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P U B L I C M E E T I N G  
FOR OFF-POST GROUNDWATER PROPOSED PLAN

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Thursday - July 29, 2004  
7 o'clock p.m.  
Hotel Burlington Ballroom  
Burlington, IA 52601

Present for IAAP: Mr. Rodger Allison

Present for URS: Mr. Terry Thonen

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NOTES OF MEETING

1 (Time: 7:00 p.m.)

2           RODGER ALLISON: I'd like to welcome  
3 everyone. The Restoration Advisory Board is hosting  
4 our public meeting for the proposed plan for the  
5 off-post groundwater. And as you all know, that's  
6 been of quite the interest to the public, to the  
7 Army, to the regulators, and the RAB.

8           Before we go on, and as the evening  
9 progresses, if you have questions or statements,  
10 please state your name and speak clearly and loudly  
11 so our stenographer can catch all the pertinent  
12 information.

13           On behalf of the Army, I, of course, want to  
14 thank the Army Environmental Center, the EPA, and  
15 the RAB for their involvement in developing this  
16 proposed plan.

17           I think what we have is a solid plan that we  
18 can move forward with. And we certainly look  
19 forward to developing the ROD and implementing the  
20 plan in the future.

21           I'll open it now to AEC, EPA, and RAB for any  
22 opening statements that you may have.

23           We'll start with Mr. Walton, if you have any  
24 statements.

25           ROGER WALTON: Mainly directed to the

1 technical team that put this together, for your patience  
2 over the past -- especially the last month or so with the  
3 involvement of the various offices, technical and legal,  
4 with the AEC in actually bringing this together and did a  
5 great job. We can move forward with it and everybody  
6 will be happy with it. We were all impressed.

7           RODGER ALLISON: I, too, would like to say URS  
8 has done an exceptional job.

9           Scott, do you have any opening statements from  
10 the EPA?

11          SCOTT MARQUESS: We're happy to get on the road  
12 with this and will be happier when things start  
13 happening and you'll be able to [unintelligible]

14          RODGER ALLISON: Mr. Orth, do you have anything  
15 to add?

16          All right. With that, if there's no other  
17 comments, I would like to turn it over to Mr. Terry  
18 Thonen from URS who's the Project Manager that led the  
19 team that put this document together.

20          TERRY THONEN: Thank you. Basically, what  
21 we're here today to do is to satisfy a couple of  
22 requirements under CERCLA, and that's to have a public  
23 meeting to present the proposed plan for the groundwater  
24 cleanup process to the public and to everyone.

25          We're soliciting comments from the public.

1 And afterwards, after the meeting, you can turn in  
2 a comment on the back page of the proposed plan to  
3 the gal in the back here, or you can actually issue  
4 a comment verbally to be taken down.

5 (Mr. Thonen presented the Off-Site  
6 Groundwater Proposed Plan.)

7 SCOTT MARQUESS: Just a question on  
8 sequencing of the events of our remedial actions.  
9 It doesn't seem to me to make sense to implement the  
10 off-post action until we at least have something in  
11 place for the contamination at the source.

12 Do we know yet how soon that will be in place --  
13 before or after the off-post remedial actions is to  
14 be done?

15 TERRY THONEN: Currently there is a schedule  
16 that's been agreed to and been put in place.

17 In just a couple of slides I'll also respond  
18 to why we didn't implement action off-post that will  
19 do some good. Mainly it's because Brush Creek  
20 concentrations are very low. We're going to attack  
21 the hot spot area. The area greater than 50 parts  
22 per billion. And we don't believe that in the  
23 future we will have sources as high as 50 parts per  
24 billion coming all the way off-post.

25 (Continued presentation by Mr. Thonen.)

1           RODGER ALLISON: Open up for any comments or  
2 questions.

3           RICHARD JOHNSON: Richard Johnson,  
4 RAB member. I've got a few  
5 questions here for the development.

6           The plume size, or the hot spot size. From  
7 the diagram of this 4,000 foot by 1,000 foot. Would  
8 that be a fair estimate of the size?

9           TERRY THONEN: Of the entire plume, perhaps,  
10 yeah. The hot spot is probably much, much smaller.  
11 On the scale, how big the hot spot is --

12          RICHARD JOHNSON: Question was the size of  
13 the hot spot is what I'm after.

14          TERRY THONEN: And our answer is about an  
15 eighth of a mile wide by -- What is that?

16          RICHARD JOHNSON: About a half mile long and  
17 an eighth mile wide?

18          TERRY THONEN: Yes. Yes.

19          RICHARD JOHNSON: How many residence homes or  
20 people requiring water -- how many live in the hot  
21 spot area?

