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TRANSCRIPT OF PROCEEDINGS

NASA/JPL CERCLA RPM MEETING
THURSDAY, DECEMBER 5, 2002
4800 OAK GROVE DRIVE
PASADENA, CA 91109

1 APPEARANCES :

2	NAME	AFFILIATION
3	KEITH FIELDS	BATTELLE
4	DAVID CLEXTON	BATTELLE
5	MARK RIPPERDA	USEPA
6	RICHARD GEBERT	DTSC
7	PETER ROBLES	NASA
8	LINDA HOLLINGSWORTH	SWDIV
9	JUDY NOVELLY	JPL
10	KEN MARTINS	CH2MHILL
11	CHUCK BURIL	JPL
12	RICHARD ZUROMSKI	NAVY
13	SVREE AKKENAPALLY	GEOFON
14	AZRAH FAHEEM	GEOFON
15	MICHAEL POUND	NAVAL FACILITIES
16	RICHARD ATWATER	RAYMOND PLAN
17	JEFF O'KEEFE	CDHS
18	ALAN SORSHER	CDHS

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1 Pasadena, California, Wednesday, December 5, 2002

2 9:50 a.m.

3

4 MR. ZUROMSKI: Okay. I'm going to go ahead and get
5 started.

6 My name is Richard Zuromski. I'm with the
7 Naval Facilities Engineering Service Center. And the first
8 thing I'm going to do is pass around an agenda. Please take
9 a copy and pass them down. There should be plenty for
10 everybody.

11 As we normally start off our meetings, what we like
12 to do is go around the room and have everybody say and spell
13 their last name and say where you're from. And also if you
14 could -- there are some new people here in the room today, if
15 you could maybe say what your involvement is in this process,
16 that would be great.

17 So I'm Richard Zuromski, Z-u-r-o-m-s-k-i, and I am
18 the Navy project manager working with NASA for the CERCLA
19 program.

20 Chuck.

21 MR. BURIL: Chuck Buri1. Last name B-u-r-i-1. Manager
22 for JPL Environmental Affairs.

23 MR. ATWATER: Richard Atwater. Atwater, A-t-w-a-t-e-r.
24 Consultant to the Raymond Basin Management Board and have
25 been a consultant to them for the last four or five years

1 related to the NASA JPL Superfund site.

2 MR. POUND: I'm Michael Pound, P-o-u-n-d. I'm with
3 Southwest Division Naval Facilities Engineering Command where
4 I'm the deputy chief environmental engineer, and I help
5 support Richard and Linda's program.

6 MR. FAHEEM: My name is Azrah Faheem, F-a-h-e-e-m. I am
7 from GEOFON. We are working on the OU-2 SVE pilot
8 operations.

9 MR. AKKENAPALLY: My name is Svree Akkenapally, and
10 Akkenapally is spelled A-k-k-e-n-a-p-a-l-l-y. I'm the
11 project engineer supporting Azrah and Tony Ford with GEOFON.

12 MS. HOLLINGSWORTH: Linda Hollingsworth. I work for the
13 Navy Southwest Division, and I'm the lead RPM for JPL for
14 Southwest Division.

15 MR. SORSHER: I'm Alan Sorsher. It's A-l-a-n
16 S-o-r-s-h-e-r. I'm with the California Department of Health
17 Services, drinking water program, and we're involved with
18 issuing any necessary permits for the City to use this
19 treated water.

20 MR. GEBERT: I'm Richard Gebert, G-e-b-e-r-t. I'm with
21 the State of California, Department of Toxic Substances
22 Control, and I'm the Remedial Project Manager for DTSC on
23 this project.

24 MR. RIPPERDA: I'm Mark Ripperda, R-i-p-p-e-r-d-a. I'm
25 with the U.S. EPA. I'm project manager overseeing the

1 Superfund cleanup.

2 MR. O'KEEFE: Jeff O'Keefe, O, apostrophe K-e-e-f-e. I'm
3 with the California Department of Health Services, along with
4 Alan, and we're involved with permitting the City of Pasadena
5 to use the treated water.

6 MR. MARTINS: I'm Ken Martins, M-a-r-t-i-n-s, with CH2M
7 Hill, and we're a contractor to the Navy and NASA, supporting
8 their efforts.

9 MS. NOVELLY: Judy Novelly, N-o-v-e-l-l-y, JPL
10 Environmental Affairs Office.

11 MR. CLEXTON: David Clexton, C-l-e-x-t-o-n. I'm with
12 Battelle. I'm assistant project manager. I work with
13 supporting the Navy.

14 MR. FIELDS: Keith Fields, F-i-e-l-d-s. I'm with
15 Battelle, and we are contractor to the Navy and NASA.

16 MR. ROBLES: Peter Robles, R-o-b-l-e-s, and I'm the NASA
17 RPM manager.

18 MR. ZUROMSKI: Okay. Great.

19 So we'll get right into the agenda. On Item
20 No. 2, project overview and schedule items are issues.

21 I think that most of the items that are on this
22 agenda that have to do with schedule, we'll probably just
23 take care of as we get to that specific item. But a few of
24 the things I did want to go over that -- are not
25 explicitly on this agenda are, No. 1, the fact sheet.

1 I don't know -- we had talked about a fact sheet a
2 while back, and we were going to put out a fact sheet for
3 community relations purposes. And we're going ahead and
4 revising that right now based on our potential public meeting
5 that we're going to have for the OU-3 EE/CA.

6 So what I want to do is let you know that that's
7 kind of on hold right now. I know I distributed a copy of
8 that to you quite a while back as a draft, and I think what
9 we're going to do right now is revise it to use it not only
10 as a fact sheet, but also as an announcement for the public
11 meeting, so we can kind of -- kill two birds with one
12 stone. So that should be forthcoming, and also based on our
13 discussion on Item No. 7 later this afternoon.

14 The other thing I want to talk about in support
15 activities, we actually are currently doing groundwater
16 monitoring on the facility. That's our quarterly monitoring
17 round, and that is actually just finished, I think, a couple
18 of days ago. And now we're going into doing some additional
19 sampling for 97-005. And, again, we'll probably talk about
20 that in a little more detail later.

21 Groundwater modeling, overall I think that we had
22 talked about the final report. I think the final report is
23 complete for the modeling and is probably -- if it's not
24 already, it should be put into the administrative record
25 fairly soon, and we'll be updating in the repositories.

1 But I think that based on the comments that
2 everybody had -- and I think we'll talk about some of
3 DTSC's comments today. I think that came along with the
4 EE/CA comments that you presented us. I think that, overall,
5 if those response to comments are acceptable, I think that's
6 going to go final and put into the record.

7 We have soil vapor monitoring that's ongoing. We
8 just finished a round about two weeks ago. And I think we're
9 going to kind of go through some of the points of that data
10 when we get into OU-2.

11 And then the rest -- pretty much everything else
12 has to do with OU-1 pilot studies and the OU-3 EE/CA, and
13 those we'll talk about later today.

14 The only other thing I think that's on the
15 agenda -- or that's not on the agenda that I wanted to
16 mention was the OU-1 and OU-3 feasibility studies. We're
17 starting those right now. As we had talked about earlier,
18 we're going to do those in parallel with the OU-3 EE/CA, and
19 we're starting to work on those as we speak, and hopefully
20 sometime in the springtime we'll get some of those out for
21 review by the people at this meeting.

22 And finally, I think that we announced at the last
23 meeting the record of decision has been signed and the
24 newspapers notices did go out, and the record of decision is
25 available at the document repositories for review. We

1 actually did have -- Peter and I did have one person call
2 from the public to want to access the OU-2 ROD on the
3 electronic version at one of the libraries. So that means
4 that the newspaper notices were effective. Somebody did see
5 them out there. And somebody actually did want to review the
6 record of decisions. So that was interesting.

7 And other than that, I think that -- unless anybody
8 else has any other overall general scheduling questions,
9 we're just going to keep moving into item No. 3.

10 Does anybody have questions on item No. 2?

11 Great.

12 Hearing none, operable unit 3 operations: I'm
13 going to go through a couple of these things, and then I have
14 GEOFON here. We're going to maybe talk about a few other
15 things as well.

16 First off is the draft final RDRA. I think that
17 I've responded to your comments, Richard and Mark, on the
18 draft RDRA. I think that was a while back. And the draft
19 final is going to be due to me on the 13th of December. So
20 after that, I'll turn that over to you for review. And I
21 know that we didn't have a lot of comments on it based on the
22 draft, so if it's -- again, like we always do, we'll give you
23 the normal -- you know, we'll give you 30 days, and if you
24 can do it in less than 30 days, then we'll get it out sooner.
25 If not, then we'll do it in the full time that we need. And

1 so, again, that will come out to me on the 13th. So if I
2 don't send it to you that same day, it will probably be
3 Monday the 16th when you'll receive it.

4 The SVE pilot test status, I'm just going to talk
5 really generally first, and then I'm going to let
6 Azrah and Svree talk really quick. But the pilot study we
7 started up at VE-03, which was one of the three wells that we
8 drilled during the summer, and we've been operating that for
9 about two months now --

10 MR. AKKENAPALLY: We started on October 30th.

11 MR. ZUROMSKI: October 30th. So we've been doing it for
12 a month and a half. And what's happening is that we're
13 seeing actually some of the VOCs are being drawn into the
14 system, but not really at a level that we thought we would
15 see in that area. And so our plan right now is to continue
16 to operate the system in accordance with the operating plan
17 in the pilot study work plan, as well as the Army Corps
18 literature, and -- but we don't think that maybe more than
19 another two months of operation at this point is going to be
20 necessary at that location before we move the system to the
21 second location, which would be, I think, VE-02.

22 MR. AKKENAPALLY: Yes.

23 MR. ZUROMSKI: So did you guys have anything else to
24 add? I know that you guys have been out there working
25 on that.

1 MR. FAHEEM: The data was sent yesterday.

2 MR. ZUROMSKI: Right. Correct.

3 MR. FAHEEM: And yeah. We do have -- as you said, there
4 is an increase --

5 MR. ZUROMSKI: Right.

6 MR. FAHEEM: -- steady increase in the concentration.
7 And definitely we will look for more and make a decision as
8 the data comes in.

9 MR. ZUROMSKI: Right. I think when we talk about an
10 increase in concentration, some of the concentrations that
11 we're seeing right now -- and I'll most likely e-mail this
12 report out. I just received it yesterday.

13 THE COURT REPORTER: Excuse me. One at a time, please.

14 MR. ZUROMSKI: Right. That's right. I'm sorry. That
15 was another ground rule I forgot to talk about in the
16 beginning. Make sure everybody only speaks one at a time so
17 the court reporter can get everybody at the same time.

18 MR. SORSHER: Do we have to swear in or --

19 MR. ZUROMSKI: No, not at all. Not at all.

20 But a couple of the numbers I did want to mention,
21 I think that the highest that we've seen on influent at VE-03
22 for carbon tet is 22 parts per million by -- parts per
23 billion -- excuse me -- by volume, and using T/O 14 method.
24 And that's really the -- I guess we also see TCE at 36 parts
25 per billion by volume as well.

1 So the numbers are fairly low. But as Svree and
2 Azrah said, they are gradually increasing, so that's why we
3 want to continue to operate the system and see what we can
4 pull out of there before we shut it down or wait for a
5 rebound.

6 MR. GEBERT: Excuse me, Richard. Which well is this?
7 VE --

8 MR. ZUROMSKI: VE-03.

9 MR. GEBERT: VE-03.

10 MR. ZUROMSKI: Right. We decided to start with that one
11 first because based on the sampling results on our sampling
12 rounds, that was most likely to be the one with the highest
13 concentrations of VOCs.

14 But like I said, the levels overall are still
15 fairly low, but we're going to continue to pull on that at
16 least in the next couple of months while we evaluate the
17 data.

18 MR. RIPPERDA: So what does that convert to in mass rate
19 per day?

20 MR. ZUROMSKI: I think that we haven't removed a pound.

21 MR. AKKENAPALLY: Well, close to a pound.

22 MR. ZUROMSKI: Close to a pound.

23 MR. AKKENAPALLY: First two weeks we pulled about half a
24 pound. Maybe more than half a pound.

25 MR. ZUROMSKI: So almost a pound in a month and a half,

1 yes.

2 So it's definitely -- so from the -- you know, from
3 the analysis, it's definitely worth continuing to operate the
4 system right now, but as we know, with the procedure that
5 we're using, there is going to be a point where we're going
6 to say maybe it's more cost effective to shut it off, wait
7 for rebound, move to the next location.

8 Just for Alan and Jeff, what we're doing is when we
9 hit an asymptotic level at one location, we shut the system
10 off -- it's mobile. It's on a trailer -- then we'll move it
11 to the next location, extract on that location, hit rebound,
12 and basically move back. So just because we're finishing at
13 one site doesn't mean we're not going to go back to it. It's
14 just that we're going to let it rebound before we go back to
15 it just from an efficiency basis.

16 MR. SORSHER: What volume are you extracting as far
17 as --

18 MR. ZUROMSKI: I'm not --

19 MR. SORSHER: -- CFMs?

20 MR. AKKENAPALLY: Flowrate is -- approximately 450 CFM.

21 MR. SORSHER: That's a pretty big volume.

22 MR. ZUROMSKI: Right. And our radius of influence
23 was --

24 MR. AKKENAPALLY: About 350 feet.

25 MR. ZUROMSKI: Yeah. That's pretty large.

1 So that's the general update on the SVE pilot test.
2 Again, the reason it's still a pilot test is 'cause we
3 haven't finalized our remedial design. And once that's
4 finalized, it will become the remedial action.

5 So does anybody else have any other questions as
6 far as the SVE pilot test goes?

7 MR. AKKENAPALLY: And we will be following the
8 Army Corps rebound test procedures.

9 MR. ZUROMSKI: Correct.

10 Okay. Then the next one is the SVE well
11 installation data, which we had talked about briefly at the
12 last RPM meeting. And a lot of that data that we're using,
13 especially from the soils data, we're trying to incorporate
14 that into our OU-1 pilot study to see how the information
15 correlates, especially with respect to perchlorate.

16 We'll talk about this a little later. But the
17 funny thing is that we're seeing no perchlorate in soil in
18 our pilot study area, which is the hot spot on the facility.
19 And we saw low levels of perchlorate in the lower -- or I
20 guess the upper-lower vadose zone in the SVE wells that we
21 drilled. So we're trying to figure out why that is right now
22 and proceed from there.

23 But I don't know if you guys -- we submitted that
24 to you, I think, either the day of or the day after the last
25 RPM conference call, and I didn't know if you had any

1 questions on that data or not.

2 MR. GEBERT: I looked at it.

3 MR. ZUROMSKI: Okay. We're still trying to interpret it
4 and see what it really means is the -- I guess the point
5 right now.

6 MR. AKKENAPALLY: (inaudible) of data would be the perched..

7 MR. ZUROMSKI: Right. Which is one thing we didn't see
8 at our OU-1 pilot test, which we'll talk about later, is that
9 we didn't see the perchlorate in that area because
10 we -- possibly because of -- and actually it was some silt
11 lenses and perched aquifer areas that we hit on the SVE wells
12 that we haven't seen at the OU-1 pilot study area so -- but,
13 again, we're trying to figure out exactly what all that means
14 right now.

15 Okay. But for the most part, OU-2 is moving along
16 fast and furious, and unless anybody else has any other
17 questions on OU-2, we'll move into item No. 4.

18 Okay. OU-3 EE/CA comments and discussion. What I
19 want to do is I think that I sent -- well, I know I sent to
20 yours -- I think Hooshang actually sent you your copy of the
21 response to comments?

