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# MEETING MINUTES Restoration Advisory Board August 16, 2001 April House

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NOTE: These minutes were appr	oved
at the Free market 2002 RAB	<u> </u>
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The Restoration Advisory Board (RAB) meeting was held at 6:00 p.m. n August 16, 2001 at April House, 2222 Lloyd Street, Memphis Depot\_\_\_\_\_ Business Park, Memphis, Tennessee. The attendance list is attached.

#### 1 WELCOME AND INTRODUCTION

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3	MR. WILLIAMS.	First of all, I would like to say good afternoon and welcome to the August
4		meeting of the Restoration Advisory Board. I hope that everyone had a
5		nice month last month as we get into the new month here At this time we
6		don't have enough members exactly to have a quorum, but we do not have
7		anything to vote on tonight. If so, we will hold that until we get enough
8		people to do that
9		
10	REVIEW AND AP	PROVE AUGUST AGENDA
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12	MR. WILLIAMS:	Right in front of you is an agenda for tonight's meeting. I would just like
13		for everybody to look over it and see if there is anything you would like to
14		add, change or exclude from the minutes I mean from the agenda. I'm
15		sorry. I would like to get a motion to approve the agenda.
16	MR. TRUITT:	Ulysses Truitt. So moved.
17	MR. WILLIAMS:	Can I have a second?
18	MR. BRAYON:	Second. Brayon.
19	MR. WILLIAMS:	All right, all in favor? (Brief pause.)
20	MR. WILLIAMS:	Opposed? (Brief pause.)
<b>?</b> 1	MR. WILLIAMS:	Abstained? (Brief pause.)
22	MR. WILLIAMS:	All right, so the agenda goes as printed.

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#### 2 **OLD BUSINESS - COMMUNITY RAB HOUSEKEEPING ISSUES** 3 MR WILLIAMS 4 Okay, just something I wanted to bring up for a quick second here under 5 Housekeeping -- let's see -- yeah, RAB Housekeeping Issues Certain things came up on the RAB Housekeeping Issues last meeting, and those 6 7 were not the things to be discussed at that meeting. Only issues about 8 work pertaining to the environmental cleanup. Other things came up 9 besides those issues there, and we want to make sure that we keep the issues to what's pertaining to the meeting; all right? -----10 11 12 Ms. Bradshaw, Ms. Mitchell and Mr. Tyler called and said that they 13 wouldn't be able to attend the meeting tonight. So I want that to be a part of the record. 14 15 Okay and another thing I wanted to bring up, Ms Peters was recognized at 16 17 her church recently. A copy of the article has been placed with your packet 18 in front of you, and we just wanted everybody to see one of our RAB 19 members that's being recognized for something that's well done. So I would like for everybody to applaud her on that recognition 20 21 22 Right now we're at Housekeeping Issues. Does anyone have anything that 23 they would like to discuss? (Brief pause.) 24 25 MR. WILLIAMS: Well, if not, we'll move on to New Business. MR. DEBACK: 26 I don't know if you call this Housekeeping, but it is Old Business. I'll give 27 you the status of some issues that we have open. Concerning the railroad 28 tracks, I know it's not an environmental issue, but it is an issue that's come 29 up at the RAB meeting. The contract's been met. We hope that by the end 30 of this month or the first part of September you will see the people out 31 there working to remove the railroad tracks on Dunn Road. 32

۱		I want to remind the members of the RAB and the community at large that
2		there is one set of tracks, and that is the eastern most set of tracks, that
3		does not belong to the Depot. We are unable to do anything with those
4		rails It's down and I can't remember the name of the road, but it's
5		Custer It's the tracks that come across Dunn Road, like Custer Street We
6		will not be removing those tracks We will only be removing those up
7		between Hays Road and Perry.
8		
9	MR. DEBACK:	The status of the Land Use Control Assurance Plan, it's currently back.
10		It's been back to the Army, and now it's back at the EPA awaiting
11		comment for the latest revision.
12	·	
13		The status of the Record of Decision for the Main Installation, that also is
14		being held at EPA pending final decision on the Land Use Proaction Plan.
15		
16		Mr Tyler asked at the last meeting for a name to inquire about the access
· 17		on the web site of the documents. I was instructed that I can I have a
18		name that I can give him. However, I don't think it was made clear that the
19		request that he made had been staffed all the way to the Department of
20		Defense. It was not an internal DDC (Defense Distribution Center) or
21		DLA (Defense Logistics Agency) decision. That decision had been
22		staffed all the way up through the office of the Secretary of Defense.
23		So with that, I will leave it open to be reflected in the minutes that we do
24		have a name that Mr. Tyler can call for further information, but I would.
25		also like everybody to be aware that this request of Mr. Tyler was staffed.
26		It was not made clear in response to him that it was staffed all the way to
27		the Department of Defense.
28		
29		Also, I would like to announce that for those of you who have been
30		anxiously awaiting this news, Hess Environmental Services has been
31		awarded the TAPP Grant. Alma Moore from Frontline will be contacting
32		the TAPP sub-committee members to determine which documents they
33		would like to have HES take a look at If I can just embarrass her, I would

i		introduce Ms. Connie Hess, the lady with HES Contractors That's all we
2		have for Old Business.
3	MR WILLIAMS:	I didn't say at first that we have the minutes from the last meeting Seeing
4		that we haven't had the time to read them or anything take time out and
5		read them We'll try to approve them at the September meeting, all right?
6		
7	NEW BUSINESS -	GROUNDWATER UPDATE
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9	MR. WILLIAMS:	Okay, so we will move along with the agenda. Groundwater cleanup, Mr.
10		Steve Offner, program manager for CH2M Hill
11		(Brief pause.)
12	MR. DEBACK:	Before Steve gets started, I just want to let everybody know that he's going
13		to give two presentations. You're going to hear the presentation that we
14		vainly attempted to show you last month. In addition to that, he's going to
15		give a short presentation on the Soil Vapor Extraction System Pilot Test
16		that we're going to do up at Dunn Field.
17	MR. OFFNER:	All right, I think everybody can hear me. Good to see everybody again. I
<b>(18</b>		know I did this last month under different circumstances. So let's see if
19		we can get it right this time. I don't hear any thunder or any lightning. So
20		I think we're in pretty good shape yet It's pretty good out.
21		Again, this is an update on the groundwater conditions on the Memphis
22		Depot, both on the Main Installation and on the Dunn Field portions of the
23		Depot.
24		
25		"The Presentation Overview." Again, we're going to talk about the
26		monitoring wells, the network of groundwater monitoring wells that are
27		present on the Depot and the areas surrounding the Depot. We're going to
28		talk about groundwater flow directions. "Groundwater Flow Directions."
29		Primarily we're speaking of the shallow groundwater, that groundwater
30		that's found about 80 to 100 feet below land surface. We're going to talk
31		about an update on the geological conditions that we're seeing at the
32		Depot as part of the Remedial Investigation (RI). We're going to discuss
33		the findings of both the Main Installation and groundwater on Dunn Field,

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1		and we're going to look at the next steps Where are the next steps taking
2		us - what's the cleanup going to be for the Main Installation and where do
٦		we stand with Dunn Field?
4		
5		First of all, I'm going to talk about the network of groundwater monitoring
.6		wells that are on the Depot There are 96 monitoring wells present at the
7		Depot and the surrounding area. Twenty-nine of those wells are located on
8		the Main Installation, within the boundary of the Main Installation.
9		Thirty-two wells are located on Dunn Field, and thirty-five of the wells are
10		located off site in the adjacent community outside the boundary of the
11		Depot.
12		
13	MR. OFFNER:	A total of 92 wells have been used to gather groundwater sampling data as
14		part of the RI sampling events from 1996 through 2001. There's a
15		difference of four wells. If you remember, two of the wells have recently
16		been installed on Dunn Field and haven't been sampled yet, but will be
• 17		sampled. And there are two wells located on the Main Installation that are
18		dry and unable to be sampled. So that leaves us with 92 of 96 wells that
19		we've sampled
20		
21		I'll show you a figure up here real quickly if it works, of where the wells
22		are located. It's a little difficult. Real quick, again, this is the Main
23		Installation. This is north. This is the northern extension of the Depot and
24		Dunn Field (indicating). As we were talking about, this is the boundary,
25		and the areas in the black here are the groundwater monitoring wells
26		(indicating). This is the network of wells on the Main Installation and off
27		site of the Main Installation, both on the southwest corners and down here
28		off the southeast corner.
29		
30		Dunn Field, the majority of the wells are located along the western
31		boundary of Dunn Field, and you can see there are a number of wells
32		located to the west of Dunn Field in the shallow groundwater. Most of
33		these wells are located in the shallow groundwater.