22          TERRY THONEN: In the hot spot area?

23          RODGER ALLISON: I can answer that. Six.

24          RICHARD JOHNSON: All six of those residences  
25 have been moved to Rathbun Water. Correct?

1           RODGER ALLISON: Yes, they have.

2           RICHARD JOHNSON: What additional exposure  
3 risks are there for those families - those  
4 households?

5           RODGER ALLISON: There are none. And the  
6 reason I say that is their levels, where they are  
7 at, are no higher than 6 parts per billion.

8           We tested drinking water at Miller's and  
9 Pleasant's and theirs was highest at 6.

10          We approached USACHPPM -- and that's an  
11 acronym -- U-S-A-C-H-P-P-M -- and they indicated  
12 that for livestock watering and agricultural uses --  
13 that the lawn, gardens, or even for crops -- that is  
14 an acceptable level.

15          RICHARD JOHNSON: So they say that for  
16 livestock and ag uses the current well water is  
17 within acceptable limits?

18          RODGER ALLISON: Yes.

19          RICHARD JOHNSON: Am I correct in my math  
20 here that Alternative 4 -- the recommendation that  
21 you're making -- will lower the hot spot to below 50  
22 parts per billion in about 24 to 36 months faster  
23 than Monitored Natural Attenuation by itself, or  
24 possibly two to three years faster?

25          TERRY THONEN: Absolutely.

1           RICHARD JOHNSON: What's the anticipated  
2 growth of population in that area? Are there any  
3 businesses or homes that are going to be built? Any  
4 construction plans in that area that might increase  
5 the number of people that would be exposed?

6           RODGER ALLISON: Not that I'm aware of.

7           SCOTT MARQUESS: I think the issue of  
8 exposure -- Scott MARQUESS with the Environment  
9 Protection Agency.

10          The exposure risk is made by the hot spot.

11          RICHARD JOHNSON: Then the question all this  
12 is leading to: If we do MNA by itself, the long  
13 term is the same as Alternative 4 -- approximately  
14 45 years?

15          TERRY THONEN: Yes.

16          RICHARD JOHNSON: The short term. The hot  
17 spot is remediated in approximately two to three  
18 years faster under the proposed alternative than MNA  
19 alone?

20          TERRY THONEN: Yes.

21          RICHARD JOHNSON: But during those two to  
22 three years, we really have no additional human risk  
23 in that area. Or am I missing something?

24          SCOTT MARQUESS: I don't think you add any  
25 risks. You have water supply in place.

1 RICHARD JOHNSON: Which we do. Correct?

2 TERRY THONEN: Yes.

3 RICHARD JOHNSON: So if water supply's in  
4 place, there's no additional human risk if it goes  
5 an additional 36 months.

6 So then the reason to spend the additional \$1.6  
7 million to do Alternative 4 from Alternative 2 is  
8 what?

9 I mean -- don't get me wrong. I'm all for  
10 cleaning it up as quickly as possible. And if --  
11 you know -- humans face a greater risk, then let's  
12 do it. But if it's not to help human exposure --  
13 And I take it from your statements that the  
14 additional 36 months do not put any other humans at  
15 risk as far as our models tell.

16 TERRY THONEN: Yeah.

17 RICHARD JOHNSON: Then what benefit do we  
18 gain by spending the additional \$1.6 million?

19 TERRY THONEN: Uh-huh.

20 SCOTT MARQUESS: I think I can answer that. We  
21 do have people who -- We have at least one resident who  
22 has refused water supply.

23 RICHARD JOHNSON: He also refused well  
24 treatment?

25 SCOTT MARQUESS: Is that correct?



1           RODGER ALLISON: The Army provided the  
2 alternate water supply which is the Rathbun water.  
3 And the Army has not offered because we -- we did  
4 place the Rathbun water -- the alternate water  
5 supply -- to that resident, who had it removed. And  
6 therefore we didn't follow up with a secondary  
7 offer.