22 MR. GEBERT: Yes. I got two e-mails from him.

23 MR. ZUROMSKI: Yeah.

24 MR. GEBERT: One saying here are the comments --

25 MR. ZUROMSKI: Right.

1 MR. GEBERT: -- and after that another one saying --

2 MR. ZUROMSKI: Right.

3 MR. GEBERT: -- disregard these --

4 MR. ZUROMSKI: So that's why I -- that's why I said that
5 here are the comments. So we're going to give you the
6 comments today, so if everybody could just take a copy of
7 each of these -- there are two documents. There's plenty for
8 everybody -- and pass it around.

9 These are -- the first one you're going to get are
10 the DTSC comments on the OU-3 EE/CA, and the second one are
11 the EPA comments on the OU-3 EE/CA.

12 And since Mark's are shorter, I'm going to go
13 through Mark's first, and then we'll go through yours,
14 Richard, after that.

15 So we'll just take a moment, and after these get
16 passed out, after you get a copy, just take a quick look at
17 them, and we'll go through them one at a time anyway.

18 Is that the DTSC? Alan, is that the DTSC comment?

19 MR. SORSHER: No. This is from Hill.

20 MR. ZUROMSKI: Okay. Can I have one of those,
21 actually? I gave mine away. Thanks.

22 So I will let you know -- oh, and as far as
23 Dave Young goes, I guess that kind of -- something else I
24 wanted to talk about.

25 Dave is sick today, and unfortunately we were going

1 to try to get him on the conference line, but we looked at
2 our conference line this morning, and it was somehow pulled
3 out of the wall prior to this meeting and is unable to
4 connect to Dave Young today. Dave wasn't sure if he was
5 going to make it anyway because I guess he has a bout of the
6 flu, and so unfortunately he couldn't be here.

7 One thing I did want to mention is that Dave is
8 going to be replaced, I think, in the near future by another
9 gentleman at the Regional Board. I'm not sure of his name.
10 But that's probably going to happen in the new year. And so
11 I was kind of disappointed that Dave couldn't be here today
12 because we could at least try to talk with him about what's
13 going on over there. But just to let everybody know that
14 we'll probably have a new RPM from Regional Board sometime in
15 the early new year.

16 And as far as Regional Board comments go, I've
17 talked with Dave on the phone a couple of times, and I think
18 we mentioned at the last RPM meeting we're going to give them
19 some extra time to comment on the EE/CA; however, they have
20 not commented on the EE/CA, and I don't think they're
21 planning on commenting on the EE/CA. So just to let you know
22 that really we're only going to deal with DTSC and the
23 EPA comments at that point.

24 So let's go through Mark's comments, the EPA
25 comments. There are just two pages here. For the most part,

1 if you look at the comments, comment No. 1, again, these are
2 mostly kind of textual comments.

3 And, Mark, I know that I don't want to go ahead and
4 finalize these today until you're comfortable with our
5 responses, but for the most part the first comment seemed to
6 be a semantical comment, which I think we're addressing, and
7 I don't know if you had any questions on that at all.

8 MR. RIPPERDA: No.

9 MR. ZUROMSKI: Comment No. 2, this is something that we
10 wanted to talk about was we hadn't really put in a lot of
11 detail on the 97-005 process in the EE/CA itself, and so we
12 wanted to talk about how that's going to impact the
13 implementation of the EE/CA. And you can see that our
14 response basically was that we would go ahead and do that and
15 how that will affect the EE/CA.

16 Does that sound reasonable and okay?

17 MR. RIPPERDA: Yes.

18 MR. ZUROMSKI: Comment No. 3, again, that's an easy one,
19 and that was more of a -- I think we were transferring so
20 many of the different alternatives back and forth that
21 somewhere in the mix the word was mixed up, so that was taken
22 care of.

23 Comment No. 4, "This paragraph states that the
24 spreading basins may be used as an interim measure," again,
25 some of the implementability problems that we hadn't fully

1 developed in the EE/CA, which we revised, state that, you
2 know, if we do go ahead and use the spreading basins, there
3 will be other procedures that we'll have to go through in
4 order to use them as a temporary disposal area.

5 So -- but, again, those will -- those responses
6 will -- or those sections of the EE/CA will be expanded to
7 discuss those possible other parts of the project that
8 weren't really in that much detail.

9 But these were all the EPA comments on the draft
10 EE/CA, and unless you have others at this point, we're going
11 to go ahead and finalize these as-is.

12 MR. RIPPERDA: This looks good.

13 MR. ZUROMSKI: Okay. Great.

14 Moving on then to DTSC comments, which is the
15 second memorandum, it's about five pages, I wanted to go
16 through -- these are -- Richard, these are both comments --
17 responses to your comments and to Richard Coffman's
18 comments --

19 MR. GEBERT: Right.

20 MR. ZUROMSKI: -- so I'm sure that you're probably going
21 to want to show him these --

22 MR. GEBERT: Yeah.

23 MR. ZUROMSKI: -- before we go ahead and finalize them.

24 MR. GEBERT: Yes.

25 MR. ZUROMSKI: Okay. So first comment, comment

1 No. 1, this was how the chemicals of interest were selected
2 for the EE/CA. This is going to be revised. And I'm going
3 to let -- actually, Ken, I thought that originally we were
4 going to write how we were going to revise it in the response
5 to comments, but I don't see it here.

6 And do you know offhand, could you maybe explain
7 the process or if -- maybe if you know the process of why we
8 went from 12 and down to 9 and down to 3 chemicals of
9 interest?

10 MR. ZUROMSKI: I know there's a process --

11 MS. HOLLINGSWORTH: I actually have a write-up on that.

12 MR. ZUROMSKI: Okay.

13 MS. HOLLINGSWORTH: If I can just remember where that
14 is...

15 MR. ZUROMSKI: Okay.

16 MS. HOLLINGSWORTH: Just a second. But -- 'cause we
17 have it in something else. Is that all right, or do
18 you --

19 MR. MARTINS: That's fine, no. 'Cause I wasn't prepared
20 to answer that, obviously.

21 MS. HOLLINGSWORTH: Okay.

22 MR. ZUROMSKI: Figured I'd put you on the spot.

23 MR. MARTINS: You did.

24 MS. HOLLINGSWORTH: See, I remember because I had
25 exactly the same question. So hold on just a second. I was

1 just looking at this before I came in.

2 MR. ZUROMSKI: I know there was a document somewhere
3 that explained our change, and I was just surprised not to
4 see it in this response document. That's why it kind of
5 caught me off guard there.

6 MS. HOLLINGSWORTH: If we could just come back to
7 that, and I'll just keep looking.

8 MR. ZUROMSKI: Okay. Let's go -- we'll go --

9 MS. HOLLINGSWORTH: I know I looked at it this morning.

10 MR. ZUROMSKI: I guess the overall general comment is,
11 yes, we will respond to your comment as you -- as you see
12 fit. I just wanted to at least show you our general response
13 in how we were going to plan to address it in the EE/CA, but
14 we can get back to that.

15 MS. HOLLINGSWORTH: I just found it. Here it is.

16 Well, this is -- this is at least the overall.

17 "The constituents of interest were based on data
18 obtained during the year 2000 quarterly sampling results. If
19 the upper limit of the 95 percent confidence interval
20 exceeded either the federal maximum contaminant level, the
21 California MCL, or the DHS action level, then the chemical
22 was identified as a constituent of interest. Three chemicals
23 were identified as constituents of interest based on this
24 criteria; carbon tetrachloride, trichloroethene, and
25 perchlorate."

1 And that's the main thing. So I mean this will be
2 more clearly stated in the other document. And, actually, I
3 think I've seen a longer write-up than this.

4 MR. ZUROMSKI: Yeah. I thought I did too. I thought it
5 was in this document. I was just surprised not to see it. I
6 think the key was that CHM2 Hill used the same analysis that
7 was used in the prior document. It's just that we used more
8 updated data. And based on the updated data, that's what we
9 came out with based on their data.

10 MS. HOLLINGSWORTH: Okay. But --

11 MR. GEBERT: Yeah. That's on the right track.

12 MS. HOLLINGSWORTH: Okay. All right.

13 MR. GEBERT: Probably just explaining how you got from
14 12 to 3.

15 MS. HOLLINGSWORTH: Right. Yeah. And I had --

16 MR. GEBERT: Why there is still 3.

17 MS. HOLLINGSWORTH: I had the same comment so...

18 MR. ZUROMSKI: Okay. Comment No. 2, again, this really
19 goes back to addressing Mark's comment as well, and I think
20 we're going to explain in more detail how the 97-005 process
21 fits into the overall scheme of the EE/CA and at the same
22 time part of that would be the definition of the extremely
23 impaired source.

24 MR. GEBERT: Okay.

25 MR. ZUROMSKI Okay. Comment No. 3, the potential ARARs,

1 I think our -- what I said in the EE/CA was that the state
2 hadn't provided ARARs, and I think that should have been said
3 the state hasn't recently provided ARARs, because you did
4 provide ARARs, and they just -- here they are. We're back in
5 1993 and 1994.

6 And so what we're going to do is we went ahead and
7 responded to your comment here, and it shows that, yes, we have
8 received your ARARs and how we plan to address that so...

9 MR. GEBERT: That is fine.

10 MR. ZUROMSKI: Does that make sense?

11 MR. GEBERT: That sounds a lot better.

12 MR. ZUROMSKI: Okay. I think that was just something
13 that you wanted to make clear in the document that, yes, the
14 state did give us ARARs, and --

15 MR. GEBERT: We did do our job.

16 MR. ZUROMSKI: Comment No. 4, the RAO in the EE/CA, to
17 reduce the migration of site-related chemicals of interest to
18 unprotected drinking water production wells is correct and
19 appropriate. However, there appear to be other goals and
20 objectives.

21 And we agree that there are other objectives as
22 well, and I think we talked about this in the last RPM
23 meeting, and we're going to leave the current RAO as it is
24 because it was broad enough to encompass all of the
25 objectives for OU-3.

1 And I think we had talked about if we had -- we
2 didn't want to make it too, too specific because then that
3 would defeat maybe some of the other parts of the goals of
4 the EE/CA. So I think we had talked about leaving it --

5 MR. GEBERT: Right.

6 MR. ZUROMSKI: -- fairly broad --

7 MR. GEBERT: Yeah.

8 MR. ZUROMSKI: -- which would encompass what DTSC had
9 provided here. It would encompass providing this treated
10 drinking water based on alternative 2(a). But, of course, if
11 the RAO was changed, that would knock out some of the other
12 alternatives in there that wouldn't have provided water to
13 the city or city residents, so I believe that's why we had
14 chosen to keep it fairly broad.

15 Comment No. 5, this is a discussion in the clean-up
16 goals and about the ARARs that need to be met. And we didn't
17 provide new numbers, and I think what we're going to do is
18 basically where we had put an ARAR and the ARAR said, you
19 know, carbon tetrachloride, the MCL for carbon tetrachloride
20 would be next to where we said the ARAR would be.

21 And I think that's good anyway. I think that kind
22 of helps us understand what numbers we're looking at rather
23 than just saying the ARAR is, you know, the MCL for carbon
24 tetrachloride so...

25 MR. GEBERT: Right.

1 MR. ZUROMSKI: Comment No. 6, the supporting assumptions
2 for the removal action objective are rather vague, and again,
3 I think that this was -- maybe one of the purposes was to
4 keep it vague so we could keep as many alternatives in as
5 possible, and -- but we will -- you know, the objectives and
6 goals should be stated up front. I think that we are going
7 to do that. We're going to put in a little bit more text
8 there as well as show that the -- I guess some of the
9 supporting assumptions were that the removal action
10 alternatives are intended to protect production wells from
11 the impacts of site-related chemicals of interest.

12 And, again, that would encompass more than just the
13 alternative 2(a). That would be all of the other ones that
14 we've looking at over the last year or so.

15 MR. GEBERT: Okay.

16 MR. ZUROMSKI: Comment No. 7, appendix D, definitely to
17 improve the readability of the section, we should add a short
18 paragraph detailing why they provide better hydraulic
19 containment and effectiveness. I think that -- again, those
20 are things that we talked about over the year, but we had
21 never really put into words. And I think that we will
22 definitely elaborate on why those were more effective. For
23 example, why we had kind of that qualitative analysis of why
24 the alternative 2(a) series had like a 98 percent
25 effectiveness versus the alternative 1 series was 74, 75

1 percent, and how we came up with those numbers. I think
2 that's going to be added to the test.

3 MR. GEBERT: Okay. Just expand the --

4 MR. ZUROMSKI: Okay.

5 Comment No. 8, the paragraph discussing community
6 and state acceptance should be moved to section 5.2. It's
7 done.

8 Comment No. 9, correct the bullets at the top of
9 the page. Again, I think this was -- that was Mark's comment
10 as well. No problem. It's taken care of.

11 Comment No. 10, the figures identified as
12 alternatives 3(a) and 3(b), yeah, I think, again, that was
13 one of the problems that we had was we had so many -- we
14 changed over time our alternative numbers and our pumping
15 scenario numbers, and somewhere along the line they didn't
16 mesh. And so I think we've tried to clear up the titles, and
17 what's a pumping scenario versus what's an alternative number
18 because there were, you know, X number of alternatives, but
19 there were probably, what, hundreds of different pumping
20 scenarios --

21 MR. MARTINS: Right. That we looked at.

22 MR. ZUROMSKI: Exactly.

23 Comment No. 11, no extraction well shown on the
24 figure. That's taken care of. Again, that's probably just
25 something that happened in the transition of the documents.

1 Those are all of your comments. I don't know
2 how -- to what extent you want to go through Richard's
3 comments right now. We can probably just glance through them
4 if you want.

5 MR. GEBERT: Let's go through them briefly.

6 MR. ZUROMSKI: But I think that definitely he'll want to
7 see them and make sure they're responsive enough before we go
8 ahead and finalize them.

9 MR. GEBERT: Sure.

10 MR. ZUROMSKI: Comment No. 1, "It's unclear how far the
11 existing groundwater contaminant plumes might migrate between
12 the present and when selected treatment removal alternative
13 is placed into operation. It's the GSU's opinion that it
14 would be instructional to show the estimated extent of
15 contamination at that time to conduct a few modeling runs to
16 determine whether the resulting plumes would be subsequently
17 captured upon initiation of the selected treatment or removal
18 alternative."

19 And the response that we put in there was
20 "suggested analysis or one similar to what will be performed
21 during the remedial design after the EE/CA alternative is
22 approved for implementation and when more information becomes
23 available. And the information on how long it will take to
24 implement the alternative and future plans for the production
25 wells that are currently taken off service would be needed

1 for running the model to perform such an analysis."

2 So basically it's saying that to perform that kind
3 of hypothetical long-term scenario -- and, again, realizing
4 this is a removal action and not the remedial action -- of
5 course, it's probably going to be a major component of the
6 remedial action -- that we wanted to use the information from
7 the removal action to see how effective it would be in the
8 long term.

9 So, I mean, I don't know to what extent that he
10 would want to see that modeling. I think part of it also
11 goes to the chemical transport analysis modeling that we were
12 going to do at one time that wasn't done. This was only flow
13 modeling that we did for the EE/CA, and we've never done any
14 fate and transport modeling, which kind of sounds more like
15 maybe what he was looking for, is maybe some fate and
16 transport modeling? Is that possible?

17 MR. GEBERT: I think so, yeah. I'll have to ask him.

18 MR. ZUROMSKI: Okay. I'm not quite sure.

19 MR. GEBERT: Plus, he says instructional, so I don't
20 know how --

21 MR. ZUROMSKI: Right.

22 MR. GEBERT: -- adamant he is.

23 MR. ZUROMSKI: Right. I think that our plan is to do --
24 over time to do fate and transport modeling. I think we were
25 trying to get a handle on the flow modeling first. And

1 actually a lot of the data that seems like he's looking for
2 are things that we're putting into our permit application for
3 97-005 anyway.

