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REMEDIAL PROJECT MANAGERS' MEETING

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NASA/JET PROPULSION LABORATORY

5

4 November 1999

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ATTENDEES:

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Richard Atwater, Bookman-Edmonston Eng.

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Charles L. Buri, JPL

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Mark Cutler, Foster Wheeler

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Phebe Davol, TechLaw

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Richard Gebert, DTSC

14

Mark Losi, Foster Wheeler

15

Judith A. Novelly, JPL

16

B. G. Randolph, Foster Wheeler

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Mark Ripperda, USA EPA

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Peter Robles, Jr., NASA

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Richard J. Zuromski, Jr., Naval Facilities

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Engineering Service Center

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Reported by: Louise K. Mizota, CSR 2818

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November 18, 1999

ENTERED DATE:

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1 Pasadena, California

2 November 4, 1999

3 10:03 A.M.

4
5 BURIL: Okay. Why don't we go ahead and kick it
6 in gear, then.

7 Welcome, everybody. I think we probably
8 have a couple of new faces that folks might not
9 recognize. But why don't we just take a quick
10 second for Louise's benefit to get the players
11 straight and go from there.

12 I'm Chuck Bupil, JPL project manager.

13 NOVELLY: Judy Novelly, JPL.

14 ZUROMSKI: I'm Richard Zuromski with the Naval
15 Facilities Engineering Service Center in Port
16 Hueneme, California and I'm assisting Peter Robles
17 on this project for OU-1 and OU-3.

18 RIPPERDA: I'm Mark Ripperda from the U.S. EPA.

19 DAVOL: Phebe Davol from TechLaw.

20 GEBERT: Richard Gebert from DTSC.

21 RANDOLPH: B. G. Randolph, Foster Wheeler.

22 LOSI: Mark Losi, Foster Wheeler.

23 CUTLER: Mark Cutler, Foster Wheeler.

24 ATWATER: Rich Atwater, consultant to Raymond
25 Basin Management Board.

1 ROBLES: Peter Robles from NASA/JPL.

2 BURIL: Oh, we forgot about you.

3 Okay. First of all, is everybody familiar
4 with Richard's role as far as what's happening?
5 Have we ever really talked about that?

6 RIPPERDA: On the conference call you --

7 ROBLES: Right.

8 GEBERT: Assist Peter in groundwater issues.

9 ROBLES: Particularly with the treatment pilot
10 or hot spot removal project. We're going to be
11 working with the Navy on that as a service center.
12 So NASA will be hopefully submitting funds to them
13 and they will contract out in that sense. That's
14 what we're working on.

15 BURIL: Okay. Let's talk about the first item
16 on the agenda, something that hopefully will be
17 relatively easy. Actually a lot of these things are
18 probably pretty easy to finalize.

19 On the OU-2 RI, we have basically got a
20 couple things ready to present, but I'm not sure if
21 we've got them ready to present right this second,
22 but we'll have them out pretty quick.

23 Mark, I think, it is principally
24 addressing your comments. Maybe we can catch it
25 down the road here once we've got it together and

1 point out what we've got.

2 But if what we've generated is sufficient,
3 then we're ready to go final ASAP. I mean, it's
4 just that simple. We're just getting everything
5 else put together, as far as that goes. We might
6 have it later this afternoon to be able to show it
7 to you.

8 As I recall - unfortunately, I don't have
9 Alex here - but I'm sure you two probably remember
10 the letter that Alex sent us that said basically we
11 don't have an issue with regard to finalizing the
12 RI, but they were concerned about some of the other
13 issues with regard to some of the QA stuff.

14 B.G., can you address a couple of those
15 things that Alex brought out? I know that we've
16 generated a draft letter, but I think maybe just
17 discussing that briefly to kind of bring people up
18 to speed. Most of them were apparently dealing with
19 the guidances that we were using, and so forth.

20 RANDOLPH: Well, he wanted to know if we were
21 following the '97 guidance, which we are. We
22 reassured him of that.

23 The other was that supposedly the mid-day
24 calibration didn't show the QA/QC for carbon tet.
25 Well, it just wasn't reported. It was done. It was

1 not reported. So even during the RI we found that
2 discrepancy and had the lab resubmit hard copies.
3 And we had the hard copies and we're sending those
4 to him. Unfortunately, we forgot to change the
5 electronic version that was on the CD-ROM.