8           RICHARD JOHNSON: Okay. So one resident had  
9 that removed?

10          SCOTT MARQUESS: Correct.

11          And I guess to follow up on that, the longer  
12 you leave it -- The only way to ensure that it is gone  
13 is to remove the material. Everything else is a  
14 Band-Aid. So that's the only way to ensure  
15 protection. Everything else requires --

16          For example, if I had a remedy that took  
17 me -- Well, as long as it's there, there's a risk  
18 of failure from human control. So that would be the  
19 rationale for the Rathbun water.

20          RICHARD JOHNSON: How many years has this  
21 contamination been present?

22          SCOTT MARQUESS: Since 1940 probably.

23          TERRY THONEN: Our estimate would be shortly  
24 after the plant began operations.

25          RICHARD JOHNSON: So the contamination's been

1 present roughly 50 years. At unknown levels, to be  
2 very honest? Your model estimated as high as 200  
3 parts per billion early on?

4 TERRY THONEN: And probably some of that is  
5 really more, I'd say, the last ten years. Those  
6 estimates are not --

7 SCOTT MARQUESS: I'm talking this direction.

8 The levels -- The statement was that the  
9 levels in the plume are commensurate with the levels  
10 in the creek. So if the creek is hot, the  
11 groundwater's hot.

12 RICHARD JOHNSON: I guess what it boils down  
13 to is, I'm having a hard time grasping -- The  
14 contamination's been present for 50 years.

15 Alternative 2 adds approximately - worst-  
16 case scenario -- 36 months for the presence of the  
17 contamination at a declining level because it won't  
18 remain constant. It will be declining.

19 And this one resident or one household has  
20 refused an offer of Rathbun water from the -- I assume --  
21 quite sure, knowing Roger -- has proved that the  
22 resident's been notified of the health risks, given  
23 detailed information on increased exposure, et  
24 cetera, and probably signed something saying: I  
25 refuse it or I drop it.

1           RODGER ALLISON: He didn't sign anything. He  
2 notified us at a RAB meeting earlier that he had  
3 decided to have that removed because his daughter  
4 couldn't afford it.

5           ROGER WALTON: I might add one clarifying  
6 question on that. Roger Walton from the  
7 Environmental Center.

8           I guess it's not clear to me where that  
9 resident is. I didn't believe he to be in the hot  
10 spot. Correct? The resident who refused treatment  
11 is in some other area?

12          RODGER ALLISON: They are in the hot spot.

13          ROGER WALTON: Okay.

14          RODGER ALLISON: In fact, there's an  
15 unconfirmed report that they are bringing their drinking  
16 water from Burlington. But, like I say, that's  
17 unconfirmed. And they would still be exposed via  
18 external and cooking.

19          TERRY THONEN: We can go ahead.

20          (Multi-person conversation.)

21          ROGER WALTON: I wasn't sure if he was in or  
22 out. Where that resident is. Specifically doesn't  
23 matter, in or out.

24          RODGER ALLISON: I think you can see it on  
25 that map. They're in between new Highway 61 and old

1 Highway 61.

2 ROGER WALTON: Okay.

3 SCOTT MARQUESS: I'll just say one thing that  
4 they looked at it -- The way they looked at it is  
5 compartmentalizing it -- this area and this area.  
6 15, 20, and 2. That's the way of looking at it. And  
7 the model will show you within these particular  
8 areas what happens. But like here the impact will  
9 be broader so it won't be a limited area. That area  
10 to 50 feet to 20 feet to 2. So if you take it down  
11 to 2 everything goes down. You don't see directly  
12 all that. I understand your point.

13 RICHARD JOHNSON: If we weren't seeing levels  
14 at 50 -- say we were seeing levels at 40 -- would  
15 that change the decision for preferred remediation  
16 action?

17 TERRY THONEN: It would have a definite  
18 impact on the decision of the preferred alternative.

19 RICHARD JOHNSON: So the 50 that we're seeing  
20 is probably, if not the determinant, one of the  
21 greatest weighted determinants in moving to  
22 Alternative 4?

23 Okay. The risk level at 50 parts per  
24 billion. You spent some time explaining the risk  
25 level and why that particular level is important.

1           If that were 10 parts per billion lower, you  
2 said it will impact the decision significantly?

3           TERRY THONEN: If the contamination -- the  
4 current contamination in the hot spot --

5           RICHARD JOHNSON: Yes.

6           TERRY THONEN: -- was below the 10 parts  
7 per billion below 50 was the case, that would impact  
8 the decision.