4 So there's probably going to be some kind of
5 overlap between that data. And when you coordinate, you can
6 coordinate a little bit more with Alan on the documents that
7 we send to him, which we'll probably send you copies as well.
8 Maybe that will clear up some of the information as well.

9 MR. SORSHER: So just, if I can get some clarification
10 on this, so this is addressing or looking at possibly the
11 impact of the removal action on the plumes that are off-site,
12 you know, out past the well 52, the Arroyo wells that we're
13 talking about? Would that cover that far out?

14 MR. ZUROMSKI: I think it's trying to look at how far
15 the OU-3 plume is moving right now versus how far it's going
16 to move once we put the removal action in place. And
17 according to all of our flow models that showed that, yes,
18 right now it's moving with the groundwater because the wells
19 are shut off, but when we put the action in place, it's going
20 to keep 98 percent of the plume from moving past the
21 extraction wells that are going to be put in -- or that are
22 out there. So it's basically to keep the plume from
23 migrating further at that point in time.

24 MR. SORSHER: Is it looking at capturing some of
25 the -- well, it must be looking at capturing some of the

1 plume that's further east or south of the well 52 and the
2 Arroyo well too. Will that --

3 MR. ZUROMSKI: The model itself or the --

4 MR. SORSHER: Yeah.

5 MR. O'KEEFE: I think what Alan's referring to is that
6 we saw some plume maps based on the spring modeling --
7 sampling event that showed levels of perchlorate, which were
8 just almost reaching downstream water systems, beyond the
9 City of Pasadena's wells, which includes Las Flores Water
10 Company, Lincoln Avenue Water Company, and Rubio Canyon.
11 They have some downstream wells that are seeing low levels of
12 perchlorate, around four.

13 MR. ZUROMSKI: Right.

14 MR. SORSHER: That were some that were even higher.

15 MR. ZUROMSKI: Right.

16 MR. O'KEEFE: The plume was just on the -- right along
17 the edge --

18 MR. ZUROMSKI: Right.

19 MR. O'KEEFE: -- of the wells.

20 MR. ZUROMSKI: Right. Yeah, the removal action is not
21 meant to -- it's not going to pull the whole basin into the
22 removal action. The removal action is really to contain the
23 existing plume as we know it at 18 parts per billion, and it
24 contains 98 percent of that plume.

25 As far as some of the residual that may have gone

1 past that or, you know, other sources or whatever it may be
2 that we see further down gradient, those aren't part of the
3 removal action.

4 MR. SORSHER: On the -- I guess it was comment 11 on the
5 previous -- I guess it was Richard's comments, it talks about
6 location of the extraction wells, that's the well 52 and the
7 well -- the Arroyo well we're talking about there?

8 MR. ZUROMSKI: Well, depends on what figure D17 is.
9 Could be -- it's whatever the extraction wells for that
10 alternative were. I'm not sure.

11 MR. SORSHER: Okay.

12 MR. MARTINS: I have a copy of the EE/CA, if you want.

13 MR. ZUROMSKI: Okay. Well, we can look at that maybe at
14 the break and tell you which one it is. But whatever
15 extraction well it be, I mean, the alternatives had as
16 extraction wells not only the well 52 and Arroyo well, but
17 some of the alternatives had an additional on-facility
18 extraction well. So it could have been -- it could have been
19 any one of those. So I'm not sure exactly which well that
20 refers to.

21 Okay. Comment No. 2, then, is, "It was noted that
22 the ISEP+ ion exchange process cannot easily be expanded for
23 accommodating higher flows. Since higher flows are
24 recognized as being a possibility at some future time, these
25 conditions should be anticipated. And a contingency plan for

1 expanding the system should be discussed or prepared."

2 Again, I think that the comment here is not only
3 that the -- or the response is not only that the ISEP system
4 would likely to be necessarily augmented if it's found that
5 we need to do further extraction, but of course that would be
6 part of the remedial design, not part of the removal action.
7 The removal action was limited to the current known 18 PPB
8 plume, and anything beyond that would be something that would
9 be part of the remedial design.

10 So I think that, yes, it's being anticipated if
11 it's necessary, but maybe not as part of the removal action
12 itself.

13 MR. GEBERT: Right. It would be addressed in the
14 design.

15 MR. ZUROMSKI: Correct.

16 MR. SORSHER: We have another question.

17 MR. ZUROMSKI: Yes.

18 MR. SORSHER: Why is 18 PPB perchlorate the magic
19 number?

20 MR. ZUROMSKI: Right. That was the figure that we came
21 up with back in -- I guess it was about a year ago as what we
22 know are the levels of perchlorate that were coming from the
23 facility and that can be contained at this time as the
24 high -- you know, high -- I guess you could call it a high
25 concentration plume that's emanating from the facility.

1 Because there's a lot of unknowns out there right now, that
2 when you go any lower than that, that we couldn't be sure
3 that, number one, we could capture it all or that's where
4 it's coming from.

5 So at the time that was what the known volume of
6 chemicals, especially perchlorate, were, and of course this
7 was before DHS lowered its action level. I mean, I think we
8 came up with this back about now almost a year ago now -- and
9 actually even it's probably 18 months ago -- and when that
10 action level changed in January of this year, the removal
11 action objective did not change.

12 MR. SORSHER: 'Cause that was the original
13 action level, I think, was 18.

14 MR. ZUROMSKI: Yes, it was. Right.

15 MR. ATWATER: What do you mean by -- you said like
16 allocation of sources? What do you mean by that?

17 MR. ZUROMSKI: Well, there are other potential sources
18 in the basin that need to be investigated when you look at
19 the lower levels of perchlorate. And since that is a process
20 that's kind of ongoing in our work right now, and it's not
21 finalized, it didn't make sense to go out there and start
22 extracting everywhere we saw perchlorate because that
23 wouldn't have necessarily been, you know, the wisest thing to
24 do right now.

25 Better to contain the plume that we know of and

1 keep it from moving further down gradient and then at the
2 same time try to study and find out, number one, where these
3 other sources are and, number two, what could be attributed
4 to this facility versus other facilities?

5 MR. ATWATER: I'm not aware of any document you have
6 ever produced or any analysis that's ever identified other
7 sources.

8 MR. ZUROMSKI: That's correct. We haven't.

9 MR. ATWATER: And given that the action levels change
10 from 18 to 4, and you have 40- to 50-year history of JPL
11 perchlorate, and you haven't analyzed the distribution of
12 that in the groundwater basin, I don't know how you can make
13 that statement; that 18 is somehow an identifiable plume
14 level and certainly between 4 and 18 is somehow not something
15 to be concerned about?

16 MR. ZUROMSKI: I don't necessarily think it's
17 something --

18 MR. ATWATER: Given that Pasadena has 9 of the out of
19 the 14 wells shut down because of perchlorate, and the other
20 wells, like Las Flores and Rubio that are being impacted,
21 that's a significant problem.

22 MR. ZUROMSKI: Uh-huh. I think that that's not an
23 insignificant problem. I don't think that's what we're
24 saying. I think that we're saying that it's going to be much
25 more difficult to, number one, figure out what can be

1 attributed to the facility and then, number two, how do you
2 control all of that where, like you're saying, there are
3 other places that see perchlorate. You know, figure out
4 where it's coming from and then how do we contain it?

5 This is a first step as part of the remedial
6 actions that were taken at the facility. It's not the only
7 step. And we are doing those analyses to see what those
8 other sources are and where we need to do other work as part
9 of our overall remedial design rather than as part of the
10 removal action. The removal action was an action that's
11 going to be taken to try to contain the plume now as far as
12 we can and keep it from moving any further while we're doing
13 the other work behind the scenes.

14 MR. RIPPERDA: To reiterate what he said, the fact that
15 they're doing this removal action is absolutely important and
16 necessary. They have to. But it doesn't preclude them from
17 doing future work. But we have to go after what we know we
18 can do now.

19 You know, the regulators, DTSC, the Regional Board,
20 and myself, are certainly pushing negotiating, whatever you
21 want to call it, with NASA to be looking at the lower levels
22 down gradient. We just had a meeting with the City of
23 Pasadena -- I don't know -- a month ago, and they were
24 pushing that issue hard about the lower levels farther down
25 gradient. And so when they start to push us, the regulators,

1 we in turn start to push NASA.

2 But we can't let concerns, arguments about those
3 issues, which are also important, hold up moving ahead on
4 this issue, which, you know, NASA already has funding
5 committed to and it's kind of in the hopper.

6 MR. ATWATER: I agree with that. I just wanted to --

7 MR. RIPPERDA: Yeah. You want to clarify his language.

8 MR. ATWATER: -- sharpen the point that -- and I would
9 say simply, based upon the modeling and the analysis in the
10 report, I agree with your point, Mark, that all of us would
11 generally say that the OU-3, you want to call it the --
12 what's the right technical term? Pilot or --

13 MR. ZUROMSKI: Removal action.

14 MR. ATWATER: Removal action is a good first start, but
15 it's not -- as we just discussed with the groundwater modeling,
16 it doesn't capture all of the plume. It's a crude instrument
17 to try to lessen the impact of the higher concentration of the
18 perchlorate plume from impacting more drinking water wells
19 downgradient, but it's a very blunt instrument.

20 And it's -- and I agree that it's a good first
21 step, but it's -- how effective it will be and how --
22 particularly in the context of a four part per billion action
23 level, and what in the next 18 months is state drinking water
24 standard, whatever that's going to be, that's certainly --
25 you know, the context, that has significant impacts on the

1 local water supplies for those communities.

2 MR. SORSHER: You say there's negotiations going on
3 between --

4 MR. RIPPERDA: Negotiations in the fact that the
5 regulators, Regional Board, DTSC, and myself, you know, talk,
6 meet, communicate with NASA all the time, and, you know,
7 we're certainly always pushing them to be looking at the
8 lower levels on a broader scale.

9 But for now, we really want to get this action done
10 because ultimately the most important thing is to get as much
11 mass out of the aquifer as soon as possible. You know, the
12 more mass you take out, the better for everybody. You know,
13 broader scale is lowering to four, maybe one. I don't know.

14 My management had a conference call with your
15 management earlier this week, and you guys are coming out
16 with -- not you guys -- but the health people are coming out
17 with the numbers supposedly on Friday for perchlorate.

18 MR. ZUROMSKI: Is this a revised number --

19 MR. O'KEEFE: PHG --

20 MR. BURIL: Is this public health code --

21 UNIDENTIFIED SPEAKER: Probably draft --

22 MR. GEBERT: A draft --

23 MR. RIPPERDA: Yeah.

24 MR. FIELDS: Isn't there already a draft PHG?

25 Wouldn't this be the final PHG --

1 MR. POUND: No. There was a lawsuit the State lost
2 that forced -- forcing a second peer review.

3 MR. ZUROMSKI: Right. There was a lawsuit that enjoined
4 the state from issuing the PHG on the date -- that was
5 supposedly January 1st of this year -- to go back, relook at
6 the information, and relook at a lot of -- I guess some of
7 the human data and some of the uncertainties involved in the
8 public health goal, and re-release that as another peer
9 review, go through the same rounds it went through back in
10 March, I think, of this year, release it to the public, let
11 the public have a chance to comment on it.

12 And so a PHG probably isn't going to happen, I
13 would say, until the spring at the earliest right now, maybe
14 summer, depending on what happens at the next peer review
15 meeting. So we won't have a PHG on January 1st as we had
16 originally anticipated.

17 MR. RIPPERDA: So the new proposed number is supposed to
18 come out on Friday, and they wouldn't tell us -- not me. I
19 wasn't involved. It was higher levels -- but they said
20 probably between 1 and 6, but they wouldn't say what it was.

21 But anyway, this comes back to, you know, the
22 concerns about low level, and as long as DHS has a number out
23 there that the water purveyors can comply with, according to
24 our -aim for, but that number has been moving. It was 18 --
25 well, first it was nothing, then it was 18, then it was 4. EPA

1 has got a number coming out. And based on the conference out
2 in Ontario, it seemed like EPA was shooting closer to 1.

3 MR. POUND: There is going to be a lawsuit on that.

4 MR. RIPPERDA: Yeah. And so, you know, an ultimate MCL
5 is going to take very long.

6 But anyway, all this means is that the target is a
7 little bit moving for any of the responsible parties out
8 there. And so we get to clean up as we can, and ultimately
9 when an MCL or a State of California number comes out, you
10 know, if it really is in that 1 to 4 range, you know, you're
11 not going to be able to clean the aquifer itself in any of
12 these basins. You're just going to have to go with well head
13 treatment at each individual purveyor.

14 MR. ATWATER: All right. And that's what my point would
15 be. If it's between 1 and 6 is a practical matter, it doesn't
16 really matter what number it is. It is well head treatment at
17 each well.

18 And I realize that's a funding and a resource
19 allocation, but then realistically we're looking at is, you
20 know, a majority of the Pasadena wells need well head
21 treatment.

22 MR. RIPPERDA: Yeah. And that's reality --

23 MR. ATWATER: Yeah. Absolutely. And that's, you
24 know --

25 MR. RIPPERDA: So NASA -- I have to look at the exact

1 language in the document again, but I certainly don't think
2 of 18 as being any kind of magic number now. I don't see
3 this removal action, trying to contain the plume at 18 or
4 anything like that, you know.

5 The point of this removal action is to go in where
6 there's existing wells in the heart of the growing plume, get
7 as much mass out as possible, and keep downgrading wells, you
8 know, as close to 4, 1, or whatever is possible.

9 And ultimately if a cleanup goal is promulgated
10 that's lower than what's there, then NASA will have to go
11 through a very detailed analysis with their argument about
12 Colorado River water injectate and have to determine
13 exactly who's responsible, and then the responsible parties
14 responsible for either well head treatment or just, you know,
15 purchasing alternative water supplies.

16 MR. ZUROMSKI: I think that's been the whole issue why,
17 you know, whether it's 18, 4, has been because there
18 is no ARAR for perchlorate, and so we had to pick a number
19 that we could at least work with right now, until something's
20 been promulgated that we can work with. I think that's
21 generally what Mark's saying.

22 MR. BURIL: Is there any general discussion or thought
23 with regard to when MCL would actually be promulgated?

24 MR. RIPPERDA: You probably know as much as any of us
25 that government moves at lightening speed, so expect it in a

1 few years.

2 MR. ZUROMSKI: I think that the target we had looked at
3 right now was probably sometime in '05 or '06. '05 being
4 earliest.

5 Alan, could you speak up, please?

6 MR. SORSHER: I was under the impression, I think --
7 I'm just asking Jeff here --

8 MR. POUND: January '04.

9 MR. ZUROMSKI: For California.

10 MR. ATWATER: Has a legislative deadline, yes.

11 MR. ZUROMSKI: Of course, that subject to lawsuits
12 and --

13 (Participants speaking over each other.)

14 MR. POUND: That's subject to lawsuits and how this
15 whole PHG thing is going to work out this year, this coming
16 year.

17 MR. SORSHER: Right.

18 MR. ATWATER: But you have a legislative deadline, which
19 is subject to (inaudible).

20 MR. SORSHER: Yeah. It's pretty serious to have a
21 legislative deadline.

22 MR. SORSHER: Well, you know, not to belabor
23 the point, I just wanted to, you know, mention and let
24 everybody know that our management is concerned about the
25 down-gradient perchlorate levels out in that part of the

1 basin, not only the one levels close to. And we'd like to
2 probably be in the loop if there's any developments in that
3 regard as far as what's happening with these other wells down
4 gradient.