6 BURIL: So that was just a --

7 RANDOLPH: That was updated and that will be
8 reissued.

9 BURIL: Yes. We slipped on that one.

10 And wasn't there one other also? Or was
11 that it? I guess that was it. Okay.

12 RANDOLPH: I think I hit both of them at the
13 same time.

14 BURIL: Yes. Okay.

15 So basically, it looks like from that
16 perspective, we're in pretty good shape. I don't
17 see anything that's going to slow us down once we
18 show you what we got, address your comment and we
19 can call the RI portion of this project a wrap, at
20 least at the outset, and we can move on to other
21 things.

22 As far as questions from anybody, anyone
23 have anything that they want to talk about with
24 regard to that particular facet of the program?

25 Great. Okay. I told you this was going

1 to be easy.

2 On the Operable Unit 2 FS, we are
3 basically on schedule right now. B.G. has told me
4 that we will be getting the internal review copy of
5 the FS next week, and we're hopeful that that will
6 have no problems as far as the ultimate delivery
7 date, which I believe is the 28th of December to you
8 folks.

9 RANDOLPH: Really the 20th.

10 BURIL: Excuse me. I'm sorry. 20th. Dyslexic.
11 So you get a little early Christmas present,
12 probably. Lots of things to do over the Christmas
13 break.

14 So any questions on that? That's just
15 basically where we're at. Things are moving ahead
16 pretty well.

17 We're continuing with the soil vapor pilot
18 right now. It's beyond pilot stage now. We're just
19 continuing to run that thing. And the last report
20 we had I want to say in excess of 1200 pounds of
21 VOCs removed from the soil, which is pretty doggone
22 good progress overall. So it appears that if the FS
23 pans out as I think it will, that that will be at
24 least part of the ultimate remedial action. I
25 haven't seen it yet, but I'm assuming that that

1 probably points out that the soil vapor extraction
2 is actually a pretty doggone good idea.

3 On the OU-1/3 feasibility study, here I
4 need to give you a heads up. We're working
5 diligently in trying to resolve some internal
6 problems with that one, just the way it's presented
7 and a variety of things to try and make it clear.
8 We're going to try and get these things resolved,
9 but there is a possibility that we may need the
10 30-day extension on that.

11 GEBERT: That was due November 29th?

12 BURIL: November 28th is when it's -- 28th or
13 29th, yeah. So we're hopeful. But I'm guardedly
14 optimistic that we'll get it. But I have to tell
15 you that we may be coming to you for a 30-day
16 extension on that one, which would mean you'll get
17 it basically the same time frame as OU-2's FS. One
18 before and one after Christmas is what you'll end up
19 getting. So you'll have lots of things to start off
20 the new millennium with.

21 The OU-1/3 FS has proved to be a challenge
22 because there are so many different facets of this
23 thing that need to be evaluated. And that's one of
24 the things that's becoming more and more difficult
25 for us to deal with, is trying to address all the

1 various issues that are out there, not the least of
2 which is things which NASA deems as necessary,
3 things which the regulatory agencies feel are
4 necessary, including DHS, working with folks like
5 the Raymond Basin Management Board, trying to
6 address some of their concerns, if at all possible.

7 We've got other issues that are making
8 themselves known, which are very interesting. I
9 think I'll touch on those here because they have a
10 slight influence on the ultimate remedial action.

11 One of them is what I just gave Mark, is a
12 diagram of the Hahamongna Watershed Park. I'll
13 briefly touch on this. We had a meeting a while
14 back with these folks, and I think I might have
15 mentioned it to you on our last telecon. We've been
16 trying to contact them to sit down and tell them,
17 you know, what we think is happening in terms of
18 their desires for working out the water features and
19 other types of things that we have planned out
20 there.

21 We had a meeting with them early in
22 October, which, I don't know, did I talk to you
23 folks about that at the last telecon? Do you recall
24 that?