9           RICHARD JOHNSON: So the  $10^{-4}$  risk level --  
10 that is the red light, so to speak?

11          TERRY THONEN: Yes.

12          SCOTT MARQUESS: This area, the average  
13 concentration is in the [unintelligible]--portion of the  
14 plume --[unintelligible] (Multi-person conversation)

15          TERRY THONEN: Average concentration, Scott?

16          SCOTT MARQUESS: Yeah. Well, either about 50  
17 -- Around 100 [unintelligible]-- $10^{-4}$ --[unintelligible]

18          RICHARD JOHNSON: We're just trying to figure out  
19 what the average was.

20          RODGER ALLISON: And when you say this area,  
21 you're talking hot spot reduction?

22          RICHARD JOHNSON: Yeah. The inside value is 3.9  
23 -- inside the 50 ppb . Does that sound right?

24 [unintelligible] 1.4 [unintelligible] 61

25 [unintelligible].

1           SCOTT MARQUESS:     [unintelligible] That's what  
2 our observation was.

3           TERRY THONEN:    Yeah.

4           RODGER ALLISON:   Scott said average concentration  
5 was about 120.

6           TERRY THONEN:    Oftentimes when we do those  
7 estimates within the hot spot and the risk assessment  
8 there's only 3 points within the hot spot, we would  
9 select the highest concentration, so  $2.1 \times 10^{-4}$  is most  
10 likely calculated from the 120 parts per billion. But  
11 you said it's pretty close to 100.

12 (Multi-person conversation)

13           ERIC ORTH:     If you look on Page 5 of the document  
14 you'll find a paragraph that details that 61 parts per  
15 billion corresponds to a risk of  $1 \times 10^{-4}$ .  $1 \times 10^{-4}$  is  
16 really the action level we're trying to get below. And  
17 they're saying for the plume, the risk is 2.1 to the  
18 negative 4.

19           Since that's higher than the  $1 \times 10^{-4}$  associated  
20 with the 61 parts per billion, it means that they looked  
21 at a higher volume than 61 to assess the risk.

22           And the 6.1 -- that's a  $1 \times 10^{-5}$  risk level seems  
23 to be what you're saying was observed in the residential  
24 well, which is 25 actually  $10^{-5}$ .

25           RICHARD JOHNSON:   So even the residential wells

1           in that area that are exposed are well below  
2 that.

3           ERIC ORTH: Yes. That's probably  
4 a function of the fact of from what I saw here the  
5 depth of the well is substantially lower, which is  
6 also an argument for not doing something like  
7 pumping where you may disturb the natural aquifer.

8           TERRY THONEN: To try to help explain one of  
9 the things I'm going to get the posters. You can  
10 look at either one of these.

11           There is a clean zone in the top 20 or 30 feet.  
12 Those sand points do not extend beyond this. That's  
13 where the folks that are located -- and this is where it  
14 gets a little complicated -- that's where the folks are  
15 located in the hot spot.

16           We have a continuous source, Brush Creek. The  
17 continuing source is upgradient of these wells around  
18 Brush Creek. This is the location around Brush Creek  
19 where the shallow area was. So the few residents that  
20 are here on old Highway 61 that have impacted shallow  
21 water which just pretty much came out of Brush Creek as  
22 the model predicts within a year or two. The model said  
23 within a year or two water from Brush Creek will  
24 reach [unintelligible] and proceed -- over the last few  
25 years, Brush Creek concentrations have fluctuated from

1 6 parts per billion down to two or three and up to --

2 RICHARD JOHNSON: But this plan doesn't address  
3 the Brush Creek concentration. This plan addresses  
4 downstream, so to speak, from Brush Creek.

5 TERRY THONEN: Yes, Sir. This alternative does  
6 not address Brush Creek concentrations. It only  
7 addresses the residual groundwater contamination from  
8 past Brush Creek sources.

9 RICHARD JOHNSON: And as you've said, for this to  
10 work within the model that you have set up, the  
11 the contamination from Brush Creek must be addressed?