5 MR. ZUROMSKI: Okay.

6 MR. RIPPERDA: A little plea to DHS then. If you guys
7 ultimately approve the permit required for this removal
8 action, the sooner that permit gets approved, the better off
9 those down gradient wells will be.

10 MR. SORSHER: Right. We are all in this boat together.
11 That's why we need to, you know, keep each other well
12 informed what's going on.

13 MR. ZUROMSKI: Okay. So let's see. I think that was
14 comments 1 and 2 to Richard Coffman's comments.

15 Comment No. 3, the text states that DHS sent a
16 letter to the U.S. Filter approving the use of anoxic
17 biological treatment for perchlorate drinking water
18 treatment.

19 And you wanted clarification as to whether that was
20 an approval of the general technological approach or did it
21 specify that ISEP, and if the ISEP process was specifically
22 approved, seems that final approval for the JPL site would
23 not require extensive testing as is indicated in the
24 discussion.

25 And you can see our response here, but since we

1 do have DHS here, we can maybe get some clarification too as
2 how -- as far as this goes, but first let's read our
3 response.

4 The response is: "The letter from DHS to Aerojet
5 approving the biological process for perchlorate treatment
6 specifies the acceptance for a fluidized bed-type biological
7 reactor and specifically cites the Envirogen system built by
8 U.S. Filter. The letter of acceptance does not make any
9 reference to the Calgon ISEP process. The letter indicates
10 that many caveats that suggest extensive monitoring, testing
11 during the shakedown period."

12 And I think that -- now, it's a little confusing
13 there. It seems as though we're talking about two different
14 technologies. We're talking about the permit for -- I guess
15 the overall approval for ISEP versus the overall approval for
16 U.S. Filter, the biological system, and then how does that
17 then fit into, I guess, the shakedown processes for 97-005?

18 MR. O'KEEFE: Okay. Well, Rick Sakaji also has another
19 letter, which is the technology acceptance letter for the
20 ISEP process. Basically, that is just an acceptance of the
21 technology to be used for a site specific application. When
22 we get to the approval process for site specific, that will
23 require further testing at each application.

24 Since this is not the first ISEP going in in
25 California, it shouldn't be extensive because we have similar

1 systems going in the San Gabriel Valley area. So as far as
2 the test period, typically they're just a couple weeks'
3 period. It shouldn't be months and months. I don't know
4 what you've proposed as far as the test period.

5 MR. ZUROMSKI: I don't think we've gotten that far on
6 the 97-005 process.

7 MR. MARTINS: It comes later.

8 MR. ZUROMSKI: Right.

9 MR. O'KEEFE: We'll review and comment on that as you
10 provide it.

11 MR. ZUROMSKI: Okay. Does that hopefully answer some of
12 Richard's questions?

13 MR. GEBERT: Okay. So the bottom line is no, it does
14 not apply to --

15 MR. ZUROMSKI: That letter does not.

16 MR. GEBERT: Okay.

17 MR. ZUROMSKI: Correct. We can add more, if you like.

18 Comment No. 4, "Figure D-9 shows particle tracking
19 for No action conditions and Pumping Scenario 1. However,
20 Pumping Scenario 2 is not shown even though it was selected
21 for the preferred treatment or removal alternative. GSU
22 suggests that a similar figure showing particle tracking for
23 Pumping Scenario 2 also be included."

24 And I think that's completely doable. I think
25 we're going to do that.

1 Comment No. 5, Appendix D, "GSU also notes that a
2 3-D view of the particle tracking may be instructional in
3 demonstrating vertical migration of contaminants from their
4 shallow source to the deeper screened production wells within
5 the current and/or resultant flow fields. Although that
6 information is somewhat presented in Figures D17 to D19,
7 particle tracking figure would permit easier visualization of
8 that migration."

9 And our response, 3-D particle tracking figures
10 were found to be too crowded and did not provide useful
11 information, and additional cross-sectional figures will be
12 prepared.

13 I think that if that's not enough as far as the
14 report itself goes, if the cross-sectional figures don't
15 work, and maybe if he just wants to see this information,
16 we'd be glad to show him the information, but we thought as
17 far as for the EE/CA goes in trying to keep this as a, you
18 know, simple engineering evaluation cost analysis, we didn't
19 really want to get into showing every modeling run from every
20 scenario that we've looked at it, but we'd be more than happy
21 to show you guys -- you know, if you want to come down to
22 Santa Ana with us sometime, we can show you the model, we can
23 show you pretty much all the runs we've done. I've seen some
24 of the 3-D analysis. You know, pretty neat to look at, but
25 maybe it just doesn't look good on paper was the whole thing

1 there. But we'd be happy to do that for you, if you'd like.
2 So you can let Richard know.

3 MR. GEBERT: Okay. Great.

4 MR. ZUROMSKI: And those were all of the comments we
5 received on the EE/CA from the regulatory agencies.

6 MR. RIPPERDA: Can we go back to comment No. 3 for a
7 second?

8 MR. ZUROMSKI: Yes. On Richard's comments?

9 MR. RIPPERDA: Yeah. On Richard Coffman's.

10 MR. ZUROMSKI: On Richard Coffman's? Okay.

11 MR. RIPPERDA: I like Jeff's answer much better than I
12 like your answer.

13 MR. ZUROMSKI: I do too.

14 MR. RIPPERDA: So if you can change it to basically what
15 he said, which answers the intent of the question as opposed
16 to just answering the exact question. The intent of the
17 question is does the ISEP process have a general approval
18 from DHS? And the answer is yes. And so, you know, say that
19 rather than answering exactly what he said.

20 MR. ZUROMSKI: You got it. And since we have it all on
21 record, we'll just throw it right into the document.

22 MR. O'KEEFE: If you'd like a copy of that document --

23 MR. ZUROMSKI: Actually, that would be great, if you
24 could send us that. Okay.

25 So does anybody else have any questions on the

1 response to regulatory comments on the EE/CA?

2 Okay. Hearing none, the next thing is discussions
3 with the City of Pasadena.

4 Peter, you talked with the folks from Pasadena, and
5 we've been talking with them over the last couple of months,
6 I mean, specifically related to the EE/CA. And the City sent
7 us some comments on the EE/CA, and I guess they have a
8 contractor working for them that sent us some comments. And
9 we're going to sit down with them hopefully next week, I
10 think the meeting is being scheduled, so that we can discuss
11 the City's comment on the EE/CA to make sure that they, of
12 course, have full buy-in on the removal action that we're
13 proposing for them before we go out and implement it on them.

14 So I think that's really what's going on. So we
15 are still having regular discussions with the City. You
16 know, we had a meeting -- I think Mark was there at one of
17 our most recent meetings in the last month or so. We've also
18 had meetings with DHS, with the City in the last two or three
19 weeks. I guess it's been about three weeks, I guess, since
20 that last meeting we had.

21 MR. SORSHER: End of October.

22 MR. ZUROMSKI: Was it October? Time flies when you're
23 having fun.

24 And so those are continuing, but, again, I guess
25 our major discussion right now is we're trying to finalize

1 the EE/CA. And for the most part, if we've answered the
2 regulatory questions on the EE/CA, we're going to go ahead
3 and include those as changes and modify the EE/CA.

4 The final thing would be to make sure that we
5 incorporate the City's comments into the EE/CA as we, you
6 know, see fit after we meet with them next week, and then we
7 can go ahead and finalize the EE/CA and move on to
8 implementing the removal action.

9 So hopefully next week we can resolve these issues
10 that they have with the EE/CA, discuss them, and get that
11 thing finalized and going. So that is -- that's happening,
12 and that will be pretty much the last step before we move
13 into what we're going to talk about later which is the
14 public meeting and release of the EE/CA, et cetera.

15 MR. ATWATER: Who is the contractor that's working on
16 this?

17 MR. ZUROMSKI: Geo Syntech.

18 MR. RIPPERDA: So under discussions with the City of
19 Pasadena, you recently went back to NASA headquarters, and
20 one of the stumbling blocks is the actual agreement between
21 NASA and Pasadena.

22 So what happened with your meeting with
23 headquarters?

24 MR. ZUROMSKI: Actually it went very well. We talked
25 with the lead environmental person for NASA and presented to

1 her pretty much where things are right now. I mean, we've
2 been trying to help her follow the progress of the whole
3 removal action throughout the last year and a half.

4 And so basically what's happening now is that after
5 that meeting, she has talked with her attorney at NASA
6 headquarters, and her attorney is now talking with our
7 attorney here, Tim Howell, and the two of them are going to
8 negotiate some type of agreement, maybe some type of
9 memorandum of understanding or memorandum of agreement, with
10 the City to implement the removal action.

11 So it is a -- we are going forward with it, and --
12 but it's in the hands of the attorneys to discuss the terms
13 of the agreement and how that's going to happen. But that is
14 going forward right now. So it's good. It was -- the
15 reaction from the meeting was good.

16 MR. ROBLES: Basically she told the lawyers to make it
17 happen. And so that's what they were doing. And we're going
18 to have a meeting with the Navy to look at various contract
19 mechanisms so we can get this done as soon as possible. That's
20 one of the things we're working with our attorney is to meet
21 with the Navy procurement people and just see how we're going
22 to get this done.

23 MR. ZUROMSKI: All right. There's like two levels to
24 this. I mean, there's the agreement between the City and
25 NASA, which the City and NASA need to negotiate and come to

1 an agreement on.

2 And then there's, well, once you have that
3 agreement, how do you implement the removal action in that
4 agreement?

5 And NASA thought one of the options would be if NASA
6 wasn't going to do it themselves as far as contracting
7 directly through NASA -- of course, they've used the Navy's
8 resources for the last going on three years now -- how would
9 they use the Navy to implement that removal action under this
10 agreement?

11 So we're trying to figure out from our own
12 standpoint to provide support to NASA and let them use our
13 mechanisms to help implement that removal action. Because
14 we're going to be involved one way or the other. It's just
15 to what extent NASA wants us to do this versus them to do it
16 themselves is something that they're dealing with right now.

17 So that's -- those are generally the discussions
18 with the City.

19 Does anybody else have any other questions?

20 Okay. Next one. Please, when you see this, don't
21 say you need a magnifying glass. Don't try to really read it
22 or understand it. This is more for informational purposes
23 because you're not going to be able to see it. I'll send you
24 an electronic copy.

25 Yes, Chuck, you can't read it, but some of us can

1 still. My eyes are going little by little. This is the DHS
2 application process, schedule. It's -- I just wanted to keep
3 it to three pages and, you know, when you shrink things down,
4 otherwise, it would have been huge, it would have been a
5 book.

6 So I guess the biggest things on here is really
7 just to kind of give everybody an update of where we are in
8 the process. So I will just tell you where they are, and
9 then you can either trust me or you can look at them later.

10 MR. BURIL: You've obviously failed eye chart class.

11 MR. ZUROMSKI: What do you mean? I can see this. This
12 is great.

13 So as you can see now, on source water assessment
14 is the thing -- is the part of the process that we're working
15 on right now. And as part of the process, we had to do a
16 sampling and analysis plan and a round of groundwater
17 monitoring.

18 And as part of that, you can see here under item
19 No. 22 -- of course you can't see it -- but item No. 22, the
20 sampling and analysis plan addendum, we put together a
21 sampling analysis plan and actually starting, I think it is
22 today, our groundwater monitoring contractor is out there
23 taking the samples for the 97-005 process. And then you can
24 see that.

25 So we finished the actual items, 22 to 33 are done,

1 and I think it says 12/20, but I'm not sure why. But on item
2 No. 34, we actually are out there starting on today, No. 36,
3 groundwater monitoring.

4 So that's where we are as far as the sampling that
5 goes along with the 97-005 process.

6 The second part of this is the source water
7 assessment which starts at the top of the page, No. 1.

8 And we have an internal draft source water
9 assessment that's being reviewed by the Navy, NASA, and the
10 City of Pasadena right now.

11 And again, we're going to have that meeting with
12 the City next week to discuss their comments on the EE/CA.
13 We're also going to discuss their comments on our initial
14 source water assessment so that we can move forward with that
15 and submit that to the agencies.

16 I guess the -- probably something Allen is looking
17 for is the projected date for submitting the source water
18 assessment to DHS, and these numbers are old, as I can now
19 look at them, but of course this is the most recent one that
20 was provided to me. It's probably -- if we're going to review
21 these with the City next week, and it's probably going to
22 take at least a couple weeks to incorporate all the comments,
23 you're probably not going to see it until sometime the first
24 or second week of January at the earliest right now. But you
25 will see it in early January because the document is pretty

1 far along right now.

2 And then the rest of this is really for everybody's
3 information. It just shows you the complexity of the process
4 and how we've projected things over time, and a final permit
5 process coming due sometime in March of '04, I think it is
6 right now, which is a little more than a year, year and three
7 or four months from now. So that's really what this was for,
8 is more for informational purposes and to tell you where we
9 are in the process right now.

10 I don't know. Does anybody have any questions
11 regarding the process, how it's moving, other than that?

12 I know that we've had some off-line meetings with
13 DHS and the City to specifically address these 97-005 issues,
14 and those are pretty detailed discussions about how the
15 actual documents are coming along.

16 It's entirely up to everybody here if you guys have
17 any other questions about the documents themselves.

18 MR. O'KEEFE: I have a question about the CEQA.

19 Shouldn't that be beginning much sooner than where
20 you have it in your schedule?

21 MR. ZUROMSKI: When would you propose for that to --

22 MR. O'KEEFE: Wouldn't you be doing it at the time of
23 construction of the pilot facilities?

24 MR. ZUROMSKI: That's a good question.

25 Well, see, here's the thing. The problem that we

1 have is that depending on how it's done, you've got a CERCLA
2 component, and then you've got -- you have a City component.
3 And depending on who constructs the system will probably
4 determine when the process needs to start. And so maybe
5 that's just a place-holder date.

6 I don't know, Ken. I don't know if you can answer
7 that question or not. I know that John Delagowski's the one
8 that is working on that in greater detail but, you know,
9 Jeff, really --

10 MR. O'KEEFE: I wouldn't want that to hold up anything.

11 MR. ZUROMSKI: Sure.

12 So you would propose that should start when --
13 before the construction of the facility starts?

14 MR. O'KEEFE: Yes. It can be a slow process.

15 MR. ZUROMSKI: Okay. I'll make a note of that.

16 MR. O'KEEFE: If you were looking at the sequence of the
17 steps in our 97-005 policy document, CEQA is listed as step
18 7 or so, but that -- the intention is not that that is at the
19 end --

20 MR. ZUROMSKI: Okay.

21 MR. O'KEEFE: -- of the process. It can be done much
22 sooner.

23 MR. ZUROMSKI: Okay. We'll definitely bring that up
24 with the folks who are doing that.

25 MR. GEBERT: I have a question on this individual bold

1 headings. All of those are the steps that are necessary to
2 obtain the permit?

3 MR. ZUROMSKI: No, not necessarily. I'll identify --
4 the main steps are, number one, which is the source water
5 assessment.

6 And under the source water assessment, you have the
7 SAP and the groundwater monitoring, and those are kind of all
8 part of the same part of the process.

9 And the second one you have is No. 40, which is raw
10 water quality characterization. That's the second being step
11 that we'll be working on, and that's another part of the
12 process itself.

13 Of course, I should probably just turn this over to
14 Alan, and he can tell me so I don't mess up No. 3. But those
15 are the first two main steps, and those are like the meat, I
16 think, of the background data. And the rest of it's the
17 permit process, which Alan can tell you about.