25 GEBERT: You mentioned that you had a meeting

1 with --

2 BURIL: We have not been able to get back with
3 them. We've called a couple of times to try and
4 arrange a meeting. And I have a feeling that the
5 folks are probably struggling now to try and
6 understand what the ramifications of the park are.
7 One of the things that we'd like to be able to
8 communicate to them once we finally do get them back
9 with us is that with the increased pumping and the
10 increased spreading that they're talking about in
11 terms of at least part of the economic justification
12 of the park, that could have a fairly serious
13 ramification to what it is we're doing here,
14 particularly since they're talking about expanding
15 spreading basins by somewhere around 50 percent and
16 increasing pumping by something around 50 percent.

17 We've started the idea of trying to model
18 that to try and understand what kind of things would
19 happen to the feasibility of various options that we
20 currently have. There may be the necessity down the
21 road, depending upon the outcome of that modeling,
22 there may be the necessity of perhaps even issuing an
23 addenda to the FS. That's something I haven't even
24 talked to Peter about.

25 But if we do find that there are dramatic

1 changes as a result of that, we may need to stop and
2 reevaluate where we're at with that.

3 Now, we haven't gotten a great deal more
4 information from these folks, with the exception of
5 them telling us that they have a desire to expand
6 the spreading basins by 50 percent, which I think I
7 shared with you, a desire to increase the pumping
8 from the wells in the immediate area by as much as
9 50 percent. And the numbers that they used
10 indicated that they were talking about going from 40
11 percent of the City of Pasadena's water supply to 60
12 percent of the water supply for the city, coming out
13 of the wells immediately along the Arroyo. And
14 apparently they're looking at doing spreading 365
15 days a year potentially, which could have some
16 fairly interesting ramifications to the groundwater
17 flow patterns and so forth.

18 And that's basically where we're at as far
19 as trying to understand what they're doing. They
20 have not provided us with their full management plan
21 as yet. And I think that they're still working that
22 at a conceptual level, because they still have a
23 number of issues that are outstanding. My
24 understanding is that one of the big ones is how you
25 deal with the lake that might be formed behind

1 Devil's Gate Dam. Apparently, by my last read,
2 there's still a great deal of consternation between
3 the Hahamongna folks and the County as to the
4 liabilities associated with the lake, and so forth.

5 As we get that information together we'll
6 pass that along to you. We hope, based on having
7 this the next time we talk on the phone, we should
8 have something to pass along as to the impacts of
9 that.

10 Trying to predict that for the feasibility
11 study has been a real challenge. It's one of the
12 things that's kind of slowed us down, not the least
13 of which in trying to deal with things like that
14 that come along.

15 So any questions on the FS as far as where
16 we're all at right now?

17 RIPPERDA: I have a few.

18 BURIL: Sure.

19 RIPPERDA: First, I imagine one of your problems
20 besides all the policy stuff is just getting your
21 perchlorate proposals all like lined up and figuring
22 out if it's workable or not.

23 BURIL: In part, yeah. We've had -- some of the
24 reports that were due back to us came in late. And
25 as a result, we have had to kind of build those in

1 as we've gone along. So we're still getting those
2 taken care of as we go along.

3 RIPPERDA: But it looks like you actually will
4 have an expensive but affordable way to treat
5 perchlorate?

6 BURIL: That's a good question, Mark. And
7 having not seen those final reports yet --
8 personally I haven't even gotten all the way through
9 the FS yet. But having not seen those reports, I
10 would say that the chances are fair. But with
11 regard to affordable as opposed to viable, I don't
12 know.

13 So that's one of the things that's a real
14 concern right now, is we can find mechanisms to
15 treat for perchlorate. We can use reverse osmosis.
16 We could use things like the Calgon system. ISEP
17 works. There's no doubt about it. The biological
18 systems, depending upon the ultimate disposal
19 technique of the water that's being processed, that
20 works to a certain degree.

21 So any one of these things, or
22 combinations of them, could easily work for us.

23 As to their viability in terms of large
24 scale or depending upon the disposal of the water,
25 then working to the point where it's acceptable to

1 someone like the Department of Health, we're still a
2 little bit nebulous.

3 Also, I think that the next item on the
4 agenda may have some serious ramifications to that
5 kind of decision process.