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1 2 As we were saying before, 92 of the 96 wells have been sampled since 3 1996 These sampling events occurred -- I believe one major sampling 4 event was done in 1996. There were two in 1997, and there were two in 5 1998, and then there have been ongoing groundwater sampling events as part of the operation and maintenance of the groundwater extraction 6 7 system at Dunn Field. 8 9 All of these -- all of the results from the samples are presented in a number MR. OFFNER: 10 of monitoring reports. There are, I believe, four independent groundwater 11 monitoring reports and a number of quarterly and annual O&M 12 (Operations and Maintenance) reports that are located in the files. In 13 addition, in January 2000, the Main Installation RI Report documents all the groundwater data for the Main Installation. Along with that, there's 14 data contained in the Groundwater Feasibility Studies for the Main 15 16 Installation, which came out in July of 2000. All of the groundwater data associated with Dunn Field will be summarized and explained in detail in 17 18 the upcoming RI report that's expected out in the fall of 2001. All of this 19 data and the upcoming data will be located in the four Information 20 Repositories in the Depot community. 21 I want to talk about groundwater flow right now. And, again, we're 22 talking about primarily this shallow groundwater, the water that's located 23 24 about 80 to 100 feet below land surface. First of all, let me talk about the 25 Main Installation. There are three primary groundwater flow directions 26 for the Main Installation in the shallow groundwater. These lines in blue, 27 which we couldn't see last time, but I think we can see it now, those are 28 contour lines. Those are lines of equal elevation of the groundwater, and

flow is perpendicular or at 90 degrees to those contour lines.

On the eastern part of the Main Installation flow is primarily from the northeast to the southwest. On the south – on the western parts, most of the southwestern portion of the Main Installation, flow is from the

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southwest to northeast. On the north central portion of the MI, the Main Installation, flow is primarily to the south

Now, let me show you Dunn Field to the north The primary flow component -- the flow direction on Dunn Field is basically from the east the west. Now, there are some variations of flow components when you look at it locally, but from a regional standpoint, flow starts over here and goes in this direction (indicating)

MR. OFFNER: Now I want to give you an update on the geologic conditions that we're ------10 seeing on the Memphis Depot. When we talk about geologic conditions, 11 what we're explaining about we - through the Remedial Investigation on 12 both parts of the Depot, we have identified layers of sand and silt and clay 13 and the groundwater in the earth beneath the both Main Installation and 14 15 the Depot. Those are the geologic conditions. Those are the aspects that control groundwater, and of those aspects, one of the primary areas of 16 importance for us is the clay layer that we're seeing beneath the shallow 17 groundwater, the one that's located about 80 to 100 feet. We're seeing a 18 19 thick and impermeable clay layer, and this clay layer is providing us 20 protection from flow from the upper aquifers into the intermediate deeper aquifers. That is of primary importance for us. That's -- the update. We 21 have done additional drilling and sampling in there to better define where 22 23 that clay is and how it interacts with the surficial aquifer and the deeper aquifers. 24

> I want to show you a quick figure here that will summarize this for you. And I don't know -- we tried to show this the last meeting, but it didn't come out very well on the graphics, but this is the Regional Conceptual Model. What it's showing here is this is the Memphis Depot, and the areas in blue here, those are the volatile organic compounds or the VOCs that we're seeing in the shallow aquifer (indicating).

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For perspective, this is the Allen Well Field over here This is the source for the drinking water for MLGW in this area, and the black line represents a line -- and this is to scale This is about a 15-mile line of what we call a cross section If we take that line and flip it up on its side, it gives you this box right here (indicating), and what that's showing you is basically the geologic conditions, the soil and the groundwater that we're seeing from across the Depot over to the Allen Well Field

MR. OFFNER: What we're showing here, again, are the upper clays -- I'm sorry -- the 9 10 upper sands and gravels; of which the shallow aquifer is contained, again; at 80 to 100 feet below ground surface. Below that we're showing the clay 11 layer which is a primary barrier for downward flow of groundwater. That 12 is that area in here (indicating). And below that at about 150 feet, we see 13 sand and clay or intermediate groundwater zone. It's kind of intermittent 14 clays and sands through this area, and below that we see the Memphis 15 Sand Aquifer. What we're showing here is these are the wells that are 16 located right here (indicating) This is found at about 300 feet below 17 18 ground surface, and the intake from these wells is about 500 feet below 19 land surface. So, that's the cross section of -- the geologic cross section through kind of a regional prospective here 20

> What's important to show here is that these areas of VOCs that we have here, volatile organic compounds, are the solvents that we see, both on the Main Installation and Dunn Field, have not impacted the wells of the Allen Well Field. The eastern most wells -- and we talked about this during the last meeting -- have had no detection of volatile organic compounds, these compounds that we have from the shallow aquifer. So that's real important to know. Again, the shallow aquifer, the one we're seeing here, is not a source of drinking water in the area.

> > One thing I do want to point out is this area right in here (indicating). There are three areas that we've identified in the area of the Depot where there is a connection from the surficial aquifer into the lower aquifer and

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9 64i) the intermediate aquifer. Basically, in these connections the clay is not l 2 present What we're seeing in these areas with relationship to the shallow 3 aquifer to the lower aquifers is an area of low flow or limited flow boundaries at the edges of these connections 4 5 MR OFFNER -6 And there's another graphic, a geologic cross section that I'm going to 7 show you. But what's important there is we're seeing a limited boundary here, and the groundwater quality that we've -- from all of the testing 8 9 we've done here -- shows that the quality of the groundwater in the deeper and intermediate aquifer is within safe drinking water standards. 10 Now. I want to show you that one cross-section here, if I can, that better 11 explains. Let me zoom in on it. Again, this is coming out in the Remedial 12 13 Investigation report that's coming out in draft for review shortly. 14 This is, again, Dunn Field, the Main Installation, and we're showing a 15 16 geologic cross section like that other drawing I showed up on -- it's kind of a line showing up on its side Starting on the north side of Dunn Field 17 £ 18 down to the Main Installation, north to south, again, like that other 19 drawing, that conceptual drawing I just showed. We show the silts, the 20 loess, the sandy clays and the sand and gravels above this thick clay layer. 21 22 Here we see the shallow groundwater on the clay layer. This is one of the 23 windows or connections that we see down into the lower intermediate 24 aquifer. We see three of those. One of them is located on the north 25 central part of the Main Installation. One of them is out west of Dunn Field, and one of them is northwest of Dunn Field. And, as you can see, } 26 27 the groundwater, that level there, that's the level of groundwater or the 28 thickness the shallow groundwater pinches out of this location in here. 29 In addition, from the north coming through the south, from here up to here 30 (indicating). The groundwater there also pinches out and it's a fairly 31 unique geology. We have done a lot of additional borings and investigation in these areas. The important thing to note here is the 32