18 MR. SORSHER: Well, just to again put this thing in a
19 little bit of perspective, there's really -- the way we
20 actually look at it, there's really two documents and two
21 processes here. Okay?

22 One's a permitting process, which is every water
23 system that makes a change to their system has to get a
24 permit from us.

25 The other process is the 97-005 policy. Okay? And

1 that produces a 97-005 document, which we then use to support
2 the permit decision.

3 So that it's -- you know, actually, when you say
4 97-005 permit application, it's really a little bit of a
5 misnomer, and it may be leading to confusion. I think if you
6 keep them as two separate activities, we'll all understand a
7 little bit better.

8 So the 97-005 is basically a support exercise,
9 which we use when we're doing the permit. And, you know, as
10 the 97-005 process is moving along, you know, it may be --
11 I'm just trying to look here at your steps here for the
12 permit process.

13 Some of these steps on the -- where you call the
14 final permit package starting at item 98 through 103, some of
15 that could probably be started ahead a little bit more. So
16 we can get started with that.

17 And then as -- when the 97-005 document is
18 finalized, that would just segue into the permit activity.

19 MR. ZUROMSKI: So it would be helpful for us to finish
20 as much of the documentation that we can for the permit.

21 MR. SORSHER: Yeah.

22 MR. ZUROMSKI: While we're also sending you 97-005
23 sections, I guess.

24 MR. SORSHER: Right. We could get -- you know, we could
25 start a lot of preliminary stuff, preliminary outlines, and

4 maybe some drafting. Also, actually, the CEQA
5 process is actually part of the permitting process. It's not
6 part of the 97-005 process. I mean, they listed it in the --
7 they listed that CEQA in the 97-005 policy
8 because there's going, you know, necessarily be a permit
9 modification. So they kind of listed all those things. But
10 actually the CEQA is part of the permitting
8 activities for the City.

9 MR. ATWATER: Who would be the leading agency? the
10 City?

11 MR. SORSHER: Probably be the City.

12 MR. O'KEEFE: We'd only be the lead agency for maybe a
13 private water company's construction of treatment facilities.

14 MR. ATWATER: Sure. Good point.

15 MR. SORSHER: So, you know, with that kind of framework,
16 I mean, you can go ahead and go through -- you want me to --

17 MR. ZUROMSKI: No, no, no. That's fine.

18 Well, I was going to say if you wanted to maybe
19 point out how things go with the permit versus the policy
20 after that.

21 MR. SORSHER: Okay. Well, like Richard mentioned, the
22 source water assessment, the raw water characterization, are
23 kind of preparatory. And these steps in the 97-005 process
24 do kind of follow a logical procedure.

25 Again, the source water assessment is really kind

1 of a vulnerability assessment, really. I don't even like the
2 term source water. I'd rather call it some kind of
3 vulnerability term in there, because you're evaluating what
4 your ultimate wells are going to be vulnerable on the various
5 places.

6 And then the raw water characterization is an
7 attempt to see what the current water quality is and project
8 the future water quality that your wells and your treatment
9 system are going to be facing.

10 So those two steps are kind of preparatory.
11 There's one that they list in there next called "Source
12 Protection." That's just steps that are going to be done so
13 things don't get worse as far as contamination goes.

14 And, you know, then as far as the permitting
15 itself, the heart of it gets into the effective monitoring
16 and treatment, which is what kind of monitoring plan are we
17 going to need to -- as far as your treatment monitoring, as
18 far as your raw water monitoring over the years, to make sure
19 that the water produced is going to be safe for the public.

20 And, again, the effective monitoring and treatment
21 are going to be relying on the concentration of chemicals
22 that are coming into the plant. That's why the other two
23 steps are kind of preparatory to it.

24 But that includes failure analysis, there's some
25 risk analysis, the risk of failure, what would be the

1 ramifications of that, how quickly failures would be detected
2 and repaired. He does have on 62 reliability features.

3 So that's that that part of the process. You have
4 it also in that 76, I see.

5 MR. ATWATER: To simplify that, I mean, this is an ISEP
6 process, which conceptually is a treatment facility which
7 you're just outlining is okay.

8 What if you had excursions of raw water where the
9 concentrations of, OK let's use perchlorates are double what we
10 think it ought to be. Will it still remove it to, you know,
11 less than one part per billion. And technically they need to
12 show in the engineering report that that's true.

13 Now, what if you have a breakthrough in it or you
14 have an outage you have controls on the systems so that it
15 shuts down or doesn't get into the --

16 MR. SORSHER: Seal failures or --

17 MR. ATWATER: You know, all of -- all of those things
18 and that, from an engineering sense, since this isn't the
19 first time they've ever done ISEP, that ought to be pretty
20 straight forward.

21 And it's also a detailed engineering question of
22 having a SCEDA system and all that so you've got
23 controls on it so you get real-time monitoring.

24 MR. ZUROMSKI: And these are the things that we have
25 to do anyway as part of implementing the removal action. I

1 mean --

2 MR. ATWATER: What your point is that's not on the
3 critical path end of it.

4 You ought to be able to get all of that done real
5 frankly the vendor and the engineering got very talented
6 contractors. They ought to be able to do all that rather
7 quickly.

8 And you want to review all that because, in
9 previous experience, watching you on a permit like this, you
10 want to carefully review all of the details of that
11 operational scenario to make sure that you have a high degree
12 of assurance that Pasadena won't have a risk of bad water
13 going in their system. That's really what you to want to do.

14 And that's all the start-up challenge is, to make
15 sure, to verify what you engineer and design is going to
16 operationally be a hundred percent reliable.

17 MR. SORSHER: Right.

18 MR. ATWATER: Is that --

19 MR. O'KEEFE: Yeah, but ultimately what this all leads
20 up to is a public hearing, which DHS has to stand in front of
21 the public and say that although we're talking about
22 groundwater that's impacted by multiple constituents, it's a
23 known contaminant plume, we feel that the treatment system
24 will be reliable and shouldn't cause any significant increase
25 in risk to your health as opposed to an alternate supply.

1 not be quite adequate next year, so you also have to deal
2 with that balancing factor.

3 What if they have no water or 50 percent supply?

4 MR. SORSHER: Right. And, you know, reliability of
5 supplies is evaluated as well as --

6 MR. ATWATER: In this evaluation of alternate supplies,
7 are you going to do an evaluation of Delta supply health risk
8 and Colorado River health risk? That's the blend that
9 Pasadena gets, and it varies, as you know, in that time of
10 year.

11 MR. O'KEEFE: Are you referring to perchlorate in that
12 supply?

13 MR. ATWATER: No. 'Cause you're looking at all --
14 perchlorate from the Colorado River perspective, but
15 certainly from a THM and the Delta, I mean, I don't need to
16 tell you two that from a risk analysis, that's equal to if
17 not greater from a health risk standpoint.

18 MR. O'KEEFE: Well, I don't really think that
19 the intention is to go into that detail.

20 MR. ATWATER: I understand. But that's -- but when you
21 have that hearing and you try to weigh issues, it's -- you
22 know, like the debate about chrome 6 in Glendale, I mean,
23 you know, what's the more significant health risk?

24 MR. SORSHER: Well, we have to be ready to discuss that.
25 And, yeah, every one of these 97-005s here are all different,

1 you know. And they all kind of work out differently, the
2 water is different, the situations are different, the risks
3 are different, so --

4 MR. O'KEEFE: And the communities are different.

5 MR. ATWATER: I understand that's the reality. But
6 I'm -- from a purely technical standpoint, you know, it's
7 more straight forward.

8 MR. SORSHER: Yeah, it's --

9 MR. ATWATER: It's how you want to display that
10 information.

11 MR. SORSHER: Right.

12 MR. ATWATER: Because, for example, Delta water is
13 extensively documented and the health risks are --

14 MR. O'KEEFE: But, you see, the public's not going to
15 come up with that question. They're going to say -- they're
16 not going to ask the question about the risk of the alternate
17 supply. They're going to ask the question of the risks
18 associated with this supply.

19 And we'll have to be prepared to respond to those
20 questions. And that's what all this documentation is for.

21 MR. RIPPERDA: So what -- this is a stupid question.

22 What are the health risks of the Delta water?

23 MR. ZUROMSKI: Don't you drink that, Mark?

24 MR. RIPPERDA: No. I usually drink McKullama river
25 water.

1 MR. O'KEEFE: I mean, they'll be higher THMs, of course,
2 in a surface supply, than in the groundwater supply, so I guess
3 what you're getting at is --

4 MR. ATWATER: (Inaudible) compounds and all that.
5 And those are, I mean, well documented.

6 MR. O'KEEFE: Cancer from, you know, VOCs versus cancer
7 from THMs, you know. You can't really evaluate that.

8 MR. ATWATER: Well, you can't, but, I mean --

9 MR. O'KEEFE: It's going to be --

10 MR. ATWATER: Both EPA and DHS has risk analysis and
11 just simply that the risk analysis of Delta water is a higher
12 threshold than it is with perchlorates right now,
13 with what we know, and what the drinking water standard is.

14 MR. RIPPERDA: So what's the format of the permit? Is
15 it a public hearing? Is it a --

16 MR. O'KEEFE: Yes.

17 MR. RIPPERDA: -- public meeting?

18 It's a public hearing.

19 So does DHS have a moderator sitting up front? Do
20 you have Pasadena come up and make a presentation? NASA come
21 up and make a presentation? You guys make a presentation?
22 How does it run?

23 MR. ZUROMSKI: Well, not in great detail but --

24 MR. SORSHER: Well, I've only personally gone through
25 one of these, and that was with the City of Glendale. And in

1 that case, the consultant for the RPs, the PRPs, who designed
2 and constructed the plant, made a presentation, actually the
3 water master made a presentation, our regional engineer went
4 through, explained the 97-005 process. And that was a couple
5 of years ago, two and a half years ago.

6 MR. O'KEEFE: I wasn't there.

7 MR. SORSHER: You weren't there?

8 MR. O'KEEFE: No.

9 MR. SORSHER: But it was -- it was -- and yeah, Gary --
10 oh, that's right. Gary was there. Gary was the moderator.

11 And Vera made a presentation. And we had some
12 questions from the public. To me it was -- it looked -- it
13 was kind of like a combination of a hearing and a meeting
14 because there were questions and responses; responses from
15 the agencies to questions from the public.

16 MR. ATWATER: Did you have much public at that one?

17 MR. SORSHER: No, no. It was --

18 MR. ATWATER: 'Cause all of that happened after that.
19 It was more of a city council debate.

20 MR. SORSHER: That was before hex chromium reared its
21 ugly head.

22 MR. ATWATER: At that time you get that all permitted,
23 with the Superfund CERCLA project in Glendale. And that
24 was going pretty smoothly at that time.

25 MR. SORSHER: Right. Right.

1 MR. ROBLES: Alan, this brings up to mind, how much
2 documentation does DHS want at a public hearing.

3 My concern is that you want an infinite amount of
4 information that may not be available or possible, so that
5 you feel comfortable that you can stand before the public.

6 How much is enough? Because, you see, the key
7 issue is if you guys are not satisfied --

8 MR. SORSHER: Right.

9 MR. ROBLES: -- this whole process is shot.

10 MR. O'KEEFE: Essentially the documentation are the
11 other parts that are being prepared up until that
12 hearing date. And those reports will be available to the
13 public for review.

14 In addition to that, the DHS draft permit will be
15 another document that will be available for review. And I
16 don't know if we mentioned it, but I guess there's an
17 operations maintenance and monitoring plan
18 that will be prepared.

19 Is that in the schedule there?

20 MR. SORSHER: Well, that will be part --

21 MR. ATWATER: You're assuming Pasadena's going to
22 operate this facility, aren't you, where you're going to have
23 a contract?

24 MR. ZUROMSKI: Most likely, like they do the VOC plant
25 right now, with a contractor, I think, operates it for them.

1 MR. BURIL: No, that's not right.

2 MR. ZUROMSKI: They come in and do periodic maintenance.

3 MR. BURIL: They do the periodic maintenance,
4 and they hire contractors as needed to do special
5 maintenance.

6 MR. ZUROMSKI: Right.

7 MR. ATWATER: So there won't be any --

8 MR. RIPPERDA: Can you guys -- I'm getting,
9 just one at a time?

10 MR. O'KEEFE: I was just saying, there won't be any
11 other surprises as far as documentations for public review.

12 MR. ZUROMSKI: And, of course, remember, we're also
13 going to have maybe a -- which we'll talk about later -- a
14 pre-97-005, part of the CERCLA process public meeting, which
15 may give us an indication even before we get through all of
16 this, if it's even worth going through at that point, I mean,
17 depending on what the reaction to the public is at that
18 point. So we'll definitely see.

19 MR. SORSHER: I think an excellent opportunity to see --
20 well, you know, if there's a lot of opposition or if there's
21 concerns, which we can then address in the 97-005, and the
22 permit process, if we can find out these concerns early on
23 and address them, definitely that's the way to go.

24 MR. ATWATER: The only point I want to make, what you
25 need to discuss like in the next six months with the City of

1 Pasadena, put it on the table, is where DHS is going to want to
2 see with this ISEP treatment plant, who's going to staff and
3 operate it? And if it's not the City of Pasadena, knowing
4 DHS from my experience in working on these kinds of permits,
5 then they want to know the -- if you will, the supervision
6 and the line of control.

7 Because what happens -- I mean, what they want to
8 know is hypothetically at three o'clock in the morning on a
9 Sunday if the thing goes down, who calls up who and who makes
10 sure that the thing is operating and it's fail safe?

11 MR. ZUROMSKI: And, actually, part of that comes into
12 the point of the discussions that NASA and the City are
13 having because for we all know we could contract it, and we
14 could contract somebody to do it.

15 MR. ATWATER: Sure. And that's working some places.
16 But the command and control, if you will, so that on a
17 24-hour, seven-day-a-week --

18 MR. SORSHER: Just to kind of tie this together, what we
19 found out, and through our experience on these type of
20 things, we want to issue -- when we are going to issue the
21 permit to the City, the water agency, okay, and they're going
22 to be the operators as far as we're concerned, you know, it's
23 under the City's jurisdiction.

24 We had a different arrangement -- I forgot exactly
25 how that worked out -- with the City of Burbank earlier on --

1 actually, that was done before the 97-005 process. But there
2 was a lot of operational problems. And our bottom line is
3 that we want water people running this plant. So we're going
4 to hold the City of Pasadena by the neck, and they're going
5 to be the permit holder for us.

6 Now, what they've done at Glendale is they have
7 hired a contractor to operate that plant for them. Okay?
8 That contractor is operating it for Glendale. Now, of
9 course -- and I'm not privy to all the contractual things
10 behind it, but the Glendale respondents group basically is
11 paying the bill for the operation of the plant, but from our
12 viewpoint, it's the City of Glendale that we've got by the
13 neck.

14 MR. ATWATER: That's right. You call up Don Purlick and
15 say,

16 MR. SORSHER: That's right.

17 MR. ATWATER: And if the vendor does something wrong,
18 you go through Don and say fix it.

19 MR. SORSHER: Right.

20 MR. ZUROMSKI: And probably have some kind of similar
21 arrangement.

22 MR. SORSHER: Right. But it has worked out very well
23 over the last several years.

24 MR. ZUROMSKI: Okay. Well, I think that covers the
25 97-005 process.

1 Does anybody have any more questions?

2 MR. ATWATER: The only last thing I would suggest that
3 you ought to consider for the DHS public hearing, from a
4 Raymond Basin perspective and the City of Pasadena, I would
5 invite then the Metropolitan Water District to be part of
6 that hearing and present from their perspective the risk
7 assessment of the import water supply. If you want to
8 communicate that message, it would probably be smart to be
9 prepared to talk about that.