6 RIPPERDA: The next item being OU-2 or the --

7 BURIL: No. I'm up to item 3 here and I'm
8 looking at item 4.

9 RIPPERDA: Okay.

10 BURIL: Let's try to combine these just a little
11 bit because maybe the two of them are inexorably
12 intertwined.

13 What we've got right now, based on some
14 information I pulled down off the Internet, is that
15 the Office of Environmental Health Hazard Assessment
16 for California are proposing 12 new PHGs for
17 constituents in drinking water. Two of those 12 we
18 already have recognized as a potential concern here
19 at JPL. And another one, perchlorate, we've known
20 about for a while, but I don't know if we've shared
21 the status of that with regard to what we think is
22 happening now. Let me go through each one of these
23 and tell you why it may be a concern.

24 In looking at the feasibility of the
25 various volatiles treatments, we've been basing

1 everything on MCLs. For the perchlorate we've been
2 basing that on the 18 ppb interim limit. And we've
3 been trying to get it down to nondetect, recognizing
4 that it's just good to do that. Nondetect typically
5 has been in the 4 parts per billion range.

6 In looking at the volatiles, the .1 parts
7 per billion -- excuse me -- .5 parts per billion for
8 carbon tet and the 5 parts per billion for PCE were
9 the things that we were focusing on.

10 OEHHA has started the process to lower the
11 PHGs for these two constituents, carbon tet going
12 from .5 to .1, which in itself may or may not be
13 problematic, but we don't know because we've never
14 tested to that level.

15 PCE, even though we believe that JPL isn't
16 a major player in that, of course, anything that we
17 pull out of the ground that has PCE in it we're
18 going to have to treat regardless. That's going
19 from 5 parts per billion to a public health goal of
20 .057, a factor of 100. So 57 parts per trillion.

21 Both of these are reportedly based on
22 potential risk, principally carcinogenic risk as I
23 read the information available on the Internet.

24 ROBLES: Based on?

25 BURIL: Based on studies that --

1 ROBLES: 1942.

2 BURIL: Yeah. Richard here found some
3 information talking about 1942. I personally have
4 not had the opportunity to really go through what it
5 is that is a basis of these things. But certainly,
6 seeing things tightened down by a factor of 5 in one
7 case and by a factor of 100 in another when we're
8 talking about things like re-injection or
9 re-infiltration of water into a drinking water
10 supply or the idea of maybe at some juncture
11 providing it to water purveyors, although that's not
12 something that we've agreed on at this juncture.
13 But leaving that possibility in, certainly I could
14 see the water purveyors having rather serious
15 concerns about accepting anything that didn't meet
16 public health goals.

17 And so the playing field is shifting under
18 our feet as we sit here. And I don't have any
19 schedules, based on what I've seen on the Internet,
20 as to when these PHGs would actually be promulgated.
21 Maybe that's not the right word for it. Established
22 I guess is the best way to put it.

23 But given that that is happening, that
24 does cause us to wonder as to what the impact will
25 ultimately be for anything that we want to put into

1 place here at JPL. And we're struggling with that
2 particular aspect of it right now, given that
3 anything we decide now is something that we would
4 hopefully have in place for the duration of whatever
5 remedial action we have to put into place. It would
6 be really, in my opinion, foolish to go out and
7 spend huge amounts of money when the playing field
8 shifts and then find out that what we've bought as
9 the hopeful use no longer is viable from at least
10 the standpoint of meeting PHGs.

11 So we have not factored that into the
12 feasibility study and that's why I raise the specter
13 of a potential of an addendum or something else down
14 the road to try and address this kind of issue,
15 because we are in a position of watching these
16 things shift. And if they shift in a fashion that
17 becomes potentially infeasible to treat or even
18 analyze for, that's another issue. We don't know at
19 this juncture, I think we can reach the .1 based on
20 what Andy told us from Montgomery, we can reach .1
21 on carbon tet. So we can find it at least. But
22 .057 on PCE, I don't know.

23 Has Andy gotten back to you on that at
24 all? No. Okay.

25 CUTLER: They don't know.

1 BURIL: I mean, increasing the sensitivity by a
2 factor of 100 on a piece of equipment that's already
3 probably working at its technological limit in many
4 respects, I think we might have some problems.

