy.

MR. TROY WINTON: Yes. Sure.

MR. SCOTT BOLTON: Appreciate that.

This brings us to new business. So, one of the things we need to do is we need to have a vote to affirm the ascension

of Phillip to be the community co-chair, effective instantly. So, do I have a motion to that --

MR. ED TURNER: So moved.

MR. SCOTT BOLTON: We have a motion. How about a second?

MR. GENE HOWARD: Second.

MR. SCOTT BOLTON: Oh, come on, John, you're --

MR. GENE HOWARD: Second.

MR. SCOTT BOLTON: Because Phillip is paying attention. All right.

MR. JOHN HALL: Congratulations, Phillip.

MR. SCOTT BOLTON: All in favor of Phillip ascending to the community co-chair position say aye. Any opposed?

MR. PHILLIP BURGETT: I --

MR. SCOTT BOLTON: Congratulations, Phillip, you're

it.

MR. JOHN HALL: Your opposition doesn't count, I hate to tell you that.

MR. SCOTT BOLTON: Now, generally speaking, we would also need to have an election of a new vice-chair person. We just really don't have that many people here. But if somebody has a nomination for someone to be the new vice-chair, could be an opportunity to pay back somebody who's not here. We could elect them in absentia or something. That's an old Army tradition, who's not here, he gets it, you know, it will be his job.

Or, if you wish, we could just table that until another time.

MR. ED TURNER: As much as I'd love to nominate somebody that's

not here, I think it would be a good idea to table that.

MR. SCOTT BOLTON: So, we will go ahead, and unless there is any opposition, we will go ahead and table the election of a new vice-chair person, and we'll move on to agency reports.

Brandi, I believe you are first up.

MS. BRANDI LITTLE: All right. In your packet is -- I think it's six pages this time of all the documents that we've received over the last six months and a list of all the documents that we have reviewed over the last six months.

And I guess some of the ones that are worth noting are -- I believe we've done four records of decision for the Army sites.

MS. LISA HOLSTEIN: Three.

MS. BRANDI LITTLE: Well, we've had four, and we're trying to get all four of them done.

MR. SCOTT BOLTON: We have been frantically trying to get ahold of your counterpart.

MS. BRANDI LITTLE: Yes. I got it.

On the MDA side, we have modified our cleanup agreement again in a long, arduous process. And I believe at the end you'll see we've had, I guess, about three different meetings since the last time we've met, one of them about the five-year review for National Guard. We had a site visit. And that's about it.

MR. SCOTT BOLTON: And I guess we've had the National Guard update. I'm assuming, Karen, that was -- do you want to add

anything or just leave it at --

MS. KAREN PINSON: No.

MR. SCOTT BOLTON: -- what they did with the program?

MS. KAREN PINSON: That's it.

MR. SCOTT BOLTON: Okay. Thank you.

Gerald?

MR. GERALD HARDY: My report's also attached -- I'm up and down still, so -- again, we sort of mirror -- I would point out that with the approval of the modifications -- mod four of the cleanup agreement, that allowed final approval of a lot of documents we've had in hand, so that is -- once we go through the public participation process of the cleanup agreement.

So, that's why both ADEM and the MDA's report shows a lot of documents being completed. And

that's because they were all rolled up into the cleanup agreement. Final approval. Prior to that, it would always be pending ADEM comments.

I guess a couple things I'd like to, I guess, highlight is that we're in the midst of trying to finish all the fieldwork on the unexploded ordnance cleanup. We finished -- if any of y'all were familiar with any of the MRSs, we finished the fieldwork in MRS-5.

We, as usual, saved the worst for last. So, people that may be familiar or heard before, Range 16 or -- it's in MRS9, that work is scheduled to begin on the 7.6 acres of the worst part of that this summer, maybe in July.

We will end up having to do a one-foot clearance. The optimization, optimized method is to dig and sift, so we'll actually excavate the top one foot of soil. Sift the munitions debris and munitions out of it, and replace the soil back in on top of the seven and a half acres. And that will require, of course, all the vegetation to be removed.

And so, we're in the process of that. We will -- unlike some of the other work out here, when we get to that phase, we'll be working seven days a week, so the contractor and Matrix will have two teams working.