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	1		groundwater quality is within safe drinking water standards in this
	2		intermediate aquifer.
	3	MR MORRISON	Excuse me
	4	MR OFFNER	Yes
	5	MR MORRISON	Would you go back to that one slide?
	.6	MR OFFNER	I can Let me see if I can bring that up, Jim I'm sorry
	7	MR MORRISON:	Would you note on here (inaudible). Could you note up on the drawing
	8		where we have detected the contamination along that north/south line in
	9		relationship to the window that we're seeing over to the left of the slide?
	10	MR. OFFNER:	Okay, where we've detected contamination-in-the shallow aquifer?
	11	MR, MORRISON:	Yes.
	12	MR. OFFNER:	Okay, well, this is let me start from a plain view first. This area, again,
	13		represents from here (indicating), along the western side of Dunn Field,
	14		along where the groundwater extraction system is, down through this
	15		connection, down through MW62, which is right here on the Main
	16		Installation (indicating).
	17		
	18		If you look here, the area of shallow VOCs in the shallow groundwater is
	19		an area that extends out through here and down and along through there
	20		(indicating) I have a graph later in the presentation that shows that. But,
	21		Jim, what that shows is it picks up primarily, oh, I think about in here and
	22		ends down through here (indicating). Now, this is you are looking at a
	23		cross section here. Flow is going this way for the most part (indicating).
	24		So, groundwater flow is you're is going that way for the most part in
	25		this picture.
	26	MR. MORRISON:	The one thing that I was wanting to let everyone know is that where the
	27		contamination is located we have an extremely thick, confining unit under
	28		that groundwater there. So the likelihood of the area beneath where the
	29		majority of the contamination is will not get down to the Memphis Sand is
	30		what it's looking like to us.
	31	MR. OFFNER:	If I can add one thing to that, these areas here are areas of continued
3	32		interest and priority for any groundwater remedy that goes forward, both
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1		from a monitoring standpoint and from an active remediation standpoint
2	MD DD AVON	So one of our goals is to make sure this area remains as it is
3	MR BRAYON.	May I ask a question?
+	MR OFFNER	Yes
5	MK BRAYON	Brayon, B-r-a-y-o-n In that particular area, what is the depth of that area,
6		and how close is it to the area of the drinking water?
7	MR. OFFNER:	Okay, this is at an elevation of about 300 feet here. This is MW34
8		(indicating). Groundwater is about an elevation of 150 feet.
9	MR. BRAYON	And those depressions right there? (indicating)
10	MR. OFFNER:	That's about 150 feet below land surface there.
11	MR. BRAYON:	And 300 feet
12	MR. OFFNER:	This is the Allen Well Field. Their intake is about 500 feet. We see the
13		Memphis Sand formation at about 300 feet.
14	MR BRAYON	So that's what's under that area there?
15	MR. OFFNER:	There is a series of clays and sands
16	MR. BRAYON.	That protects it from getting any further?
2 17	MR. OFFNER:	Well, the interesting thing here and the important thing to note is that the
		groundwater quality in this area is within the safe drinking water
19		standards. But we do have a series of clays. It's a tortuous path
20		downward, a lot of overlapping clays, and there's sands and silts and other
21		fine clays and silts that are of less permeable nature. But it kind of
22		interweaves. It's overlapping. So it's not so much of this the thick,
23		dense clay that we see as a fairly competent unit under most of Dunn
24		Field. But it's an interlinking, inter-fingering set of clays and sands and
25		silts.
26	MR. BRAYON:	But not as impermeable or more permeable than the gray area on the
27	right?	
28	MR. OFFNER:	Well, various units of it are similar to that, but it's not one continuous unit
29		as you see here (indicating). It's areas of impermeability that are the less
30		permeable nature of this clay, as clay is, but it's not as thick and not as
31		continuous.
32	MR. BALLARD:	I do want to note I kind of hear your concern, the answer part of the
<b>3</b> 3		answer to your question That intermediate aquifer has been shown to be

1		know, pumping results. But, again, to emphasize what Steve was saying,
2		in the areas that we have wells in the intermediate aquifer, they're showing
3		that the water quality is good So it indicated that the contaminants aren't
4		coming getting down into there
5	MR BRAYON	That's good presently, but you know. I'm thinking about the future
6	MR OFFNER	And, again, that's where this is as far as any of your cleanup remedies,
7		we need to be very we need to concentrate on these areas They need to
8		be part of our long-term monitoring. They need to be incorporated,
9		obviously, into the remedial actions.
10	MR. WILLIAMS:	I have a question here. My first question is: Have we found the source of
11		the contamination, where it started? Have we found that yet? We've been
12	·	how long have we been doing this, ever since 1989, 1990? So I'm at the
13		point now, have we found the source? Which way is it going? Is it
14		coming from here? And what was the is it serious enough or have we
15		contained where it was or what? Where are we at with it? You know, just
16		put it in laymen's terms.
17	MR OFFNER:	I've got you. Okay, let me start with Dunn Field because the source of
18		Dunn Field and that is Dunn Field here (indicating) is along this part,
19		the east the western part of Dunn Field That is the source for the
20		groundwater there. We know the groundwater contamination is flowing
21		primarily to the west at that location
22	MR. WILLIAMS	So that's at the corner of the lot almost?
23	MR. OFFNER:	It's right in here (indicating).
24	MR. WILLIAMS:	Okay.
25	MR. OFFNER:	And I have a graphic later that shows that.
26	MR. WILLIAMS:	Okay.
27	MR. OFFNER:	Now, for the Main Installation, we have some areas there, and we're going
28		to be doing some more drilling out of the Main Installation. There's a
29		couple of off-site sources here (indicating), but the areas down in the
30		southeast area down in these the industrial area down in the southwest
31		corner, and there's an automotive the vehicle maintenance area and
32		whatnot over in this part.