5 So it becomes a very interesting kind of
6 problem from the standpoint of how do we know we're
7 meeting the health goal, and if that is something
8 that we're going to be demanded to meet, what do we
9 do if we find whatever the detection limit
10 ultimately is? If we've got .1 ppb and as soon as
11 we hit .1 and that's all we can treat to and the
12 systems don't work beyond that point, what do we do
13 then?

14 So those are questions we're thinking
15 about now while we're trying to get the FS to the
16 point where we can show you folks, based on what we
17 know now, what we think we should be doing.

18 RIPPERDA: That's all you can do. You can't
19 wait forever to hit some potential State standard.
20 You have to worry about ARARs. You have to worry
21 about actual drinking water standards. Everybody is
22 going to be under the same -- anybody that's got
23 PCE, TCE, carbon tet. So you certainly aren't
24 alone.

25 ROBLES: On Tuesday I went up to Rancho Cordova

1 to the AeroJet site. I was looking at their biotech
2 systems and their NDMA treatment. And what
3 surprised me is that they are pushing the detection
4 levels. They're trying to push the detection levels
5 to parts per trillion. They're finding they're
6 having problems.

7 BURIL: Could you guys tell them to stop it?

8 ROBLES: The analytical methods to detect to
9 ppt, basically the chemists are saying they cannot
10 be determined because of background interference
11 from outside contamination in the sample.

12 Secondly, they found out that even
13 distilled water has enough in it to create a
14 background noise on the gas chromatograph
15 fingerprinting system. So you can't even tell what
16 chemical is in the sample at ppt. So they have to
17 literally get pure H2O with nothing in it to dilute
18 the sample.

19 Three, if you take a sample and a guy is a
20 smoker, his breath will contaminate. So he has to
21 completely seal the sample, the sample has to be
22 hermetically sealed, the well has to be completely
23 sealed out from outside contamination.

24 There is only one lab to test for, quote,
25 NDMA, as an example. It's in Canada. One guy does

1 it. We use him for analyzing samples from White
2 Sands, New Mexico, because of NDMA. It is not EPA
3 certified. And when the guy goes on leave, that lab
4 shuts down.

5 Two, that lab is totally dedicated to that
6 chemical. When you're talking parts per trillion,
7 the lab cannot test for any other chemical and there
8 is no assurance that the results that you're getting
9 make any sense.

10 What I'm saying is that when we start
11 dropping these levels to parts per trillion, we
12 basically can't detect it. We basically can't
13 ensure a treatment will meet those standards. We
14 basically can't meet them. So we have a
15 technological problem.

16 So I got on the horn and talked to my NASA
17 people and talked to my Department of Justice folks.
18 And basically, PHGs are not ARARs, period. PHGs are
19 not enforceable. What is enforceable is MCLs and
20 drinking water standards.

21 Two, according to Section 113(h) of CERCLA
22 and Section 121, one of the things that CERCLA can
23 waive is if it's technologically unfeasible to meet
24 those standards, we do not have to meet them because
25 there's no treatment system right there. So we have

1 to defer.

2 So I am asking the regulators, and a
3 letter I'm drafting will be forthcoming to you, is I
4 need to negotiate what are the goals, what are the
5 cleanup goals. I can't use the PHGs because they're
6 dropping so fast. And OEHHA and DHS are creating
7 tremendous problems. I cannot be asking for money
8 for something that I can't meet.

9 We have to sit together and negotiate a
10 standard. I am recommending - and I don't want an
11 answer now - I am recommending that we propose a
12 health risk level of cleanup goals based on health
13 risks. Now, if we decide it's MCLs or we decide
14 it's safe drinking water standards or California or
15 Fed or what have you, but something that is site
16 specific. I cannot be going after PHGs that are
17 going into the sub atomic levels. We have to start
18 looking at a proposed action that we have to be able
19 to quantify. Because I cannot say, okay, I'm going
20 to spend X amount of millions and then in the future
21 when these things drop, I'm going to have to add
22 huge percent increments to try to get to that next
23 level. It might not be technologically feasible.

24 We have to start deciding together on what
25 we want as a proposed cleanup goal, a level. Think

1 about it.