10 'Cause in this case, unlike the Glendale. You
11 are dealing with a chemical that is in both the imported
12 water supply and the local, which is I think probably unique
13 in one of these -- I don't remember in Southern California or
14 anywhere where you had that unique situation.

15 Ignoring the issue of trade-offs and the balancing
16 between risks of different sources like Delta Water or
17 different chemicals, in this case somebody in the public is
18 going to walk up and say, "Well, what about perchlorate and
19 the Colorado River aqueduct " 'cause it's too well known, and I
20 think you need to have that be part of the presentation.

21 MR. O'KEEFE: Think they want to do that?

22 MR. ATWATER: Well, I mean -- and not to be -- you know,
23 one of the discussions is -- 'cause I understand NASA's
24 perspective -- somehow historically -- we talked about that.
25 We have for four years -- is that Colorado River water may or

1 may not have contaminated this aquifer or other aquifers
2 throughout Southern California.

3 But if you go back to that, one simple point I have
4 a perspective, well, it was the federal government that
5 caused that in Las Vegas and so, you know, it's the right
6 hand and the left hand. And from a source assessment, and
7 that broader debate, you know, whether the Colorado aqueduct
8 has four to ten parts per billion perchlorate in which it has
9 over the last four or five years versus local well water. You
10 need to probably have that in the public hearing record.

11 MR. O'KEEFE: Yeah. But probably -- they might -- I am
12 not certain if they'll be resistant, but if they do make that
13 type of presentation, they would probably be a little bit on
14 the defensive and talk about the actions they're taking to
15 reduce that level in the water (inaudible).

16 MR. ATWATER: Well, that's important to talk about both.

17 MR. O'KEEFE: And they're probably going to say
18 everything's fine. "We've got it down to below four, and
19 it's going to go lower even next year," you know. So that
20 might not help too much as far as public meeting.

21 MR. ATWATER: Well, I think it would be wise to invite
22 them and have them participate because it's hard for me to --
23 I would fully expect that that question would come up from
24 somebody.

25 MR. SORSHER: Yeah. That's definitely a bridge that

1 we're going to have to cross.

2 MR. ATWATER: And certainly you could request, and we
3 can also request, that they participate. To complete the
4 97-005 report, you need to have that data because you want to
5 compare alternative supplies.

6 MR. SORSHER: Right.

7 MR. ATWATER: And you're going to want to make your own
8 independent judgment of what those relative risks are.

9 MR. O'KEEFE: But that's a document that will be
10 submitted for this process. We won't be really preparing
11 that document. That's going to be submitted to us, and it
12 should be considered in that document.

13 MR. ATWATER: But you do have a permit with
14 Metropolitan, you can ask them to provide that information?

15 MR. O'KEEFE: They would probably cooperate if we asked.

16 MR. ZUROMSKI: Okay. Does anybody else have anything
17 else they want to mention on 97-005?

18 Sure, Jeff.

19 MR. O'KEEFE: On your schedule, the last items of 107 to
20 109, really what needs to happen is there needs to be a date
21 where we have a public review of these documents, 30 days,
22 in some repository, and then schedule a meeting at the end
23 of that 30-day period. I see you have a lot of time between
24 the DHS permit and the public meeting, so I'm not exactly
25 sure why you have that there.

1 Oh, no. That's '04. So you're having meetings
2 during this process?

3 MR. ZUROMSKI: Yeah. Actually, see this public meeting
4 1 here?

5 MR. O'KEEFE: Yeah, you're --

6 MR. ZUROMSKI: That's actually our CERCLA meeting, which
7 is actually going to be like February of '03, and then the
8 second one, public meeting 2, would be just looking you're
9 talking about, we would have -- like we do for CERCLA, we
10 have a 30-day public comment period.

11 We actually usually don't like to have the meeting
12 at the end of the comment period because sometimes people
13 like to have a couple weeks. And I think the EPA's
14 suggestion was you give people a couple weeks to look at it,
15 then you have a meeting, and you give them a couple more
16 weeks to comment. Because if the period ends the day of the
17 meeting -- some people like to submit written comments and
18 stuff like that so --

19 MR. O'KEEFE: We usually keep it open for at least a
20 week following the hearing.

21 MR. ZUROMSKI: I think that's the intent of both of
22 those two meetings.

23 MR. O'KEEFE: So I don't know. You might want to revise
24 that schedule to show --

25 MR. ZUROMSKI: I think the schedule is not quite up to

1 date either right now so...

2 MR. O'KEEFE: Okay.

3 MR. ZUROMSKI: We will definitely take that into
4 account.

5 I think we're at a point now where we have two
6 choices. We can either do a brief discussion of the pilot
7 study, or we can walk up to the pilot study before lunch, or
8 we can have lunch now and get to the pilot study early.

9 So what I'm looking at is -- Chuck, go --

10 MR. BURIL: Well, I might offer a suggestion is to
11 continue with any of the discussions that we can accomplish
12 in this room to their completion, have lunch, and then go to
13 the site for the tour. And then anyone who is going to go on
14 the guided tour that I'll be conducting can go from there, so
15 we can accomplish as much as we can in this room and then
16 ultimately end outside.

17 MR. ZUROMSKI: Okay. Well, then why don't we -- if that
18 sounds good to everybody, what I'll do is I'm going to move
19 to action No. 7, into community relations.

20 MR. RIPPERDA: I just --

21 MR. ZUROMSKI: Oh, sure, Mark.

22 MR. RIPPERDA: -- have a couple more questions.

23 MR. ZUROMSKI: Definitely.

24 MR. RIPPERDA: Let's beat a dead horse into the ground
25 since you have both, you know, Richard representing the water

1 purveyors and DHS here.

2 Richard was saying that the 97-005 package should
3 include a risk assessment of alternative water supplies, and
4 that's not something that we've ever talked about or that you
5 guys have talked to us about. I don't see that anywhere in
6 here. So I wouldn't want that to be a requirement that you
7 guys aren't (inaudible) DHS isn't going to do it. You know,
8 if that's up to you to do.

9 MR. ZUROMSKI: I think it -- isn't that part of
10 the -- I think it is, actually, it's part of --

11 MR. ATWATER: It's in the 97-005, it's required. 'Cause
12 they could do a comparison of alternative supplies.

13 MR. O'KEEFE: Yeah. Well, item 76 is the risk
14 assessment that basically goes over different scenarios of
15 plant failures and what could be the worst case outcome. And
16 then there's an evaluation of alternative supplies.

17 Where is that?

18 MS. HOLLINGSWORTH: 82.

19 MR. O'KEEFE: 82, yeah. Which doesn't necessarily
20 include a risk assessment. It's just -- Alan, can you
21 elaborate?

22 MR. SORSHER: (Inaudible.)

23 MR. O'KEEFE: So I'm not sure what you really want here.
24 But as far as our minimum requirement, it's just the general
25 discussion of the -- the quality of the treated water will

1 compare with an alternate source of supply, which in our past
2 dealings has been there haven't been any concerns with that
3 supply. In this case, we have that issue of some residual
4 perchlorate in the alternate supply. So it can be discussed
5 as far as risk assessment. I don't know if it needs to be --

6 MR. RIPPERDA: I don't know how much effort NASA was
7 going to put into this, and I would want them to know how
8 much work they need to do and do they need to do a full-blown
9 risk assessment on Delta water and on MWD water, or do they
10 just have to say that it's publicly purveyed water and
11 acceptable elsewhere?

12 MR. SORSHER: Yeah. Again, again, our -- you know, our
13 experience with these types of things has been pretty limited
14 and the -- our management has given us varying guidance,
15 depending on the case-by-case basis.

16 The language in the guidance, it does use words
17 like "evaluating the relative risk comparison." You know,
18 but they -- part of -- as guidance -- as this is a guidance
19 document, our management has interpreted this rather flexibly
20 on a case-by-case basis.

21 MR. O'KEEFE: Relative.

22 MR. ATWATER: See, I didn't have the words in front of
23 me, but it says what I thought I characterized it, which is
24 as guidance. Simply put, if you look at the historic data
25 since 1997 when we started monitoring perchlorate, the

1 record's clear that on the upper sphere it's ranged between
2 four and ten parts per billion.

3 It's true that in Nevada they are working on that
4 clean-up strategy, but if you were to do an honest appraisal
5 of that data, it's certainly reasonable to assume in the
6 future, particularly the lower flows in the Colorado River
7 and Lake Mead dropping, that relative concentration
8 perchlorate could stay in the range of four to ten parts per
9 billion based upon the historic monitoring.

10 They are hopeful that that remedial action -- it's
11 kind of like here. It's like saying that this project will
12 solve the background levels of perchlorate in the basin.
13 Well, we know that is not true.

14 You can't suppose that that remedial action -- and
15 that is a good question to ask, what is the future projected
16 quality in the Colorado River over the next decade? Simply
17 put, it could be in excess of 4 parts per billion. The way
18 DHS's definition of an action level, that the imported water
19 supply doesn't have to comply with that.

20 MR. SORSHER: What do you mean --

21 MR. ATWATER: Metropolitan can serve it today.

22 MR. SORSHER: Oh yeah, they can serve it, the action level
23 is not enforceable.

24 MR. ATWATER: True but it is a different threshold..

25 MR. BURIL: Hold on a second, technical difficulties.

(Court reporter is changing her audio tape)

1 MR. ATWATER: The only point I is make from a permit
2 standpoint, from a DHS regulatory standard, that is a
3 different threshold than it is with ground water.

4 MR. SORSHER: Okay. Well, you know, I don't think we
5 need to get into the detail and minutia of that. I think
6 these are all items that we're going to have to face as we go
7 through the process. And that's kind of why it is that it
8 takes as long as it takes sometimes.

9 MR. RIPPERDA: Well, you guys have answered my question,
10 and in great detail. Thanks.

11 MR. ATWATER: The point is that if you were concerned
12 about that -- and I don't want to belabor it -- all of that
13 data and engineering information is readily available. And
14 it's easily -- it wouldn't -- it's not going -- there's no
15 reason why NASA and the Navy and their contractors would have
16 any problem getting that data, and there's no reason why
17 Metropolitan wouldn't want to cooperate. All of it is
18 existing information.

19 So it's nothing like, you know, like my client
20 Foothill has monitored on their own perchlorate data on a
21 monthly basis for the last fours year with Montgomery
22 Labs, and of course Metropolitan publishes their data on a
23 monthly basis of what's in the upper feeder, what's in the
24 Colorado aqueduct, all of that, so it's not like that
25 information is difficult to retrieve. You could have it in a

1 matter of weeks.

2 MR. MARTINS: But I'm not clear. Are we doing a risk
3 assessment, or are we just going to compare relative risk by
4 looking at the concentration differences, and if the treated
5 water is lower perchlorate in the Colorado source, then we
6 just say it's better and that's it, or do we have that to --

7 MR. SORSHER: I think we'll have to give you guidance
8 when the time comes.

9 MR. O'KEEFE: I can't elaborate on the requirements.

10 MR. ATWATER: This is a unique situation. I think
11 obviously you're going to want to talk to, you know,
12 management at DHS of how you want to present that
13 information.

14 MR. BURIL: And with it being a unique situation. It's
15 not one that we're going to solve here today.

16 MR. ATWATER: Right. I just think somebody -- my only
17 point was is that at a public meeting, somebody is likely to
18 ask that question, because it's well documented, and it's
19 well covered in the newspapers.

20 MR. SORSHER: Absolutely.

21 MR. ROBLES: So what you're basically saying, you may
22 not like the water coming out of ISEP, but you approve MWD
23 water.

24 MR. SORSHER: Sometimes that happens. We'll have to
25 evaluate it.

1 MR. RIPPERDA: Don't act surprised, Richard. You work
2 for the government too.

3 MR. SORSHER: The only other thing I might add on 97-005
4 is we did have this meeting with the City and Richard and
5 some of the folks from NASA, JPL, and we did get together and
6 have a meeting October 31st to go over the process.

7 There were some questions that arose, and we just
8 received a letter from the City -- actually, I got this just
9 before I was leaving on vacation -- looking at some different
10 scenarios and how 97-005 would apply to certain operational
11 scenarios.

12 So we're going to have to get together internally
13 and get back to the City and respond to this letter of
14 November 20th.

15 MR. ZUROMSKI: And that might be a good time to have our
16 next meeting with the City, subsequent to the meeting that
17 we're going to have with them to discuss the EE/CA, to maybe
18 discuss some of their concerns. We can all sit down together
19 and talk about them.

20 MR. SORSHER: All right.

21 MR. ROBLES: What date is the letter?

22 MR. SORSHER: November 20th.

23 MR. ZUROMSKI: Both Peter and I were copied on that too.

24 MR. SORSHER: Yeah. And CH2M Hill was copied.

25 MR. ZUROMSKI: Okay. Should I ask the question, does

1 anybody else have anything else on 97-005?

2 MR. BURIL: Don't ask.

3 MR. ZUROMSKI: Okay. Let me -- I'm going to quickly
4 condense at least the first part of No. 7 right now.

5 First thing, admin record website, it is up and
6 running at Altadena and Pasadena central libraries, and it
7 has worked. We've had it tested and public people have
8 tested it, and it works as well.

9 The only place that we haven't gotten online yet is
10 La Canada because they have some new procedures they're
11 putting in place at the beginning of the year, and they
12 wanted to wait until their new computer system was in place
13 before they put the record on their database. And so we'll
14 be contacting them earlier in the new year to get that
15 finalized.

16 And then we'll have all of our electronic -- all of
17 our administrative records in electronic format, and then the
18 intent would be over time to reduce the paper repository
19 eventually completely, and then completely rely on the
20 electronic access. But at least for the interim, while we're
21 still working out the bugs, make sure everything works, we're
22 maintaining both the paper and the electronic copy of the
23 admin record.

24 The community relations plan addendum, I'm happy to
25 announce that with detailed negotiations with NASA's

1 attorney, Peter and I yesterday, the community relations plan
2 addendum will go out with the flow charts with some minor
3 language changes here and there, and that's going to be
4 published as an addendum probably within the next -- well,
5 after I give Keith his comments. It's probably going to take
6 him a few weeks. So I would say probably in the new year,
7 beginning of the new year, the community relations plan will
8 be updated as well. So that's a good thing. And then we had
9 some comments on that last time. The flow charts are in.

10 Fact sheet I think we talked about, so we'll skip
11 that.

12 And so now we have a few things that might take a
13 little bit longer to talk about, so I would propose that we
14 can either, number one, take a break right now, and then talk
15 some more and then have lunch, or have lunch. Because it's
16 really -- some of these things we might talk about a little
17 bit more than others. It's really up to everybody here.

18 I know that, you know, we might have to take on our
19 way -- what we'll probably end up doing is walking to lunch
20 and then to the pilot study, and then maybe walking back and
21 maybe Chuck can pick us up here afterwards.

22 MR. BURIL: I could pick you up at the pilot study.

23 MR. ZUROMSKI: Yeah. Or we could be picked up at the
24 pilot study. Either way, it's probably not going to matter.

25 MR. ROBLES: What are the items?

1 MR. ZUROMSKI: Well, the first item is the public
2 meeting for the removal action. I know we wanted to talk
3 about that.

4 And assuming, of course, that the EE/CA is
5 finalized in, you know, the next month or so, depending on
6 the City's comments, the EE/CA would be final, and then we
7 would put it out for 30-day public review, and then we'd want
8 to have a public meeting as well. And of course the earliest
9 that could happen right now would probably be sometime toward
10 the beginning of February. It takes us about two months to
11 get everything online and ready to go.