1	MR WILLIAMS	Those sites, could you just tell them could you show could you put
2		this map back up right here and show us exactly where you're talking
3		about?
4	MR OFFNER:	I sure can.
5	MR WILLIAMS	Okay that's the Main Installation and Dunn Field?
6	MR OFFNER	Yes.
7	MR. WILLIAMS.	Okay.
8	MR. OFFNER.	I'm talking about this area in here (indicating).
9	MR WILLIAMS:	So that's down in the open shed area, am I right? Old paint shop?
10	MR. OFFNER:	Yes, and in this area (indicating).
11	MR. WILLIAMS:	Okay, that area is right there, though, by 210?
12	MR. OFFNER:	It's right here (indicating).
13	MR. WILLIAMS:	Okay, we're just trying to make sure that everybody knows exactly where
14		you're talking about
15	MR. TRUITT:	I might have excuse me. Ulysses Truitt. I might insert for you there
16		from background knowledge, all of that area used to be the old vehicle and
17		forklift maintenance area until we took Building 770 and put in some
18		environmental control things and closed this area down. So there were no
19		environmental laws on the books when this was an automotive
20		maintenance area So a lot of things went on then.
21	MR OFFNER:	Okay, all right, let me that takes me to kind of a summary of the
22		findings for the Main Installation. Again, the shallow groundwater located
23		80 to 100 feet contains VOCs or industrial solvents that we talked about,
24		and I think we just showed a graphic of that. An important thing to note
25		there, that the drinking water aquifer underneath the Main Installation is
26		not, in fact, affected by the environmental conditions in the shallow
27		aquifer, and we're not seeing any impacts to the Allen Well Field.
28		The cleanup remedy for the Main Installation for groundwater was
29		outlined in the Proposed Plan that came out in August of 2000. Remember
30		that there was a Public Comment Period. Right now the Record of
31		Decision identifies the selected remedy that's going forward, and we'll talk
32		about that in the next couple of slides.
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1		I do want to note that Tennessee Department of Environment and
2		Conservation is going to investigate these suspected off-site sources of
3		VOCs down in the southeast and southwest They are seeing some off-site
4		sources of, you know, basically upgradient, groundwater upgradient So
5		they're going to be looking into those
6		
7	MR OFFNER	Again, this is a table. We talked about this in the last meeting This is for
8		the Main Installation for the groundwater, and it's talking about the
9		primary COCs. These are COCs; the contaminants of concern, chemicals
10		of concern that were carried forward in the Feasibility Study, Proposed
11		Plan and in the ROD (Record of Decision) both requiring a cleanup action.
12		Those VOCs are tetrachloroethene, PCE, and trichloroethene, TCE.
13		Again, the MCLs (Maximum Contaminant Levels) in the table in here,
14		those are the maximum contaminant levels that are set forth by the EPA
15		Those are health protective standards for those concentrations in
16		groundwater At or below those levels are considered safe
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18		We want to show there for the 36 wells that are associated with the Main
19		Installation, 28 are at levels that are safe. That means they are at or below-
20		the five ppb (parts per billion) MCL for PCE, and 32 wells are at safe
21		levels in concentrations of five or below for TCE The five wells
22		respectively are those areas where the groundwater cleanup remedy is
23		going to be applied to. The highest recent groundwater concentrations
24		detected of PCE were 200, and 78 was the next highest parts per billion.
25		For TCE they were 50 parts per billion and 39 parts per billion I do want
26	-	to show again, I think we just showed this figure. Again, those VOCs
27		are located in these areas here in the blue, which identifies the VOC plume
28		in the shallow groundwater on the Main Installation
29	MR. MORRISON:	One moment. Steve
30	MR. OFFNER:	Yes.
31	MR. MORRISON	I think it's very important to note here groundwater flow directions
32	MR. OFFNER	Okay again it might be hard to see. The light blue lines are the
		oney, aban, it mant to have to see. The light olde lines are life

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1		this direction and this direction and from this area to this area (indicating).
2		Then there is a central groundwater flow to the south. So this is this way,
3		and this is this way (indicating)
4	MR WILLIAMS	So, are you saying that all of the chemicals are being pulled into the
5		Depot? Is that what you're saying?
6	MR OFFNER	There's a couple of areas out there we don't know about It's some
7		potential off-site source down in this corner (indicating), and we don't
8		know what's going on there with the flow. It's going this way (indicating).
9		So there is a former we have some knowledge of a former dry cleaner
10		down located down in this area which used these same compounds and
11		additionally down in this area. So we don't know we know the
12		groundwater flow doesn't show our concentrations going off site on the
13		Main Installation.
14	MR. WILLIAMS	And for Dunn Field?
15	MR. OFFNER	We'll get to that in a second.
16	MR. WEBB.	Would you show them there again what series of wells shallow wells
17		are where you are actually pulling the water out (inaudible)?
18	MR. OFFNER:	Okay, let me go to the next drawing because we'll go through Dunn Field,
19		and I'll show that in a graphic. It shows that pretty well. Now, again, let
20		me summarize the findings for Dunn Field now. Again, we have a
21		shallow aquifer located 80 to 100 feet below land surface, and the shallow
22		aquifer contains VOCs, industrial solvents. But, again, the drinking water
23		aquifer beneath Dunn Field is not affected by the environmental
24		conditions in the shallow aquifer. Again, the eastern the closest wells to
25		the Allen Well Field are not showing any impacts from these VOCs that
26		we are seeing on Dunn Field.
27		
28		Let me before I there is another table I want to go to. It's important to
29		note at this point, too, the shallow groundwater is not a source of drinking
30		water. It's important that I say that again. It's not used as a source of
31		drinking water in the area.
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This, like the table that I showed for the Main Installation, again, shows 1 MR OFFNER the volatile organic compounds that we're finding in the shallow 2 groundwater on Dunn Field You can see we have PCE and TCE again 3 that we saw in the Main Installation, and we see a number of other VOCs. 4 Some of these compounds are biodegradation or biotransformation 5 products from TCE and PCE as it degrades But some of these are б additional VOCs that we had not seen before on the Main Installation. 7

> Again, we have a list of maximum contaminant levels, the health protective standards. Two of these you can see with asterisks don't-have----federally EPA mandated MCLs in the groundwater. One of those is 1,1,2,2-tetrachloroethane or PCA. And the other one is chloroform. What we're showing there is a risk value that's being used for these compounds in the Risk Assessment as part of the Remedial Investigation, but I wanted to point that out to you.

Again, we showed the number of wells for each one of these compounds that are at safe levels, which are at or below the MCLs, and we show a column of the wells greater than the MCLs. For the most part, the majority of the wells are at safe levels. The wells that are greater than the MCLs, that's where cleanup is going to be concentrated, and that's where our Remedial Investigation is focusing.

There is one thing I want to point out here. This concentration of 1, 1, 2, 2PCA of 33,000 parts per billion, that's located on Dunn Field. I want to point that out. That concentration -- the next highest concentration that we see is 3,000 parts per billion. So I just wanted to make sure that -- it is a single concentration at this level. The next concentrations are less than that. I just wanted to make sure that everyone knew not everything was at 33,000 parts per billion. And I will show you where that well is located in this graphic.

MR. BALLARD Steve? 32 33 MR OFFNER:

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Yes

1	MR. BALLARD:	Turpin Ballard. I just wanted to point out that that location of that well
2		where we had that 33,000 is right pretty much where we believe the source
<b>3</b>		the soil the source of contamination in the soil and the groundwater is
4	MR OFFNER	Correct
5	MR BALLARD	You'll be focusing on that?
6	MR OFFNER	Talking about source. This is we call this a source area well
7	MR. WILLIAMS:	Okay.
8	MR. BRAYON:	Steve.
9	MR. OFFNER:	Yes.
10	MR. BRAYON:	Brayon- Have you are you looking at a historical record of where these-
11		chemicals may be coming from? Like comments that it's the cleaning, you
12		know, stuff like that? Have you looked at a historical record to see?
13	MR. OFFNER:	Yes, we looked at possible disposal areas on Dunn Field We're trying to
14		tie it up. There's a when you look at the Remedial Investigation there
15		is kind of a fingerprint of each of these compounds, where they are on
16		Dunn Field. So they kind of have a couple of variations within the source
17		area of where they are located. So we're looking at the groundwater
<b>)</b> 18		associated with that.
19	MR. BRAYON:	Are you going to give us that information?
20	MR. OFFNER:	Yes, sir
21	MR. BRAYON	Okay.
22	MR. OFFNER	Now, you know what, there is something here. Give me one second
23		because I made an adjustment to this drawing and it didn't say, but I want
24		to do one quick thing here. Bear with me for one quick second.
25		(Brief pause.)
26	MR. OFFNER:	This is a schematic of a graphic of Dunn Field. It's kind of moved around
27		north, and it's kind of this way (indicating). It's for visual affect here. It's
28		kind of at an angle view. This is Dunn Field in the blue here. Here is the
29		disposal area, the source area that we talked about for Dunn Field. Here
30		are the 11 groundwater extraction levels along the west side of Dunn Field
31		and a conveyance line that takes the extracted water out (indicating). Just
<a>32</a>		for reference, those are along the west side of Dunn Field
33		