2 BURIL: Let me give you an example of one of the
3 things that Pete's talking about.

4 In our tests of reverse osmosis we've had
5 tests that -- taken concentrations that we have
6 here. And we've consistently got them down into,
7 what, Mark, the 6, 8, 10 range, approximately? Ppb?

8 CUTLER: Right. This is just a first pass, a
9 preliminary test. We can get them lower with
10 further work. But this is just to see -- first try.

11 BURIL: Based on what we're seeing right now
12 it's not capable -- it's capable below 18. There's
13 no doubt of that. But it's not capable of anything
14 lower than that without doing more work, either in
15 terms of additional RO or tacking on ion exchange
16 behind it or something of that nature that would
17 generate a nondetect at 4 parts per billion.

18 The reason I raise this is that the
19 perchlorate PHG is currently sitting in the
20 Governor's office, so to speak, and it is on hold
21 for the time being, and it is on hold before it's
22 published at 4 parts per billion. And so if we're
23 dealing with that issue, then certainly the
24 potential for us having a viable system becomes kind
25 of interesting. What do we set as a perchlorate

1 goal here?

2 Now, my understanding is that the 18 is an
3 interim action level and could be considered a PHG
4 per se. Are we going to treat to that, or do we not
5 treat to that? Because there is no MCL, as we all
6 know, for perchlorate. So then we are forced into
7 the situation of dealing with a site-specific kind
8 of resolution. And I think that's where Peter is
9 aiming at right now, is what are we going to do and
10 how do we generate that kind of information, given
11 what we know with regard to California law as
12 opposed to MCLs and whatever else?

13 GEBERT: I'm a little unclear on what these
14 proposed PHGs are for. If they're not going to be
15 enforceable, what do they really mean? I mean, who
16 are they targeted at?

17 BURIL: They're actually imposed on the water
18 purveyors, as I understand it.

19 ROBLES: That's where it's become. We've tried
20 to address the purveyors of water concerns, because
21 as a good neighbor, we cannot be treating something
22 and then it doesn't help them to meet what they need
23 to do. But if we're getting to these levels where
24 it's technologically unfeasible, we've got an
25 impassable hurdle right here. They're going to get

1 water that they can't even use because it's not
2 meeting the PHGs and we can't technologically meet
3 it and it's not enforceable, and now I have a real
4 problem how to program dollars to get technology to
5 be able to meet these.

6 I have to set up a standard and I have to
7 have an agreement among us. So that's why I'm going
8 to propose a letter. I'm drafting a letter to ask
9 the regulators let's sit down and negotiate a
10 cleanup standard that is risk based for this site.
11 That's the key.