12 TERRY THONEN: Must be addressed.

13 SCOTT MARQUESS: [unintelligible] In order to get  
14 the off-post groundwater to [unintelligible] to go away  
15 [unintelligible]. So on your other question, what are  
16 you going to do about what's in Brush Creek. What I  
17 understand is that the plan about to be submitted to the  
18 Army is to do some point source discharges from Brush  
19 Creek -- it's one of the initial steps to trying to  
20 reduce the concentration exiting in the creek including  
21 -- I think Terry indicated that the RDX levels were 100  
22 parts per billion. I'm not sure that's -- I think what  
23 you stated in the proposed plan the levels are typically  
24 low. I think the permit allows 750 ppb RDX plus HMX?  
25 Does that sound right? So --



1           TERRY THONEN: Yeah, that's more of an  
2 accurate statement than -- the NPDES levels are less than  
3 that -- they are discharging less than 100.

4           SCOTT MARQUESS: So anyway there is a  
5 load of RDX that's being discharged to Brush Creek  
6 under the national discharge elimination system  
7 permit from sources on-post. Four of those -- I  
8 believe four specific locations have been  
9 identified, one of which is significant as the  
10 wastewater treatment plant. It's by far the highest  
11 flow to Brush Creek. In the past there has been  
12 sewer lines infiltration of contaminated groundwater and  
13 discharge due to sewer line, untreated, in Brush  
14 Creek.

15           There's been a significant how-many-year  
16 project to renovate the sewer line system of the  
17 plant to reduce the infiltration of groundwater to  
18 eliminate this sewage treatment in the sewer lines  
19 being discharged to Brush Creek.

20           So elimination of NPDES point sources and  
21 elimination of RDX from wastewater treatment plant  
22 sewer line infiltration are two things that  
23 [unintelligible] should be eliminated in the near term  
24 to begin the process of abating the RDX from Brush  
25 Creek. So the big picture will be [unintelligible].

1           TERRY THONEN: Is there any further  
2 questions?

3           BRUCE WORKMAN: Bruce Workman. RAB member.  
4           Thank you. You answered many of my  
5 questions.

6           So will the source actually be eliminated  
7 before this remedial action is started?

8           TERRY THONEN: Under the current schedule,  
9 the pilot scale testing for this would be  
10 implemented before Brush Creek is addressed.

11          SCOTT MARQUESS: Well, one thing, just -- I  
12 was referring to NPDES known discharges to the creek.  
13 Those don't go away unless you have [unintelligible].

14          BRUCE WORKMAN: Just due to surface  
15 contamination? You don't know what --

16          SCOTT MARQUESS: The reason we're doing the  
17 off-post before we are doing the on-post is because  
18 we know what the off-post situation is. We don't  
19 have -- The on-post answer is a lot more  
20 complicated. Otherwise that would be --

21          BRUCE WORKMAN: You said you have a permit. When  
22 does that expire?

23          RODGER ALLISON: It is an ongoing permit, but I  
24 I don't know when the permit --

25          JOHN CARROLL: John Carroll.

1           In March of '05 we will apply for a new permit.

2 Our renewal permit which is [unintelligible]

3           (Multi-person conversation.)

4           BRUCE WORKMAN: So it sounds like mid-2005 is  
5 when the new permit will be in place. And we just renew  
6 the current permit.

7           So the cleanup on the RDX -- you're allowed to  
8 have in the discharge or will that -- The point I'm  
9 getting to, if you're going to continue to discharge, why  
10 begin the cleanup?

11          SCOTT MARQUESS: If we've got a hot spot of 120,  
12 we'll get -- Like I said, if we didn't do anything we  
13 got 120. So it gets below 15 in five years, three  
14 years, whatever. What you got for a low now is 10 to  
15 20, or whatever it is in Brush Creek. You've still got  
16 [unintelligible]. Until we can deal with the stuff in  
17 Brush Creek, we do not have a solution there but at  
18 least an initial step towards dealing with that are  
19 these steps.

20          BRUCE WORKMAN: So addressing Brush Creek means  
21 a combination of things?

22          SCOTT MARQUESS: Right. And if we had that  
23 answer, that would be the action you'd be talking  
24 about now.

25          BRUCE WORKMAN: Okay.

1           ERIC ORTH: And then in response to your  
2 question about why do 4 instead of 2. I don't know. The  
3 remedial action 4 rather than 2. I don't know. I'm not  
4 speaking for other people, but there may be some  
5 liability involved if no action is taken. If things  
6 change in the future --

7           SCOTT MARQUESS: To me, it's more of a -- I see  
8 your point. What's another 5 years or whatever.  
9 The point though is to identify the problem and work  
10 as quickly and as expeditiously as we can within the  
11 boundaries, balance the cost. And I think you  
12 raised a good question.