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ì		The green arrows are the groundwater flow directions in the shallow
2		aquifer The brown areas are some of the source areas for VOCs within
3		this one area disposal area on the western side of Dunn Field The
4		purple line is an area I drew that in there because there's kind of a
5		shaded area in here that doesn't come up very well That is the extent of
6		VOCs in the shallow groundwater in the area of Dunn Field
7		
8		Again, for perspective, this is Dunn Road This is Person Avenue
9		(indicating). I do want to point out here that we do have a source of
10	,	VOCs. Groundwater flow is this direction (indicating). We have a source -
11		of VOCs from up in the north side that we don't know where it's coming
12		from, but it appears to be an off-site source. The flow comes in this way
13		(indicating). So we don't know that's why the off-site sources are
14		unknown for this area up in here (indicating) This is Person Avenue This
15		is Rozelle Street in here, and this is Kyle. This is Ragan right here, and
16		this is the MLGW (Memphis Light, Gas and Water) substation, electrical
17		substation here and here. This is a trucking facility that fronts on the front
18		of Dunn Road (indicating).
19	MR. WEBB:	Our well field is further, about a mile and a half in that direction, that way;
20		right? (Indicating.)
21	MR. OFFNER	Yes.
22	MR. WILLIAMS.	So, have we got permission to put monitoring wells there to find out if the
23		chemicals are there?
24	MR. OFFNER:	Yes. Let me I'm going to jump out of this. This is that was I believe
25		the well, let me let me come back. Can I come back to that? Because
26		I want to go through the rest of the presentation, and then I'll I'm going $\frac{1}{2}$
27		to bring up another graph that I think can help that.
28		
29		"What are the next steps." For the Main Installation: the finalization of the
30		Record of Decision that identifies the selected groundwater cleanup
31		remedy and to design that selected cleanup remedy, which is enhanced
32		bioremediation. Also coupled with that are deed restrictions that restrict
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1		the use of the shallow groundwater, and in addition we are also installing
2		additional groundwater monitoring wells as part of the remedy
3		
4		Then we have the beginning of the cleanup actions As part of the
5		beginning of the cleanup actions and beyond would be the long-term
6		monitoring, which is done to monitor the effectiveness of the groundwater
7		cleanup and ensure compliance with the deed restrictions that we talked
8		about Those are the next steps for cleanup on the Main Installation with
9		regard to groundwater
10		
11	MR. OFFNER:	On Dunn Field, the Remedial Investigation report is out due out this
12		fall. The RAB will be presented a copy in November-ish, the Revision
13		One for their review. Early 2002 the Feasibility Study will be issued, and
14		what the Feasibility Study is the alternative for groundwater cleanup, what
15		remedial technologies are out there. It basically comes up with a short list
16		of the applicable technologies to clean up the groundwater in the area of
17		Dunn Field.
18		
19		After that, the Proposed Plan comes out, and like the one we just had for
20		the Main Installation, this one identifies the cleanup alternative preferred
21		by the Defense Logistics Agency, EPA and TDEC. Once that is out, there
22		is a the Public Comment Period where everyone is invited to come in
23		and be part of the process and to review the document. In the fall of 2002,
24		the Record of Decision is slated to be issued and that will have the
25		selected cleanup remedy for Dunn Field.
26		
27		Now, let me get back and show you a different drawing there so that I can
28		answer your question, sir. This is that area of Dunn Field that we saw on
29		that one drawing, the area west/northwest of Dunn Field. What we're
30		showing there is I don't have it drawn on here, but that area is bounded
31		in this area here (indicating). We have a source up in this area that we
32		don't know, an unknown source, groundwater that's upgrading it from
33		Dunn Field. Flow is this way (indicating). But this area is bounded by

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1		these wells. All these wells are in place and have been monitored Some
2		additional wells were installed last fall and winter to better help us to find
3		what was going on here That area you saw is bounded by these outer
4		wells that define the extent of the groundwater VOCs
5	MR WILLIAMS	Those wells that you have there, what have they detected? Have they
6		detected any you know, I know you said they detected some chemicals
7		there
8	MR OFFNER	Yes.
9	MR WILLIAMS:	But are they to the level where they would, you know, be harmful?
10	MR. OFFNER	The concentrations let me see. What we are showing here is that's
11		what I'm going to call the limit of detection through here (indicating).
12		Everything outside of that is clean, for the most part. Let me say clean is -
13		- we're not they are at safe levels, and everything in here is what we're
14		seeing inside there (indicating).
15	MR. WILLIAMS	Okay, so you're saying that right now you're dealing with residents as well
16		as commercial companies?
17	MR. OFFNER:	We're dealing in the shallow groundwater that's 80 to 100 feet deep, and
18		this is and this is the order that will go forward as part of the cleanup.
19	MR. WILLIAMS	Okay, so my next question is: I know that under the plan that we're under
20		health assessments are not required for you-all to do. Am I right? Health
21		assessment for the community?
22	MR. OFFNER:	What's in the Remedial Investigation is the Risk Assessment.
23	MR WILLIAMS:	Okay
24	MR. OFFNER:	That identifies the risks, safe or unsafe.
25	MR. WILLIAMS:	Okay.
26	MR. OFFNER:	That's what we're presenting and that's part of the Remedial Investigation
27	MR. WILLIAMS:	So, you're saying it's safe?
28	MR. OFFNER:	What I'm saying is that this is going to we have concentrations of VOCs
29		in the groundwater in this area that are at levels that exceed the maximum
30		contaminant level and require cleanup that are greater that are above the
31		safe level.
``	MR. WILLIAMS:	So that means that you're saying that they would possibly not saying
V 33		that you are saying it is but possibly would be harmful to

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1	MR OFFNER.	If you drank it The shallow groundwater is not being used, but we have to
2		be protective of the groundwater So cleanup right now the risk it's
3		not a risk for anyone because the water is not being it's not used for
4		drinking water
5	MR WILLIAMS	Okay, for instance, if you just say, on that land if you grew vegetables,
6		as some people say that they did have home gardens and stuff like that,
7		would that cause problems then?
8	MR. OFFNER	Not we're talking groundwater that's 80 feet below the land.
9	MR. BALLARD:	No.
10	MR. OFFNER:	The answer is no.
11	MR. MORRISON:	Jim Morrison, TDEC. To answer you, that question came up about two
12	·	meetings ago. Plants, vegetable gardens and things like that are going to
13		be drawing water from probably the top two feet, maybe three feet of soil.
14		Your contamination is at 80 to 100 feet below surface right there So you
15		would not be getting the water that is contaminated would not be
16		coming in contact with the vegetables that are being grown. The grass that
. 17		is being you know in people's yard, that would not be the source of the
18		contamination, if there is anything there on these pieces of property
19		
20		One other thing I was wanting to point out, Steve, that you did not
21		mention that is very important to me. An interim remedy was an interim
22		pump and treat along the line to attenuate or to stop groundwater
23		movement coming from off the base. Steve, if you would point that out
24		and show what is being done right there, because that's very important.
25	MR. WILLIAMS:	And at the same time while you're looking for that, I know we did a four-
26		season test. Like sometimes in the winter the water is a lot higher than in
27		the summertime or it rains a lot more in April than it would in January or
28		something like that. Didn't we do a test like that at one time, and didn't we
29		run to see that the different tests that showed different things at different
30		parts of the seasons?
31	MR. OFFNER:	Yes, yes, absolutely, and that's going to be identified in the Remedial
32		Investigation, how the fluctuation in groundwater with the VOC levels
33		We have looked at that The monitoring has been done out here since 1996