Our goal is to finish the fieldwork on Range 16 by September 30th, this fiscal year. Then comes all the report

preparation and all that.

So, you know, one of the things that you may not -- may or may not know, in order to do sort of excavation and sifting is you have to armor up all the heavy equipment, the bulldozers, the pans, the back -- the trackhoes, all those have to be armored up to sustain a certain level of explosion to protect the operator. So, that's not a cheap or easy job to do, is to -- because most people don't sell heavy equipment armored up.

MR. SCOTT BOLTON: Yeah.

MR. GERALD HARDY: So, we'll be going through that. So, like I said, that will be pretty much a big milestone when we finish all the fieldwork on unexploded ordnance on the MDA portion.

MR. SCOTT BOLTON: Thank you.

MR. GERALD HARDY: I don't think I have anything else. That was the main --

MR. SCOTT BOLTON: For our side, the Army, the more direct Army cleanup, I guess, which is being conducted in the wildlife refuge that Sarah manages, we have a couple of actions that are going on. As we've talked about before, for some large areas out there, we've done a number of different things. We've done interim removal actions.

And we're also still in -- I guess we would still call ourselves in the work-plan phase, if you would or stage of the remedial investigation feasibility study, where we're going to -- that we should be hitting the field in the next

couple of months. That should take about a six-month effort. And our goal there is to more definitively define the areas that need munitions cleanups.

The most significant activity that we've got, moving forward right now, is the sites that you just heard us talking about with Brandi and that are listed here under our section under IRP, Bains Gap Road ranges, 81 millimeter mortar range, training area 24 Alpha, and the Choccolocco corridor ranges, which are the state property east of the ridge.

Those sites we'd already conducted munitions removal actions on. And so, what we're now doing -- they were -- there were small arms ranges there, as well. So, I know for some

people you look at 81 millimeter mortar range, and it's not an intuitive, you go, what do you mean you're doing a lead cleanup or a metals cleanup from bullets when it was a mortar range.

Well, we'd already taken care of the munitions, the mortar explosive aspect of it. And so, as y'all are probably aware, you know, sometimes you would overlay these ranges. You know, they used them in some years, and then twenty years later they would come use the same area for a firing range for a small arms range.

So, these four areas now are former small arms ranges. Basically, the contamination is bullets related and related metals, so, you know, lead being the primary one, copper, zinc,

antimony, the usual culprits that you'll see with bullets.

They're fairly -- the excavation volumes, I don't recall what they are off the top of my head, but there are, you know, fairly large volumes. So, in terms of the magnitude of the project, it will be fairly large. In terms of the complexity of the technical complexity, it's not terribly complex, although where -- we do have a couple of spots, such as Bains Gap, where we're going to be having to work some stream diversion and some things like that. So, it will get a little bit artful there. But by and large, it's a pretty straightforward of you remove the lead-contaminated soil, you stabilize it, and you take it

off offsite or whatever for disposal, once it's been stabilized.

We're in the -- like I say, we're in the early stages of that. We've had -- we've got the records of decision, which are kind of the thing that approves the selected remedies, as we've talked about earlier.

We have various ones in various stages. We're hoping to do the actual request for proposal on the contracting action in the next few weeks, month. Hopefully, have -- actually have our site visit in the next few weeks, within the next month. And we would hope to actually be able to award the contract for this action somewhere in mid to late summer. It'll probably end up

being -- my assumption is it will probably be a multi-year contract. You know, in other words, the work will take place over a couple of years. I mean, in theory, if you were to bring in enough big enough equipment, you could do it fast, but I think the reality of life is that it'll be -- and it does take coordination with -- we've already -- I know Sarah has already started doing preparation in the refuge here on post. And we also coordinate with the state forestry commission. And so, there's some actions they want to take as we start. I think there's going to be some timber harvesting that they're going to do. Make sure some roads are cleared, some other things.

But that's the most significant action. Those are the ones that we've got going right now that are the most significant.