13          RICHARD JOHNSON: Richard Johnson. RAB  
14 member.

15          The 5 to 8 year figure in Alternative 2 and  
16 the under-5 year figure in Alternate 4 bringing that  
17 hot spot down. Are those lengths of time predicated  
18 on the understanding that the cleanup project on  
19 Brush Creek itself will start after the beginning of  
20 this project?

21          TERRY THONEN: Well, that's a very good question.  
22 I would have to go back and look at it to properly  
23 address that question.

24          SCOTT MARQUESS: I think if you go back and look  
25 at the slides --

1 (Multi-person conversation.)

2 TERRY THONEN: Overall the result is generally  
3 the same between addressing the creek and not addressing  
4 the creek. But without looking to see -- And I'm sure  
5 it's different -- Let's say a 12-month period. But it  
6 is very similar, whether you address the creek or not  
7 address the creek.

8 RICHARD JOHNSON: In the short term.

9 TERRY THONEN: -- in the short term. We will  
10 still be able to reduce down to below 50. The added  
11 benefit of the enhanced degradation barrier system  
12 is that you'll reduce concentrations possibly much  
13 lower than 50.

14 RICHARD JOHNSON: Do you have a model that  
15 would show anticipated reduction rates using the  
16 barrier and not using the barrier?

17 TERRY THONEN: Yeah. Actually, that's what  
18 these pretty much are. You can look at the model  
19 results and you can pick out areas in the model and  
20 see concentrations over time. And what we showed  
21 here was just a view of it. Everything greater than  
22 2 parts per billion and the various levels.

23 But we evaluate each alternative, you know,  
24 MNA versus focused extraction versus EDB.

25 RICHARD JOHNSON: Along that line, as the hot

1 spot at 60 to 70 feet dwindles or degrades, do you have a  
2 model that talks about what your anticipated rates of  
3 contamination in the surface area for the sand points  
4 are? Will that degrade at a similar rate, or will it be  
5 more dependent upon the Brush Creek solution being in  
6 place?

7           TERRY THONEN: The residents that are located  
8 closer to Brush Creek that have sand points that are  
9 contaminated will not necessarily be impacted by the  
10 preferred remedial alternative.

11           RICHARD JOHNSON: What about the residents  
12 that are in the hot zone? How much of an impact will  
13 this have? We're looking at reducing -- at the sampling  
14 level -- reducing that about 36 months faster. What  
15 about at the level where this gentleman's well is  
16 located? How much of a decrease will you see in that?  
17 Or can you even estimate that?

18           TERRY THONEN: The residents that are closest to  
19 Brush Creek will be affected by the change in Brush  
20 Creek concentrations most significantly. The residents  
21 that are sitting over in the current hot spot area -  
22 the central hot spot area - are currently not  
23 necessarily impacted by the hot spot.

24           RODGER ALLISON: Allow me to clarify. When you  
25 say that they're in the plume, they're -- the resident

1 sits above, but their well doesn't go deep enough.

2 RICHARD JOHNSON: The well is roughly 30 to  
3 40 feet above there. So they're not necessarily --  
4 That well is not necessarily going to be impacted by  
5 the treatment taking place at roughly 60 to 70 feet?

6 TERRY THONEN: Correct. The current  
7 monitoring results indicate that the residents'  
8 private well that we've sampled that are still  
9 connected in the hot spot area is non-detect. The  
10 RDX concentrations are not detected.

11 RICHARD JOHNSON: So you're saying that  
12 they're below the 2 parts per billion.

13 TERRY THONEN: They are below the 2 parts per  
14 billion.

15 RODGER ALLISON: There's only two, and they  
16 were right beside the creek that had wells.

17 RICHARD JOHNSON: But they're not going to be  
18 directly impacted by treating the hot spot if  
19 they're right beside the creek.

20 Okay, so I'm back to my original question. You  
21 have one resident who currently has a well that's  
22 exposed. The other residents have connected to  
23 Rathbun. They are -- For all intents and purposes  
24 they are at no risk from this contamination. Would  
25 that be a safe statement to make?

1           SCOTT MARQUESS: People not using the water  
2 are at no risk.

3           RICHARD JOHNSON: So you have one resident  
4 who has a well that's exposed and that is the source of  
5 water for that residence. But you're saying that  
6 resident's well tests below the HAL level of 2 parts  
7 per billion. Is that correct?