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1		and is currently ongoing. Mr Morrison was talking about the interim
2		remedial action, the groundwater remedial action which is this purple line
3		in here (indicating) That's the area where those 11 groundwater extraction
4		wells were installed as part of an interim measure to its goal was to
5		prevent any continued migration of contaminant VOCs from Dunn Field
6		to the west That was installed in 1998 it came on line in November of
7		1998 and has been running ever since.
8	MR. BRAYON.	Steve, Mr Morrison has just alluded to something and you too The
9		contamination is 80 feet. That means that above 80 from 80 to the
10		topsoil it is clean. Or where was the source of that 80-feet of
11		contamination? Is it coming from somewhere you know, coming in at
12		80 feet or is it coming from the topsoil going down 80 feet?
13	MR BALLARD:	The source area that I pointed out earlier where we had that hit of 33,000
14		parts per billion in the groundwater would have occurred from disposal in
15		Dunn Field of these chemicals and percolation of the chemicals down
16		through the soil by their own weight and by being carried by rainwater.
17		Then once they hit the water table, they, you know, dissolve in the water
18		and flow along with the groundwater in the direction of groundwater flow
19		that Steve's pointed out several times. So the areas that are outside of
20		Dunn Field contain groundwater contamination, but the soil above that
21		doesn't contain the chemicals. The soil with the chemicals in it is on Dunn
22		Field That's one of the areas that Steve's going to be talking about in his
23		follow-on presentation on soil vapor extraction
24	MR. BRAYON:	Is this a continuing process then?
25	MR. BALLARD:	It's continuing right now, but the groundwater extraction system is
26		interrupting the migration of the contaminants and keeping additional
27		contamination from going off of Dunn Field.
28	MR. BRAYON:	Then there is a source still somewhere still existing.
29	MR. BALLARD:	On Dunn Field, that's right.
30	MR. OFFNER:	And that's a good segue because we're going to go into the next
31		presentation.
32		
2 33	<b>DUNN FIELD SO</b>	IL VAPOR EXTRACTION PILOT TEST

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All right, the next presentation we're going to give you -- we're presenting 2 MR OFFNER a summary of the Soil Vapor Extraction System Pilot Test that is 3 4 scheduled for Dunn Field this fall Just to kind of -- before I go into it, I 5 just want to say that the work plan for this is in right now for review, and 6 the regulators are still yet to comment on this So this is -- we're moving 7 forward with this, but we wanted to present the approach to everyone now The "Overview of the Presentation" What we want to talk about -- is what 8 9 is soil vapor extraction, commonly referred to as SVE, and why are we doing a pilot test at Dunn Field, where and when will the test be -----10 ... 11 performed, and how will results be used in the environmental cleanup - the 12 next steps that are planned for Dunn Field. 13 Soil vapor extraction, SVE, it's a potential future cleanup action for Dunn 14 Field It's very effective in cleaning VOCs -- providing cleanup for VOCs 15 in the soil How it does that is it pulls air through the soil as solvents and 16 17 turns them into vapors and then extracts them out through a closed extraction system. Vapors are contained by a carbon filtration unit at the 18 point of extraction On some tests -- and we're not sure whether or not 19 20 we'll be doing it on ours, but additional air vents are placed in the soil to 21 help supply ambient air to the formation while you're doing the extraction 22 tests 23 As part of the soil vapor extraction pilot test, additional monitoring wells 24 25 or vapor monitoring wells will be installed to test the effectiveness of this pilot test. I want to add here that this is a very successful remedial 26 27 technology that is used at a number of Superfund sites where VOCs are 28 present in the soil. It is the preferred remedy by EPA for volatile organic 29 compounds in the soil. Those are the volatile organic compounds we just 30 talked about in the groundwater presentation 31 MR. WILLIAMS: Mr. Brayon, did you have a question you wanted to ask? MR. BRAYON: I apologize, no. 32

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	1	MR OFFNER.	Here is a schematic of the SVE system What this is showing here and I
	2		am just going to point on the figure here are two soil vapor extraction
ı	3		wells One is located in the loess or the sand and clay layers that are
	4		located within the first 35 - 40 feet of Dunn Field A second soil vapor
	5		extraction well is located in the fluvial sand and gravel from about 35 or
	6		40 feet down to about 75 - 80 feet, just above the shallow groundwater
	7		As you remember from the previous slides, this is on Dunn Field, and it's
	8		above the shallow groundwater that sits on that thick and impermeable
	9		clay layer that we saw in the figures.
	10		· · · · · · · · · · · · · · · · · · ·
	11		The SVE system consists of a vacuum unit with a vapor treatment system,
	12	·	and what that vacuum unit does is applies a vacuum on these extraction
	13		wells in a closed system. What it does is it moves the VOCs in vapor – it
	14		vaporizes them, volatizes them and extracts them out through the closed
	15		vapor extraction system, through the vacuum pump and then into the
	16		vapor treatment system
• ?	17		
	18		What's not shown on this graphic is the monitoring points that we have
C	19		located around this radiating out from these extraction wells. These points
	20		are located at different depths at both of these layers, in silts and clay and
	21		down the fluvial sand. What those monitoring points are used for is
	22		monitoring the chemistry of the soil gas, the soil vapors. In addition, we
	23		also measure vacuum or vacuum pressure on those points to see what the
	24		influence is of vacuum out away from these extraction wells.
	25		
	26	MR. OFFNER:	Again, let me make sure that it's very important to note that this is all as
	27		closed system. These well screens are located beneath the ground. It
	28		brings the vapors up through under that into a closed system, through a
	29		vacuum pump, and then treats those vapors through the treatment system.
	30		"Why are we doing a pilot test of Dunn Field." As we talked about. SVE
	31		is a very affective remedial approach through dealing with VOCs in the
	32		soils. We're moving forward into the feasibility part of our process, the
<b>Q</b>	33		Feasibility Study at Dunn Field, and we want to see how this cleanup

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64 ภ 251 remedy performs in these two different soil units that we see at Dunn 2 Field That's why we're doing a pilot lest, so we can see if we can carry 3 this remedy forward, as we'll talk about later, but it's called a presumptive 4 remedy for VOCs in soil That's why 5 "Where?" A temporary SVE, soil vapor extraction system, will be 6 7 constructed on the central area of Dunn Field. I'm going to show you a quick graphic on that. It's going to consist of seven vapor monitoring 8 9 wells around the two extraction wells. Each one of those vapor 10 monitoring wells consists of four or five different points, monitoring points within those layers, those geologic layers I showed you. 11 12 All the vapors are contained within that SVE treatment system. There's no 13 exposure to the community or to the environment of these vapors. The air quality and the soil monitoring will be conducted continuously throughout 14 15 the test phase, and the discharged air is noncombustible. 16 17 What I do want to show is the location, and this graphic takes a minute to 18 load. This is an aerial photograph of the area. You can tell this is -- this is 19 the Main Installation. You can see that here (indicating). We're sitting 20 about, where, right here (indicating). This is Dunn Field This is the 21 power line that crosses Dunn Field This is the area where this test is 22 going to be conducted, on the western half of Dunn Field (indicating). 23 Now, a close-up of that is right here (indicating). This is that power line I 24 showed you from the aerial photograph. This is the extraction well on the 25 fourth existing monitoring or vapor monitoring points around it now. 26 We're going to be adding three more vapor points in here to better test thea effectiveness of the system. But that's the area of the test right there 27 28 (indicating). 29 MR. MORRISON: Steve, could you go back to your aerial photo, please, and zoom in on the 30 area that you plan to put the wells in? MR. OFFNER: 31 Yes. MR. MORRISON: Now, if you would, kind of -- are you able to draw like you did a while 32 133 ago?