12 Now, of course, we had talked about format for the
13 meeting. We had talked about who would attend and items like
14 that. I mean, if we want to just leave it at that right now
15 and say let's just wait and see what happens with finalizing
16 the EE/CA and then we'll decide on the public meeting, or do
17 we all think we want to try to set a date and kind of
18 anticipate a time for the public meeting?

19 MR. RIPPERDA: No. I want to wait for the City of
20 Pasadena. That's a big unknown. And then once that happens,
21 let's -- since you're not going to be in the field doing any
22 work for at least a year, there's no reason to rush the
23 public meeting now.

24 MR. ZUROMSKI: Okay. So what we'll end up doing then is
25 we'll work with the City, finalize their comments and

1 finalize the EE/CA, and then probably at either one of the
2 next two teleconferences before the next face-to-face
3 meeting, we'll discuss how we want to proceed with that.

4 Okay. That was easier than I thought.

5 MR. ROBLES: I would also recommend that once we get
6 that done, that we just have a meeting on the public meeting.

7 MR. ZUROMSKI: We could do that over the phone if we
8 need to.

9 MR. ROBLES: 'Cause it takes a lot of coordination, and
10 we want to make sure that we have that as a focus because we
11 need to have a lot of players. So when we're doing a public
12 meeting, it should be the only item on the agenda. Whether
13 it's a telecon or a meeting face-to-face, we need to focus on
14 that.

15 MR. ZUROMSKI: Okay.

16 Does anybody else have any questions or comments on
17 that?

18 Okay. So then really our last discussion item,
19 which is really for the rest of the day, is the OU-1 pilot
20 study progress and plan.

21 So let me give you a quick rundown of what's been
22 going on.

23 First off, we had sent out the pilot study work
24 plan, and the initial intent was we're going to do both an in
25 situ reactive zone in the vadose zone and the groundwater.

1 So our intent was we were going to drill about six wells,
2 four of them -- one of them as an injection well, three as
3 groundwater monitoring wells, in addition to No. 4 being MW7,
4 and then two vadose zone monitoring wells.

5 So we begin our drilling --

6 MR. SORSHER: Excuse me. Just to make sure, Jeff,
7 you're talking about treating the perchlorate on site?

8 MR. ZUROMSKI: Yes, correct.

9 MR. SORSHER: In situ treatment of perchlorate on site?

10 MR. ZUROMSKI: Correct. And one of our -- what we're
11 thinking is one of our hot spots in the groundwater, we
12 figured this was one of the best spots. This is also where
13 we performed three other ex situ treatment pilot studies for
14 perchlorate. We figured just because of the levels we see in
15 this area, that it makes it really conducive for pilot
16 testing in the area.

17 So the intent was of course seeing the levels that
18 we've seen in that area that we could probably find both a
19 vadose zone possible source, which we didn't have any data
20 on, and then definitely a groundwater source which we've had
21 extensive data on.

22 So we drilled our first well, which was the
23 injection well back -- it's got to be almost a month now
24 since we started drilling that. I think it was
25 November 8th or 9th that we started.

1 And we drilled that well, we sampled it every ten
2 feet, and we had several geologists, including Mr. Clepton
3 here, out there watching and looking for any anomalies we'd
4 see in the geology that might indicate that was a good place
5 to find perchlorate. And we took a lot of perchlorate
6 samples in the soil, and we came up with nothing. And we
7 only came up with 200 parts per billion in the groundwater
8 sample that we took.

9 And now, of course, if you think about what our
10 latest groundwater sampling in the area, we're seeing eight
11 parts per million, and we only found 200 parts per billion,
12 we said, "What's going on?"

13 So we said, "Okay. We don't know exactly what's
14 going on."

15 So we drilled our second well, which was one of our
16 monitoring wells. And so initially we weren't going to
17 sample this monitoring well for perchlorate as well because
18 we figured we've have a good characterization with the first
19 one, but we decided to do the same thing with the first
20 monitoring well.

21 And unfortunately the second time we found no
22 perchlorate in the soil. We had one duplicate, which we had
23 like 18 parts per billion in the soil, but they had a
24 duplicate that they're looking at because they think it might
25 have been a lab error because everything above and below that

1 was nondetect.

2 So again, then we hit the water table, and we hit
3 around 355 parts per billion. Now, again, this raised a
4 question if our mind, why are we seeing still in the hundreds
5 of parts per billion when in MW-7 only about 15, 30 -- you
6 know, I guess about 30 feet away, it was eight parts per
7 million or eight thousands parts per billion.

8 So what we're doing right now, and we'll see today
9 when we go up there, is that we're doing -- we did some
10 discrete sampling throughout the well as we drilled it,
11 number one, to see maybe if there's certain lenses where we
12 could find more perchlorate than others instead of maybe a
13 dilute sample. And when we did that, at about 20 feet past
14 the water table, we found 4,210 parts per billion.

15 So it sounds like we have some kind of
16 stratification. We can see maybe there are certain places
17 where there is a higher source of perchlorate than others.

18 So the other strategy we had in that we probably
19 may see or may not see -- I don't know. They probably
20 finished it today. They ended up drilling this well about 50
21 feet deeper than they originally had planned. They were
22 going down to 300 feet, which is actually below the level of
23 MW-7, again, to see maybe it seems like the level gets higher
24 the further down we go.

25 So we haven't -- we don't have those results back

1 get. And like I said, the latest results were 254 feet, and
2 that was just on Tuesday, I think. Yeah, it was on Tuesday.
3 And so we might have some results when we go up into the
4 field today, and we might be able to ask them what the
5 results are.

6 But -- so that basically said that, okay, well, it
7 seems like we sort of solved the problem with the groundwater
8 issues, and we know that there's perchlorate there, we might
9 have to just do specific injections as part of a groundwater
10 study, but for the most part that kind of shot our idea for a
11 vadose zone study.

12 So we all sat down at a meeting about a week and
13 half ago, Chuck, Peter, myself, the contractors,
14 Dave Clextan from Battelle, and said, "Well, maybe we can
15 take one more reasonable step instead of going on a witch
16 hunt," which we really don't want to do at this point
17 because, you know, the facility's large, the wells cost a
18 hundred thousand dollars each. How many can we drill at a
19 reasonable price?

20 And so we said, well, there's maybe one location
21 that we at least can try, to see if we can do this soil study
22 still on the facility.

23 So we looked at the old remedial investigation, and
24 we looked at some of the old source areas where the seepage
25 pits were, and we're going to drill in the location right

1 through what we think is one of the old seepage pits that is
2 a likely area where perchlorate and VOCs were dumped into the
3 area.

4 We're going to try to drill right through that
5 area, and if we do find perchlorate in the vadose zone, we're
6 going to treat that as our vadose zone study, and treat the
7 area we're working on at MW-7 as our groundwater study.

8 If we don't find anything there, we're pretty much
9 going to kill the vadose zone idea for the time being while
10 we kind of sit back and re-evaluate what we found because we
11 are doing this kind of as we go right now. We really don't
12 know what we found or what we're likely to find.

13 So depending on the results of that last well,
14 which will be drilled possibly starting Monday, but probably
15 not until later this week I don't think at this point because
16 they're just working on the last monitoring well --
17 groundwater monitoring well at the current location. We're
18 going to see maybe if we can expand this to vadose zone or
19 not. So it's kind of up in the air at this point.

20 MR. AKKENAPALLY: Will this new well be close to
21 extraction -- vapor extraction well VE-1 --

22 MR. ZUROMSKI: No. No. This well is -- Peter, if you
23 want to maybe pull out that map behind you.

24 This well is right where one of those supposed
25 seepage pits were. I think it's pit No. 35, I think it is.

1 And it's right below building 117. We're actually drilling
2 right in the parking lot in front of that building where we
3 think the seepage pit was.

4 Of course, the problem is that everything, of
5 course, in the past has been paved over so nobody knows
6 exactly where the seepage pit is, so we're going to be using
7 some ground-penetrating radar and some other techniques to
8 try to identify the right location. But we think that if we
9 get close enough, if there's anything in the area, no matter
10 if it's five feet off or ten feet off, if it's there, it's
11 there; if it's not, it's not.

12 So that's our next step in this process. And
13 again, like I said, if that doesn't work, we'll probably --
14 we'll use the data from that. You know, we'll probably go to
15 groundwater and see what we find in the groundwater, but
16 we'll abandon the idea of doing any vadose zone studies at
17 this time, and we'll concentrate on proving the concept of
18 the in situ technology for groundwater, and then we'll move
19 on to other things as we can rethink it at a later date.

20 MR. ATWATER: What's the history on the seepage pits?
21 When did they stop, get covered up, all that? I mean --

22 MR. BURIL: It varies by location, but they were all out
23 of service by the '60s.

24 MR. ATWATER: So this is all '40s and '50s kind of --

25 MR. BURIL: Yes. Right.

1 MR. ATWATER: And JPL went on the sewer system in '58,
2 so you probably got rid of all the (inaudible) after that.

3 MR. BURIL: That's correct.

4 MR. ATWATER: So in the early '60s --

5 MR. BURIL: Early '60s everything was out of service, as
6 far as we know.

7 MR. ATWATER: So when you explain this, you're saying,
8 well, perchlorate, being a salt, got all leached out of the
9 vadose zone.

10 MR. ZUROMSKI: Quite possible. I mean, there's a lot of
11 theories --

12 MR. ATWATER: (Inaudible) after 40 years, you know.

13 MR. ZUROMSKI: Right. But, of course, then why do you
14 still see a high level source on the facilities is the other
15 question? If it's such a, you know, soluble salt, it should
16 have all flowed off the facility, which we haven't seen.
17 It's still very stable on the facility.

18 So, I mean, these are a lot of the things that
19 we're thinking about right now. I mean, this is really as we
20 go, trying to say, "All right. This is what we're seeing in
21 this location. This is what we suspect happened
22 historically. How can we correlate all that information and
23 see what we can find?"

24 I mean, the big part is, sure, I mean, we could
25 drill a ton of wells and, you know, poke around, but, you

1 know, that's going to cost millions of dollars at this point,
2 which from a, you know, purely guessing standpoint probably
3 isn't wise. When we have more data based on the study that
4 we're doing right now, that's another story.

5 So as part of the pilot study, that's the approach
6 that we're taking. And what you'll see today is they're
7 probably going to be finishing up the drilling of the last
8 monitoring well at the MW-7 location, and then in January
9 they'll start the injections for that location. Then
10 depending on what we find in the next couple of weeks up at
11 the other location, we may have to drill more wells if we
12 find something that would be used as part of the other pilot
13 study, or we might just use that one well as just a monitored
14 well and just abandon the pilot study in that area.

15 So there's a lot of things kind up in the air at
16 this point so -- which are vary -- which vary from the
17 initial intent of the pilot study work plan.

18 So, Mark?

19 MR. RIPPERDA: I appreciate you going to the seepage pit
20 and looking for an additional source.

21 MR. ZUROMSKI: It was really the only spot we thought
22 that if we were going to move somewhere else, where else
23 would we move at this point?

24 MR. RIPPERDA: And did you get core samples from below
25 the water table?

1 MR. ZUROMSKI: Yes.

2 MR. RIPPERDA: Have you had those analyzed yet?

3 MR. ZUROMSKI: We are. I mean, as far as the ones that
4 we're looking at right now?

5 MR. RIPPERDA: Yeah. Like when you did the multi-layer
6 sampling in the water.

7 MR. ZUROMSKI: Right. Those are the numbers I was
8 telling you about, 355 --

9 MR. RIPPERDA: So you found 4,000 --

10 MR. ZUROMSKI: At one discrete location.

11 MR. RIPPERDA: -- at one level (inaudible).

12 UNIDENTIFIED SPEAKER: In the soil.

13 MR. ZUROMSKI: No, no, no. In the groundwater. This is
14 all groundwater.

15 MR. RIPPERDA: Yeah, I know, that's groundwater.
16 So did you get soil samples at those -- or near
17 those layers in the aquifer?

18 MR. ZUROMSKI: I'm not sure if they did, but I wouldn't
19 see what the reason would be aside from --

20 MR. AKKENAPALLY: It would be saturated.

21 MR. ZUROMSKI: Yeah. For the most part, it's completely
22 saturated.

23 MR. RIPPERDA: Right. Well, of course that's in the water
24 table.

25 MR. ZUROMSKI: Yeah.

1 MR. RIPPERDA: But my question leads into you -- at some
2 point the conceptual model you need to try and calculate total
3 mass in place --

4 MR. ZUROMSKI: Sure.

5 MR. RIPPERDA: -- you know, causable sources.
6 You know, vadose zone, hot spots in the aquifer, you know,
7 what the level in the water in the aquifer water is, what the
8 partitioning co-efficient, how much. It's like yeah we know
9 perchlorate is very soluble in water.

10 MR. BURIL: Partitioning co-efficient is like one isn't
11 it?

12 MR. ZUROMSKI: Yeah.

13 MR. RIPPERDA: Yeah. So how much is in the soil matrix?
14 You know, you've got an ongoing hotspot --

15 MR. ZUROMSKI: Right.

16 MR. RIPPERDA: -- is it just because the groundwater's
17 so stagnant in that area that that groundwater's just not
18 moving off-site?

19 Well, it's moving off-site to some extent because
20 you have a plume that's at 20 PPB that extends, you know,
21 through the Arroyo, and that's -- you know, the site model is
22 what you have to really be thinking about and what data do
23 you need to say how much mass you have in place and where is
24 that mass?

25 MR. ZUROMSKI: I think actually we are doing that to

1 some extent. I know that Keith and Battelle are working on
2 the conceptual model. And one of the reasons why we chose
3 that second location was it was actually to also fulfill data
4 for the conceptual model.

5 So if there are things that you think that maybe we
6 didn't do on these wells that maybe we should do as part of
7 the conceptual model, which is part of that -- another
8 purpose for that new well we're going to drill at 117, you
9 know, there -- we can -- there's definitely time -- there's
10 time right now to make any recommendations that you think.

11 MR. BURIL: I think it's interesting to note that the
12 data that you're seeing so far flow well with the conceptual
13 model. Because the mechanism that is pulling contamination
14 off-site is the off-site wells, and it has to pull it down
15 first and then across. And so we are seeing it at depth.

16 MR. ZUROMSKI: Right.

17 MR. BURIL: And we are seeing it deeper off-site than we
18 do in the shallower portion, so it does work.

19 MR. ZUROMSKI: And one of the things I think Keith and I
20 were talking about the other day is also part of -- one of
21 the things as far as conceptually is, you know, we could
22 have -- the sources could have been such a heavy salt water,
23 you know, perchlorate water that they did just sink straight
24 to the bottom, and maybe we don't have that much in the
25 vadose zone. I mean, these are things that we are trying to

1 confirm.

2 MR. ATWATER: (Inaudible) and this goes back to a couple
3 years ago when we were looking at modeling and scenarios,
4 since you're talking about something over the last 50 years,
5 when you have really wet periods, and you remember when we did
6 the modeling in the Monk Hill area and you have high flows
7 coming down the Arroyo, you're going to have a large mounding
8 and high water levels below the lab.

9 And then what happens is the vadose zone shrinks,
10 and you might have captured that -- since you're talking
11 about since the -- basically from 1960 till now, and I can go
12 through the big wet periods, you know, '69, '83. And
13 you're sort of right in saying that, okay, the pumping --
14 pumping, but in dry periods, if the vadose zone is really
15 long, it's probably not (inaudible) getting pulled off the
16 lab.

17 In fact, my argument, which you won't agree with,
18 but I think strongly that explains why you have perchlorate
19 upgradient over here in La Canada. And the reason why is
20 because in the really wet periods when you had high water
21 levels, sure, Valley and La Canada irrigation were
22 running their wells.