8           TERRY THONEN: The resident that has no  
9 connection to city water, the last result I believe was  
10 about 6 parts per billion. Which is above the HAL.

11          RICHARD JOHNSON: That's what I wanted to get  
12 at. Okay.

13          I want to try to state this. The drop in  
14 contamination at his well. If we assume to do MNA  
15 or do Alternative 4 with MNA, will there be any  
16 difference in the rate at which his contamination  
17 drops at that well?

18          TERRY THONEN: The current location of the  
19 Enhanced Degradation Barriers is downgradient of that  
20 well.

21          RICHARD JOHNSON: So they won't affect the  
22 contamination in that well -- down water --  
23 downstream so to speak?

24          TERRY THONEN: Yes. That well's greatest  
25 impact will be from Brush Creek for that particular



1 well.

2           RICHARD JOHNSON: So we're spending \$1.6  
3 million as roughly insurance to make sure that we  
4 get the problem nipped?

5           SCOTT MARQUESS: That would be one way of  
6 putting it.

7           DAN COOK (Iowa DNR): Looking at the maps  
8 that you've shown, the modeling as time progressed,  
9 looking at the separate models for the monitored  
10 attenuation of the enhanced degradation, at the hot  
11 spot you can see quicker overall decrease. And you  
12 see the plume decrease quicker. If you remember  
13 that last slide you showed, the last part of that  
14 model or the enhanced degradation showed that long  
15 lasting part down below. And that's what carried it  
16 out there from 20 to 35 years. But if we look at the  
17 one where it's just monitored attenuation, the whole  
18 area decreases slower. So actually, having an enhanced  
19 degradation barrier decreases larger portions of the  
20 plume quicker so more people are getting out of the  
21 plume quicker using that process.

22           RICHARD JOHNSON: But are the people that are  
23 in the plume exposed to a risk currently?

24           DAN COOK: As long as they're hooked up to rural  
25 drinking water; as long as they're drinking rural water.

1           JOHN CARROLL: The Army has the responsibility to  
2 return the environment back to as close to pristine as we  
3 can, and so we're required to clean it up.

4           RICHARD JOHNSON: But it seems to me the  
5 focus should be on cleaning up Brush Creek  
6 discharge.

7           RODGER ALLISON: It's in the works.

8           RICHARD JOHNSON: I guess what I'm  
9 getting to, that additional 36 months that we  
10 anticipate the hot spot being cleaned up faster is  
11 going to cost 1.6 million approximately, assuming  
12 those costs don't increase down the road, because  
13 I'm assuming those aren't firm costs yet because you  
14 still have to do the pilot which there will be costs  
15 variance in that. If we have another 1993, with  
16 that kind of rainfall where you got 11 inches  
17 hitting out there, that's going to change the model,  
18 that's going to change your --

19          SCOTT MARQUESS: Part of what you're  
20 looking at here is you've got a passive barrier and  
21 you've got contamination upstream. What's taking  
22 that 3 to 5 years is for the contamination upstream  
23 to all pass through this barrier. When it goes  
24 through the barrier it is basically turbocharging it  
25 and dropping it down.

1           Now, what we're not talking about here when  
2 we're talking about hot spot remediation -- if you  
3 go with MNA alone, this 50 that's sitting right  
4 here, is now 20 or 30 out in here. If you go with  
5 the reactive barrier wall or whichever we end up  
6 doing here, the 50 that starts here comes through  
7 here as 2. So you're no longer talking about the  
8 hot spot. What you're getting for that 1.6 is that  
9 this spot downstream is being cleaned up as that  
10 moves through. And that's what's not being  
11 reflected in saying the hot spot's being cleaned up  
12 in the same amount of time. The hot spot's being  
13 cleaned up in the same amount of time because that's  
14 how fast the water's going. It's got nothing to do  
15 with the actual treatment. But if you're just  
16 letting it go, then, okay, now you go 49, 48, as it  
17 spreads out, disperses, as it gets absorbed, as it's  
18 treated. We'll drop a couple per year out in this  
19 zone. This zone is where that \$1.8 million is being  
20 used. And I think his slides may show that in terms  
21 of the rate you see.