And then, by the time -- since the footprint, the UXO footprint has already been cleared for these areas, it won't impact the RI/FS, per se, so we can run those, you know, concurrently. And so, by this time next year, we should have the data analysis and everything else in the remedial investigation, have a pretty good handle on exactly what -- where the remaining munitions cleanups are.

So, things are moving along at Fort McClellan, which is kind of typical of these projects. It seems like you spend a lot of time in the study phases, if you

will, or the investigation phases. And then, when you actually get into the field and start doing the actual implementation of the remedy, sometimes it's quicker.

When you're starting to deal with groundwater, as you've just heard, obviously, it can get a little bit longer. And one of our remedies does have a groundwater component at 24 Alpha. So, there will be some elements of it to go on for many, many years.

That's where we're at with our stuff. Do we have any -- anybody have any questions?

Does anybody have any ideas, program ideas or things that you would like to see addressed at the RAB? If so, obviously, we have six months to -- so, you

can think on it --

MR. GENE HOWARD: To get a quorum together.

MR. SCOTT BOLTON: For the next five months, at least, think on it, and let us know, let Brenda know or somebody if there are some things that you would like addressed that seem to be within the scope and purview of the RAB -- sometimes we get a little bit out of it, but that's okay, as well -- and let us know, and we'll certainly try to get the appropriate people and presentations and so on in.

You know, I do really appreciate those of you that showed up, you know. And unfortunately, sometimes this happens; in the early phases of these kind of organizations like

this RAB, you know, everybody is very interested and excited and so on. And after you get done studying and you've kind of figured out everything, it's kind of anticlimactic, I guess, so -- but I do really appreciate people showing up and so --

MR. GENE HOWARD: Well, you do know --

MR. PHILLIP BURGETT: And on the phone.

MR. GENE HOWARD: -- that this --

MR. PHILLIP BURGETT: And on the phone.

MR. GENE HOWARD: -- this looks good on our --

MR. SCOTT BOLTON: And on the phone. And on the phone, yes, Phillip.

MR. GENE HOWARD: This looks good on our resumé.

MR. SCOTT BOLTON: That's right. Absolutely. Yes, take credit for it, certainly. Yeah, I mean, you know, think of all the good things. You can --

MR. GENE HOWARD: Yeah.

MR. SCOTT BOLTON: You can look at somebody across the table now and say, well, you know --

MR. GENE HOWARD: Back --

MR. SCOTT BOLTON: -- when we were talking about in-situ anaerobic bioremediation, you know --

MR. GENE HOWARD: I was sitting right by the guy.

MR. SCOTT BOLTON: -- I was sitting right there, and we had a discussion about it. That's what we did Monday night, so --

MR. TROY WINTON: I'm glad you guys are here, too, because when

I did the public comment presentation for these, nobody showed up.

MR. SCOTT BOLTON: Oh, yeah. We've --

MR. TROY WINTON: I sat there and talked to the Army and other Shaw people. So, thank you --

MR. SCOTT BOLTON: Yes.

MR. TROY WINTON: -- for showing up for my presentation.

MR. SCOTT BOLTON: We've been there, done that. Yes. It's -- it happens.

Do we have any questions or comments from the audience, who outnumber everybody on the RAB? If not, do we have a motion to adjourn?

MR. GENE HOWARD: Motion.

MR. JOHN HALL: Second.

MR. SCOTT BOLTON: All right. I assume we're adjourned. All

in favor?

(Whereupon, the RAB meeting was concluded at 6:13 p.m.)

C E R T I F I C A T E

STATE OF ALABAMA)
CALHOUN COUNTY)

I, SAMANTHA E. NOBLE, Certified Court Reporter and Notary Public in and for The State of Alabama at Large, duly commissioned and qualified, HEREBY CERTIFY that this proceeding was taken before me, then was by me reduced to shorthand, afterwards transcribed upon a computer, and that the foregoing is a true and correct transcript of the proceeding to the best of my ability.

I FURTHER CERTIFY this proceeding was taken at the time and place as noted and was concluded without adjournment.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal at Anniston, Alabama, on this the 6th day June 2014.

_____

SAMANTHA E. NOBLE (ACCR 232)
Notary Public in and for
Alabama at Large

MY COMMISSION EXPIRES: 11-6-2017.