23 Water levels, going back to DWR reports in the '60s
24 and '70s, it was flat across here. And particularly at times
25 when you asked Pasadena, DHS knows this because of nitrates

1 in the wells they quit pumping, you could see the flow
2 patterns change. Lincoln's wells have been off and on again
3 for the last 15 years because of DHS requirements on their
4 wells. That would change enough to move it around. That
5 certainly explains forty years ago the low levels you had in
6 Rubio in Las Flores; easily explainable about forty years from
7 the lab.

8 How you could ever figure out -- the only reason
9 why I make that point is 'cause you can look at the historic
10 data throughout Southern California where you have high
11 Colorado river use, you don't see necessarily perchlorate.

12 For example, where they recharged over a million
13 acre feet of Colorado River water (inaudible) in the
14 1960s or along the Santa Ana River with Orange County.

15 MR. BURIL: You wouldn't see it before anything that was
16 done in 1988.

17 MR. ATWATER: Well, if you go back in the history of the
18 Las Vegas wash.

19 MR. BURIL: The incident that created the problem
20 in the Colorado River took place in 1988.

21 MR. ATWATER: I -- well, Kerr McGee has been there since
22 the '50s and '60s.

23 MR. BURIL: It was the explosion that created the
24 problem by spreading the stuff all over the place and then
25 was rinsed out and sent down the wash.

1 But that happens before, I would contend, is nice
2 academically but really has no bearing on the situation.

3 MR. ATWATER: Well, in that case, in the short run in
4 the last 12 years it wouldn't have -- you're not going to see
5 irrigation return flows, it wouldn't get down to the vadose
6 zone in ten years.

7 MR. BURIL: Unless it's injected.

8 MR. ATWATER: Well, they injected it in the Dominguez
9 West Coast Barrier out in east bay and I can show you that
10 data there. It doesn't show up.

11 MR. ZUROMSKI: Well, I know this is a discussion that
12 we've had many times in the past, and we don't want to
13 belabor it too much.

14 But anyway, back to the pilot study issue --
15 Yeah, Mark, go ahead.

16 MR. RIPPERDA: I want to belabor it for just another
17 minute.

18 MR. ZUROMSKI: Oh, sure.

19 MR. RIPPERDA: Because it is an important question --

20 MR. ZUROMSKI: Sure.

21 MR. RIPPERDA: -- and it goes back to what DHS said
22 earlier about, you know, not wanting -- you know, big
23 picture, not just looking at the removal action. You know,
24 we've been asking you to come up with some kind of
25 documentation where you state your case on this, that people

1 like Richard who disagree with you and have a lot more data
2 than I have can take their potshots at your reasoning and --
3 whether it's part of the source water review, although it
4 looks like that's too far along to tax all this on to that,
5 but I would certainly like to see NASA do a comprehensive
6 analysis of perchlorate in the entire basin, take samples
7 from -- and you laugh, but I'll still ask -- take samples
8 farther up-gradient than what you have or, you know, get the
9 water purveyor's data and get some of the data that Richard's
10 talking about where people have injected Colorado River water
11 after 1988 --

12 MR. ATWATER: DHS has all that electronically, all that
13 perchlorate, title 22 monitoring program in the basin.
14 Actually CH2M has it too.

15 MR. RIPPERDA: The City of Pasadena is just starting now
16 to kind of come after you for the far down-gradient wells,
17 and I don't want to just have the same -- I know we've
18 discussed this a bunch of times, okay, move on --

19 MR. ATWATER: The only injection well, by the way, is the
20 valley well and that's just the issue of why do you have
21 background low levels of perchlorate in La Canada?

22 And arguably, Chuck likes to say, well, maybe it
23 was septic tanks or maybe it was Chilean fertilizer and
24 maybe it was Colorado River water.

25 But I think an easier explanation after 50 years of

1 looking at the hydro geology and the water operations in this
2 area -- because we have -- we've looked at DWR water level
3 measurements -- there are periods over the last 40 years
4 where the gradient in the '60s and '70s went that direction
5 because of the pumping patterns. Chris Naygor (phonetic) at
6 DWR has that data.

7 MR. BURIL: We also looked at the -- right before

8 MR. ATWATER: But Rubio and Las Flores, there's no
9 injection over there, so there's no explanation from that
10 standpoint.

11 MR. BURIL: Let me finish what I was going to say
12 because we did look at the water levels here on site and
13 compared them to when the up-gradient water purveyors were
14 pumping, and the predominant flow direction was still away
15 from those water purveyors in the area of the lab.

16 So there was no indication of an influence from the
17 water being pumped from those wells and drawing it back. And
18 that -- we have that documented.

19 MR. RIPPERDA: Right. So my request is that NASA
20 produce a technical memorandum on this with whatever water
21 data you have and then, if you look at it and you say, "Oh,
22 well, you didn't look at this map from 19" whatever "that
23 shows something else, then you produce that map and" --

24 MR. BURIL: Sure. That makes perfect sense.

25 MR. ZUROMSKI: NASA will take your request into

1 consideration.

2 MR. ROBLES: My only comment is, Mark, do you want to
3 expand the Superfund, the government's responsibility?

4 MR. RIPPERDA: Not at all. We've talked about this
5 pretty much at every single meeting, I've made the same
6 request. And in the past, when the levels were at 18, it was
7 just a request. I wanted to understand the situation. Now
8 that the levels are going down to possibly 6, 4, or 1, I'm
9 going to start asking with a little more authority. It's
10 going to pretty soon turn into a demand rather than a
11 request.

12 And so it would behoove you to at least think about
13 it. I'm not asking you to expand the NASA Superfund site
14 into the entire L.A. Basin, but you need to define what the
15 parameters of your Superfund site are. You know, reasonable
16 intelligent people are saying it's much bigger than the
17 immediate footprint of NASA and a little bit of OU-3 offsite
18 stuff you've already delineated.

19 And as the largest user of perchlorate in the
20 region, you should certainly look, you know, a little bit
21 up-gradient, a little bit cross-gradient, and down-gradient,
22 you know, look at other potential sources.

23 I'm not telling you you have to slap well head
24 treatment on every well with perchlorate in the entire basin,
25 but you need to start addressing whether or not you are the

1 responsible party for the wells with perchlorate in the
2 basin.

3 MR. ZUROMSKI: NASA is currently doing such an analysis.

4 MR. RIPPERDA: Thanks.

5 MR. ZUROMSKI: That's the official answer.

6 MR. RIPPERDA: Okay.

7 MR. ROBLES: Just be advised that when we take this up
8 with headquarters, you may be talking about a dispute
9 resolution issue.

10 MR. RIPPERDA: Absolutely. I know that. I know the DOD
11 has already had huge problems with being asked to look at
12 perchlorate.

13 And I won't go to the political stuff that Richard
14 raises that whether it's from MWD or not, it ultimately comes
15 from the federal government. You know, NASA pays for NASA's
16 problems, not for Kerr McGee's problems as a contractor to
17 DOD, but as long as there's a reasonable argument that water
18 is flown from JPL up-gradient, you need to show that it
19 hasn't. If you believe it hasn't, then you need to show
20 that.

21 So I'm not asking you to go out and do field work.
22 I'm asking you to do a record search of other peoples'
23 existing data and prepare a technical memorandum on that, and
24 maybe do a touch of sampling here and there where there's
25 some data gaps.

1 MR. ZUROMSKI: Okay. Does anybody else have any other
2 questions as far as the pilot study goes and the procedure?

3 I mean, we can -- we'll talk more about this when
4 we go out and see it in the field too, so...

5 Okay. If not, I guess maybe now that I'm looking
6 at it, we've really finished all of the agenda items, and we
7 may not come back into this room. We may go straight into
8 the tour after the pilot -- after lunch and then after the
9 pilot study tour.

10 So I'd like to try to set the dates for the next
11 meeting now. Unfortunately, you know, I was prepared to do
12 this after lunch so I don't have my calendar in front of me,
13 but it would be sometime in the beginning of March would be
14 the next face to face, and then we've got a -- maybe a
15 January and a February date that we need to look at. So let
16 me just run and get my calendar quick. It'll take me two
17 seconds.

18 And before we do this, Michael reminded me of one
19 thing I skipped on here. I just skipped over it. And I
20 guess the reason is, is because David Young isn't here --
21 is the waste discharge requirement for the pilot study for
22 the injections we're doing.

23 And our intent was to comply with the substantive
24 requirements of the WDR, the L.A. Regional Board's WDR. And
25 we had discussions with Dave Young from the Regional Board

1 about that, and we haven't -- I haven't, at least, heard what
2 the status is. I think the status is go right now, but I
3 haven't heard the official status from Dave yet. And of
4 course, knowing how we've worked within the past, most of it
5 has been basically just go and go ahead and work on it.

6 MR. BURIL: Can you elaborate on that just a little bit?
7 What WDRs are you referring to and how are they being
8 applied?

9 MR. ZUROMSKI: The waste discharge requirements for
10 injection of the corn syrup mixture for the pilot study. And
11 part of that, of course, includes using diluted -- we're
12 trying to dilute the corn syrup down to about a two percent
13 solution, and one of the major issues we have with that is
14 that most of the water or any water that we can get in this
15 area is higher in chlorides than is currently allowed
16 normally into the basin. So we're trying to work with the
17 Regional Board on this issue.

18 MR. ATWATER: (Inaudible.)

19 MR. ZUROMSKI: Exactly. Exactly.

20 MR. ATWATER: This just reminded me, in your 97-005,
21 when you were talking about the permit, since your start-up
22 in one of your alternatives in the plant, for the ISEP plant,
23 is you're going to want to spread the water, you are going to
24 have to get a waste discharge permit from the Regional Board.

25 MR. ZUROMSKI: Right.

1 MR. ATWATER: And they're going to want --

2 MR. BURIL: There's new WDRs coming out for general
3 discharge for two surface water impoundments coming out in
4 February of next year and that impacts other facilities here
5 at JPL who are already are permitted.

6 MR. ATWATER: What is -- I mean, this is a recharge
7 operation, and I'm just trying --

8 MR. BURIL: Doesn't matter. According to what I've been
9 told, they view it the same because it's coming from a
10 treatment facility as opposed to natural runoff.

11 MR. ZUROMSKI: In any event, that's something that we
12 are working with the Regional Board on.

13 Thank you, Michael.

14 And that's -- I'm kind of disappointed that Dave
15 couldn't make it today, but that's something that we'll make
16 sure is addressed prior to starting our injection in January.

17 But for the most part, from what I've heard right
18 now, and from my contractor who's been doing the work for us
19 and working with the Regional Board, that they say it's not
20 going to be a problem. We should be able to easily do this,
21 so we'll let you know if there is a problem.

22 So anyway, back to our meeting dates, the dates I
23 have right now, I guess, if we look at the first Thursday in
24 March for a face-to-face, that would be March 6th.

25 Does anybody have a problem with that?

1 Okay. If not, face-to-face is on March 6, 2003.

2 And then the other dates, let's see, for January --
3 I'm assuming that nobody wants to have it on January 2nd, so
4 I'm thinking maybe January 9th for a teleconference, going
5 once --

6 MR. SORSHER: What day of the week is that?

7 MR. ZUROMSKI: They're all Thursdays. They're usually
8 the first Thursday, but that would be the second Thursday.

9 I know, Richard, you can't make those times.

10 MR. GEBERT: Second Thursdays.

11 MR. ZUROMSKI: Want to do it on Wednesday instead, on
12 the 8th.

13 MR. GEBERT: That would be fine.

14 MR. ZUROMSKI: Okay. Let's do that on the 8th. So that
15 would be teleconference --

16 MR. SORSHER: Is that the second Wednesday?

17 MR. ZUROMSKI: Second Wednesday.

18 MR. SORSHER: I have a meeting in the morning in
19 Glendale on the second Wednesday.

20 MR. O'KEEFE: One of us will be available.

21 MR. SORSHER: One of us. All right.

22 MR. ZUROMSKI: And then the other one would be the first
23 Thursday, then, of February, which would be the 6th of
24 February.

25 MR. ATWATER: What time is the teleconference?

1 MR. ZUROMSKI: All teleconferences are usually at
2 ten o'clock. And I'll give you -- Richard, if you give me a
3 card, I'll include you on the distribution. What we'll do is
4 we provide an 800 number, and everybody can call in and check
5 on that.

6 MR. SORSHER: What day in February is it?

7 MR. ZUROMSKI: The 6th of February. It's the first
8 Thursday, which would be the normal time for -- most -- most
9 all of the meetings are the first Thursdays, unless it's
10 January 2nd.

11 So with that, does anybody else have any other
12 issues that we don't want to -- that we can't address up at
13 the pilot study site?

14 Chuck?

15 MR. BURIL: Who is going on the tour with me? I need a
16 count of hands.

17 MR. POUND: Is this the bonus tour?

18 MR. BURIL: Well, if you want to call it that, that's
19 fine.

20 MR. POUND: I'm looking at this, and there seems to be
21 two tours, and I'm just --

22 MR. ZUROMSKI: The one is the walking tour of the pilot
23 study site, and that's it. And then what would happen is
24 Chuck would then pick us up from there, anybody who wants to
25 go, and do the grandiose site tour of the entire site to kind

1 of get a perspective of how the site is overall.

2 MR. SORSHER: The moving train tour for all the new
3 passengers.

4 MR. RIPPERDA: Which, if you haven't gone on it, you
5 should.

6 MR. POUND: I've been on it a couple times.

7 MR. ZUROMSKI: Dave Clexton wants to go.

8 MR. BURIL: Dave, okay, sure.

9 MR. ZUROMSKI: Okay. So just the three of you. Okay.

10 So then what we'll do is we'll pick you up from
11 the -- at the pilot study site.

12 MR. BURIL: That's fine.

13 MR. ZUROMSKI: Okay. And anybody else have any other
14 items that we want to address right now?

15 MR. RIPPERDA: On the public meeting, even though I
16 asked that we not talk about it specifically, given, of
17 course, the communication problems we had with the last one
18 with the public that you, of course, fixed --

19 MR. ZUROMSKI: Which communications problem?

20 MR. RIPPERDA: Just for your benefit, we ended up
21 scheduling a third public meeting in addition to the first
22 two because there was a snafu with the mailing database.

23 And there's about 5,000 people on the public
24 mailing list, and the database just scrambled the names and
25 addresses. You can always blame the computer.

1 MR. ZUROMSKI: That's what we'll do.

2 MR. RIPPERDA: So I just want to make sure that even
3 though we have an indeterminate time for that is that you've
4 got your process set up, you know what your mailing list is,
5 you've added all the people who asked to be added at the last
6 public meetings, you've got whatever problems you have
7 in-house with e-mail to JPL employees that Chuck identified,
8 you know, having to go through proper channels for -- just
9 that you have all those things in order, and so that that's
10 just ready to go when we actually pick a date.

11 MR. ZUROMSKI: We have that in order.

12 MR. RIPPERDA: Great.

13 MR. ZUROMSKI: Okay. Well, with that, we're going
14 adjourn. We're going to walk over and have lunch, and then
15 we'll walk up to the pilot study, and Chuck will take us for
16 a tour from there.

17 MR. BURIL: Okay. For those of you who have not been
18 here for a while, the main cafeteria is closed.

19 MR. ZUROMSKI: We're actually going to walk to the --

20 MR. BURIL: There's a replacement cafeteria, it actually
21 looks like a tent, out in front of the building out here. It
22 basically serves the same thing.

23 MR. ZUROMSKI: We're going to walk to the one that's
24 further down that has a few more menu selections, and then
25 we'll walk up from there. So just follow us. You can either

1 carry your stuff or you can leave it here. It's entirely up
2 to you.

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