22           TERRY THONEN: Yeah, there is a difference  
23 between MNA and the EDBs in the -- we always refer  
24 to it as the hot spot area -- in the hot spot area.  
25 It does go away a few years earlier.

1           More importantly though it reduces it below  
2 50 parts per billion. What we didn't say was how  
3 far below 50 parts per billion it will reduce.

4           Under the EDB scenario, let's assume that  
5 reduces to 2 parts per billion, below HAL, as it  
6 goes through the treatment zone. Under the MNA  
7 scenario as it goes on 50, it's 49, and then it  
8 continues on its way. It is transported downgradient  
9 at 40 and then 30 and then 25.

10          So what has happened over time here is that  
11 the continuing source of contamination from Brush  
12 Creek has changed from a source of high ppm  
13 concentration to low part per billion concentration.  
14 And our conceptual model is that Brush Creek at low  
15 parts per billion concentration has initiated the  
16 cleanup of the off-site plume.

17          What we see today is just the remnant of an  
18 area over here to the side that is not impacted by  
19 Brush Creek as much as the area between Brush Creek  
20 and Skunk River. This area -- there's a couple of  
21 models that we showed with arrows -- this area is  
22 flushed very very quickly every few years. This area  
23 is only flushed every five to six years on the model.

24          RODGER ALLISON: So this flushing of the lower  
25 concentration parts per billion model has actually

1 helped clean up this area. So it's --

2 RICHARD JOHNSON: I guess the question I know I'm  
3 going to be asked as a RAB member by community members is  
4 that we put this additional \$1.6 million -- the cost  
5 difference between Alternative 2 and Alternative 4 -- if  
6 we put this in, what are we getting for it? We already  
7 agreed that, except for this one person who really won't  
8 be affected by the project, there's no humans at risk.

9 TERRY THONEN: Uh-huh.

10 RICHARD JOHNSON: No livestock at risk. No  
11 agriculture at risk. No risk difference to the folks  
12 living on the surface under either model. Correct?

13 SCOTT MARQUESS: As long as you have  
14 contamination there, you will have opportunity to  
15 fail.

16 SCOTT MARQUESS:: Understand, long term  
17 absolutely. Short term, it's -- and one way to look at  
18 it might be the mass removal rate. It's going to be  
19 faster.

20 RICHARD JOHNSON: I don't disagree with that.

21 SCOTT MARQUESS: I know this creek's path.

22 TERRY THONEN: The potential for risk remains.

23 SCOTT MARQUESS: And again, keep in mind these  
24 are all models.

25 RICHARD JOHNSON: Uh-huh.

1           SCOTT MARQUESS: They could be plus or minus  
2 something.

3           RICHARD JOHNSON: Plus or minus 36 months.

4           Okay. I think I beat this horse. Thank you for  
5 your patience.

6           TERRY THONEN: You bet.

7           Any further questions? Comments?

8           SCOTT MARQUESS: I just have one. Is it correct  
9 that there's going to be a plan to evaluate point source  
10 discharge to Brush Creek to the Army in the next week or  
11 so? Is that accurate?

12          RICK ARNSETH: Yes.

13          RODGER ALLISON: And those responding were Rick  
14 Arnseth of Tetra Tech. I would add I think I  
15 heard another yes from Steve Muffler.

16          All right. Not hearing any other questions  
17 or concerns, we will close the meeting. And I look  
18 forward to receiving any written comments that any  
19 of you may have. We have the verbal comments here  
20 on record, and they will be part of our record of  
21 decision.

22          So, once again, thank you everyone. And good  
23 evening.

24          (Proceedings concluded at 9:02 p.m.)

25

IN ATTENDANCE:

<u>NAME</u>	<u>ORGANIZATION</u>
Eric Orth	RAB Member
Bruce Workman	RAB Member
Richard Johnson	RAB Member
Roger Walton	AEC Project Manager
Scott Marquess	U.S. EPA
Steve Bryant	Tech Law (U.S. EPA Contractor)
Daniel Cook	Iowa DNR
Rodger Allison	Iowa AAP
John Carroll	Iowa AAP - AO
T.R. McKenzie	Iowa AAP - AO
Terry Thonen	URS Corporation
Jon Ritterling	URS Corporation
Kevin Wunder	URS Corporation
Corey Anderson	URS Corporation
Rick Arnseth	Tetra Tech
Clifton Blanchard	Tetra Tech
Steve Muffler	Tetra Tech