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1	MR OFFNER	Lean draw. Yes, I think Lean.	40	26	
2	MR MORRISON	Okay draw on there where we have noted the highest contact	nination i	n tha	
~ 3		soil just up there where we're going to be doing the test	mation		
1	MR OFFNFR	Okay right there (indicating). Can you see that?			
5	MR MORRISON	That's the location where you're having the contamination in	the soul	It'e a	
6		nretty good distance away from the homes there. That's whe	re it's goi	na	
7		to be entering the substrate and moving down to the groundy	vater and (	then	
8		the groundwater is going to be carrying it on But that's whe	valor and t	lineit	
9		contamination in the soil is	re the		
10	MR. WILLIAMS:	So, it's coming off site on site? It's coming off site onto the	site?		
11	MR. OFFNER:	This is on site here (indicating)	51001		
12	MR. WILLIAMS	Okav.			
13	MR. OFFNER.	That's on Dunn Field.			
14	MR. MORRISON:	That's the point of input into the groundwater You were as	cing earlie	rif	
15		that could possibly come in contact with the vegetables that	are being		
16		grown in the gardens. That's where the soil contamination is	The		
· 17		groundwater is at 80 to 100 feet deep That's what's contamin	nated dow	n	
18		there, and that would not be coming in contact with the vege	tables in t	he	
19		garden			
20	MS. ARNST	Excuse me. I'm Diane Arnst from the pollution control secti	on, and I	had	
21		a question.	·		
22	MR. OFFNER:	Yes.			
23	MS. ARNST:	Your materials say that all the vapors are going to be contair	ed within	the	
24		treatment system. Does that mean that the carbon filters will	l capture 1	100	
25		percent of the VOCs?			
26	MR. OFFNER:	We are looking at that. Before we implement the test, we ar	e going to	goi	
27		out and sample the soil vapor from the two extraction wells.	Based on	a	
28		five-well volume purge from the wells, we are going to then	design ou	ır	
29		carbon units to basically contain near as to 100 percent as w	e can.		
30		Obviously, your department issues air emission tests. This i	s going to	be a	
31		temporary test, but regardless of that, we want to be very con	nservative		
32		with our vapor treatment. What I mean by that is we want to	be we	are	
33		going to over design the carbon units to treat the VOCs and	the vapors	<b>S</b> .	

	1	I know sometimes some pilot tests can go by without any treatment
	2	because it's of short duration. But regardless of that the air pormitting
	3	standard we want to make sure that we filter
	4	standard, we want to make sure that we find.
	5	This is a sample SVE system and what we're showing here is and ours
1	6	will probably look a little different. It may be up on a mobile trailer unit
	7	for easy access, and it what we're showing here is this is basically the
;	8	vacuum the vacuum unit. This is the in-flow, the manifold nining
1	9	manifold that come off of the two extraction wells, comes into the system
10	0	here, the vacuum unit. Then beyond this and what we are not showing in
1	1	this picture would be the vapor treatment units that would be present and -
1	2	- but this is typical of what you see for a soil yapor extraction yacuum
1	3	unit.
14	4	
1	5 MR. OFFNER:	The pilot test schedule right now is in October of 2001 We're looking at
1	6	constructing the temporary SVE system and the additional monitoring
• 1	7	wells, constructing that system on a mobile unit, bringing it to Dunn Field
1	8	also installing the additional vapor monitoring wells
	9	and monthly we during the monthly wong
2	0	In November we're looking at beginning operation and monitoring of the
2	1	test system, and it has about a 14-day duration, a duration for each one of
2	2	those extraction wells. We'll do a test on one well, then we do a test on the
2	3	other well.
2	4	
2	5	And that's did I miss I missed a slide. I missed a slide. I'm sorry.
2	6	"Next step." Sorry. If the SVE pilot test proves to be effective, its use
2	7	will be identified as a presumptive remedy in the Feasibility Study. Again
2	8	the Feasibility Study, as we showed in the previous slides on the previous
2	9	presentation, is due to Revision One is due to the RAB members in
3	0	February of 2002. In March of 2002, the Proposed Plan is coming out. We
3	1	talked about that will have the preferred alternative for the remediation



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1		So, this is being done currently with the Feasibility Study to identify $28$
2		whether or not we can use this remedial technology as a presumptive
3		remedy.
4	MR DEBACK	Steve, is it possible that during the pilot test if some of the RAB members
5		are interested that they could visit the site while this is going on or is that
6		not
7	MR OFFNER	No, it's possible, and we've had some back in the past with some of the
8		other remedial actions we had some RAB meetings actually at some of the
9		remediation sites if you remember back in 1998 and around that time.
10		What we'll have, though, is we have, obviously, a work zone, an-exclusion
11		zone where our workers are where workers are. So outside that
12	<i>.</i>	exclusion zone, yes.
13	MR. DEBACK:	Outside the period of operation would it be possible to if the RAB was
14		interested in going out there and showing them the actual system and
15		explaining how it operates at that time?
16	MR OFFNER.	Yes. I mean, the system will be operating, and we go through various step
_1		tests and then steady state. We try to get all the influences of vacuum on
18		the soil, and during we have each well goes through that. While we're
19		doing that, there are crews collecting vapor samples and the vapor points
20		and vacuum readings all around it So it's a constant cycle. But, yes,
21		absolutely.
22	MS. MOORE	There is a November RAB meeting this year. So maybe during the RAB
23		meeting.
24	MR. WILLIAMS:	You said they've done these pilot tests in other places; right?
25	MR. OFFNER:	Oh, yes. It's pretty pretty common. Like we said, it's the preferred
26		remedial approach for VOCs in the soil. So we're looking at this as
27		moving this through into the Feasibility Study.
28	MR. MORRISON:	Jim Morrison again. Mondell, when soil vapor extraction systems work,
29		they work beautifully. What we're doing with this is to find out if it's going
30		to work properly out here. So we're at that stage. We're hoping that this is
31		it, and it's looking pretty good.
32	MR. WILLIAMS:	I guess if there are no questions Ms. Mills?

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1	MS MILLS BATES	Betty Mills-Bates I'm just trying to understand Are you trying to extract
2		vapors from the soil or are you going below that to the groundwater to
<b>)</b> 3		extract the toxins and the volatiles from the plumes and the shallow
4		waters? Which one are you trying to
5	MR OFFNER	Good question Good question because right now we're looking at the
6		soil, and we're looking at the source area We talked Mr. Brayon spoke
7		about it. Mr. Mondell spoke about it
8	MS MOORE:	The mike is not on.
9	MR OFFNER:	I think everybody can hear me. I took it off. We're looking right now at
10		this pilot test but on a go-forward basis. When we go through the RI and
11		FS in the Proposed Plan, it will include the what the latter part of your
12		question was the remediation of the groundwater. This is part of the
13		process, and we're fitting this in right now to see if this remedial
14		technology for soil source removal works so we can move forward with
15		that and speed up its process in the Feasibility Study and streamline it.
16		Then once the the overall remedy will include treatment of that shallow
17		groundwater, yes, remediation of it
18	MR. MORRISON:	Jim Morrison.
19	MR DEBACK:	Let me just interrupt for a second. Just to make sure that the question gets
20		answered. The answer to your original question is yes; we are taking the
21		vapors out of the soil as a separate operation. Then the because that's
22		what's contributing to the groundwater contamination. As rainwater
23		passes through the soil, the vapors in the soil, they get diluted into that
24		rainwater and enter into the groundwater. So there is a continuing
25		contamination right now from that source in the soil. The soil vapor
26		extraction system, if it works, will take those vapors out of the soil, which
27		is the source for the contamination. In addition to that, we will be doing
28		remediation that's on the contamination that's currently in the
29		groundwater. So it's a two-step process.
30	MR. MORRISON:	I could not have said it better myself.
31		

## 32 BASE REALIGNMENT AND CLOSURE CLEANUP TEAM UPDATE

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	1	MR WILLIAMS	Okay, if there are no more questions, we will move on with the agenda.
	2		Okay, Mr Morrison, I think you are up next with the Base Realignment
	3		and Cleanup.
	4	MR MORRISON	The cleanup team update? Well, good news for you, you don't have to
	5		listen to me for very long tonight We were able to capture the minutes
	6		and have them signed off on by the end of the meeting today So you will
	7		have a detailed summary of what went on in the meeting today So I will
	8		not be giving you a presentation tonight. You have this in your packet in
	9		front of you.
	10		
	11	PUBLIC COMMEN	NT PERIOD
	12		
	13	MR. WILLIAMS:	Okay, at the end of the meeting I would like for everyone who have cups
	14		and trash and everything to make sure that they dispose of it in the trash
	15		cans over there We'll move on to the Public Comment Period if that's all
	16		right with everyone at the table So do we have any public comments?
	17		Ms. Delores Alexander
	18	MS. ALEXANDER:	I would like a copy of that study. Is it possible?
C	19	MR. DEBACK:	You mean the briefing, ma'am?
	20	MS ALEXANDER	Uh-huh
	21	MR. DEBACK.	Yes, ma'am, we can give you a copy.
	22	MR MORRISON	They're at the front table.
	23	MR. WILLIAMS:	State your name and your address for the record
	24	MS HESS.	Connie Hess. I'm with Hess Environmental Services. Our office is at 9750
	25		no, my home is at 9752 Green Spruce. The question I have is what is
	26		the cone of influence of the potable water well from Allen Field? What is
	27		the closest well's cone of influence? Is it a mile? Is it half a mile?
	28	MR. DEBACK:	Steve, can you answer that question for us?
	29	MR. OFFNER:	Mr. Webb, you might be able to handle that. (Inaudible discussion.)
	30	MS. MOORE:	She can't hear anything you're saying.
	31	MR. OFFNER:	I'm just trying I'm thinking out loud here. Because I have a graphic that
	32		displays that. I'm not sure I have that with me. But there is a protection
9	) <sup>33</sup>		zone, a groundwater protection zone that takes into account the draw-

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1		down from the Allen Well Field. I have a graphic and I don't have it here,
2		but that number escapes me right now
3	MS. HESS	I guess the bottom line is it a good distance away from where you have a
4		dip into the lower aquifer?
5	MR OFFNER	It's west of that, yes It's and there's a good graphic in the Remedial
6		Investigation
7	MS. HESS	There's a protection area?
8	MR OFFNER	Yes, there is.
9	MS. HESS:	That's what I wanted. Thank you.
10	MR. WILLIAMS:	Are there anymore people anyone else like okay.
11	MR. BROWN:	My name is David Brown. I live out in Millington This is my first time
12	·	here. We're making a bunch of assumptions everything is safe and we're
13		going to work this out in the proper time frame am I correct within a
14		year or two, three years? What if we have an earthquake tomorrow, and
15		these sandy areas, what happens then? What happens I want to know
16		what happens to Memphis water. Let's say we have a catastrophe here on
17		our hands What happens to Memphis water then? Somebody? We're all
18		making assumptions tonight I would just like to take it a little bit further.
19	MR MORRISON:	Jim Morrison, Division of Superfund. That's probably a very difficult
20		question to answer there. But if we had an earthquake here in Memphis,
21		probably the Dunn Field contamination would be the least of our worries
22		at that point in time We would probably have
23	MR. BROWN:	That's I understand what you're saying, but there's still the contaminants,
24		and there's still a possibility of getting in the water system. That's a real
25		possibility when we're trying to have water and trying to recover. I'm just
26		curious.
27	MR. MORRISON:	Well, I mean, there would be no way to answer that question.
28	MR. BROWN:	That is a real risk that we still have out there though, a potential risk.
29	MR. MORRISON:	It would be a risk for anything in the entire area.
30	MR. BROWN:	I'm just asking is the water if we have it and it gets contaminated, what's
31		going to happen to the water system in the City of Memphis?
32	MR. MORRISON	Now, that I couldn't answer.

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		640 32
1	MR BROWN	Is it going to be polluted, we can't drink it and it's got to come from
2		outside? I apologize It's my first time here I don't know I'm not trying
3		to step on toes I'm just asking a question
4	MR. WEBB	Let me try to answer that James Webb I would doubt that an earthquake
5		would cause the water we might possibly get some contamination in an
6		isolated area from the surface, but that would be an outside chance
7	MR BROWN.	Based on what type on the Richter scale, what type of anything to
8		back that up with, any kind of numbers, if we have, what, a 4.0, 5.0, 6?
9	MR. WEBB:	Well, it would depend upon what it did to the soil structure and in what
10		areas it occurred.
11	MR. BROWN:	I understand.
12	MR. WEBB:	But if we had to, we would just turn off wells if it got to that point.
13	MR BROWN:	How would if they turned off the wells at this point, what would happen
14		to the City of Memphis?
15	MR. WEBB:	Well, it would depend on how many wells we had to turn them If we had
16		to turn them all off, we would have a problem
17	MR. BROWN:	Okay, thank you.
18	MR WILLIAMS.	Anymore questions from the public? If not we'll move on to the RAB
19		comments
20		
21	RAB COMMENT PERIOD	
22		
23	MR. DEBACK:	If there are no further comments, I would like to just before we get
24		ready to adjourn here, I would like everybody to appreciate the new
25		facility that we have here and the April House personnel that made this
26		available to us.
27	MR. WILLIAMS:	Okay, before I ask
28	MR. MORRISON:	Just one question as far as resolution or potential voting on the next RAB,
29		resolution or voting when the next RAB would be.
30	MR. DEBACK:	At this juncture, we will not have a RAB meeting next month.
31	MR. WILLIAMS:	So there will be no RAB meeting for September. So that means that the
32		minutes for July will be approved in November in October.
33	MR. TRUITT	October?

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1	MR WILLIAMS	October, along with the minutes for this meeting, I assume	<b>64</b> î) So anyway,	33
2		do not forget to remove your cups and debris, and I would l	ike to ask if	
3		anyone would like to make a motion		
4	MR BRAYON	I move that we adjourn		
5	MR TRUITT	Second		
6	MR WILLIAMS	All right		

#### (Whereupon, at approximately 7:35 p.m. the meeting was adjourned). NEXT MEETING: THURSDAY, OCTOBER 18, 2001

6:00 P.M.

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#### Attendance List Restoration Advisory Board Members

Mr	Mondell Williams	Community Co-Chair
Mr	John DeBack	Interim Facility Co-Chair
Mr	Turpin Ballard	Environmental Protection Agency
Mr	Dave Bond	Citizen Representative
Mr	Jim Morrison	Tennessee Department of
		Environment and Conservation
Mr.	James Webb	Civic Representative/Memphis
		Light, Gas and Water Division
Mr	Ulysses Truitt	Citizen Representative
Ms	Johnnie Mae Peters	Citizen Representative
Mr	Eugene Brayon	Citizen Representative
Ms	Diane Arnst	Memphis/Shelby County
	,	Health Department
Ms	Betty Bates	Citizen Representative
Ms	Peggy Brooks	Citizen Representative
Mr	Norman Lachapelle	Memphis/Shelby County
		Health Department

#### Others in Attendance

Ms. Alma Black Moore Mr. Trevor S. Diggins Ms. Adrienne Hill Mr Clyde Hunt, Jr. Mr. Steve Offner Ms. Deloris Alexander Mr David Brown Frontline Communications Frontline Communications Frontline Communications Corps of Engineers - Memphis CH2M Hill Citizen Citizen

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Mr Virgil W Jansen Ms. Dorothy Richards Mr John Rollyson Ms Peggy DuBray Mr Benjamin Moore Mr. Greg Parker Ms Armer Torrance Dr. John B Kirkley, M.D Mr. Hank Hess Mr. Connie Hess Ms. Hattie Chism Ms. Joy Farwell Jacobs Engineering USACE Corps of Engineers – Arnold AFB Corps of Engineers – Arnold AFB ATSDR Regional Representative Citizen Citizen Citizen Hess Environmental Services Hess Environmental Services Walker Home Association Citizen

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