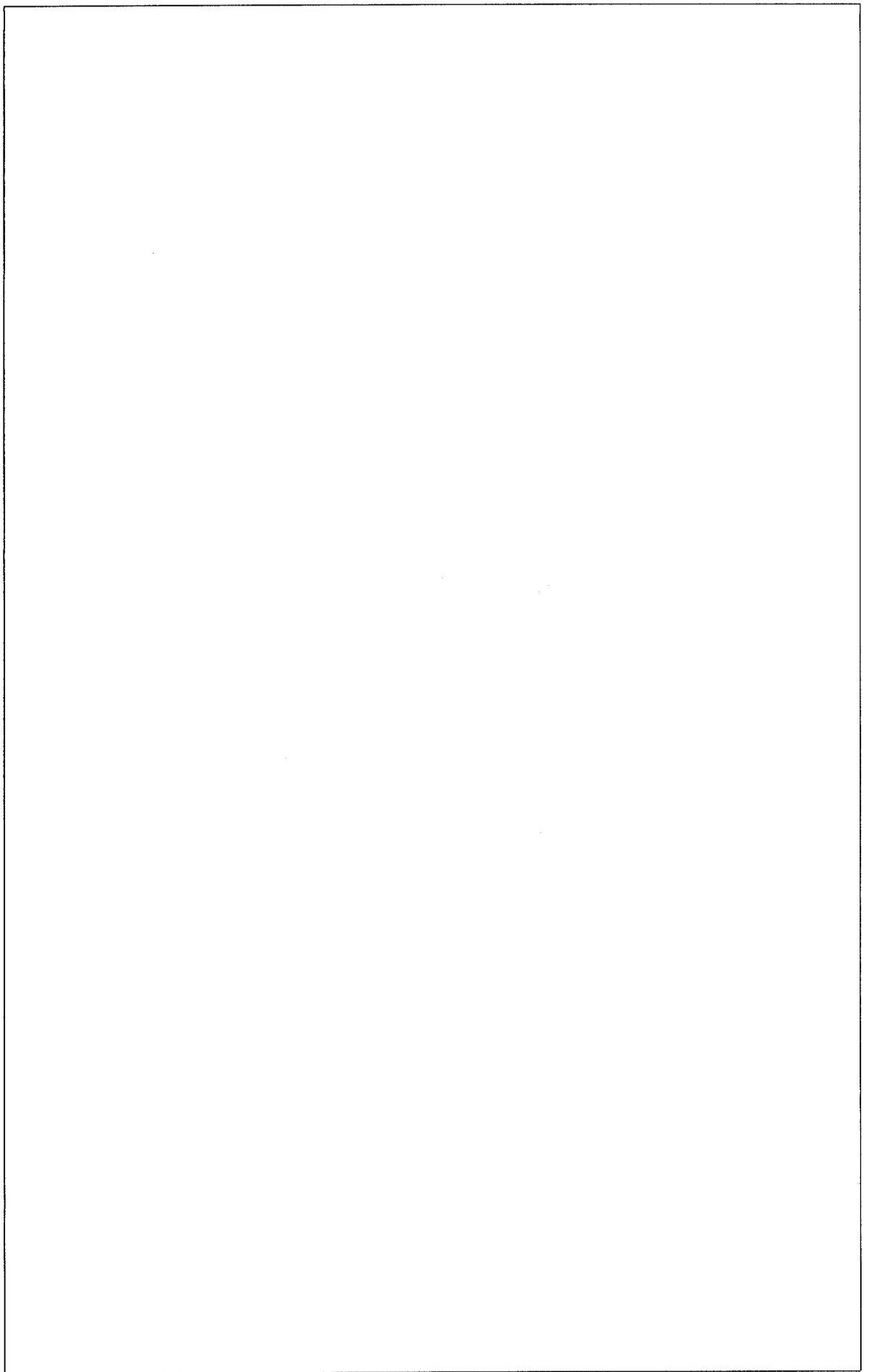
12 BURIL: Let me share with you, Richard, the
13 thing I think that the water purveyors would find
14 very, very loathsome in dealing with things like
15 PHGs. And, Richard, if I misspeak, correct me,
16 please.

17 The way I understand the drinking water
18 law is that if a water purveyor is providing water
19 to its customers, which does not meet a PHG, they
20 are required by Department of Health to notify their
21 customers that they are not meeting a public health
22 goal, and as such they can basically put them on
23 notice that, hey, the water that you're drinking
24 doesn't meet the standard. And even though it's not
25 a, quote-unquote, enforceable standard, I would

1 hazard a guess that just about any water purveyor
2 would be scared to death to do that, particularly
3 since we live in such a litigious society. They
4 could probably expect lawyers lining up at the door
5 very rapidly waiting to file suit on behalf of who
6 knows who that's been exposed to water that doesn't
7 meet a public health goal, irrespective of the fact
8 that it's not an enforceable standard. So as such,
9 it becomes a de facto enforceable standard from the
10 standpoint of what you might ultimately do with the
11 water.

12 Now, we avoid that by simply not giving
13 the water to the public. And that's fine for as far
14 as it goes. But given the fact that we've got an
15 aquifer here that is a very vital supply of water to
16 the area population, I don't know that we would find
17 a great deal of acceptance of a feasibility approach
18 that does not meet these public health goals.

19 ATWATER: The only thing I'd add to that -- this
20 is the problem. The public health goals under the
21 State Safe Drinking Water Act aren't enforceable.
22 But the Legislature when they adopted it requested
23 that they come up with these goals, and that's what
24 they are. Unfortunately, oh, for about the last
25 eight, nine, ten years in California and then in the



1 '96 Federal Safe Drinking Water Act you have to go
2 out with a consumer notice. In your bill insert
3 every year you put out all of these parameters and
4 you put the state and federal drinking water
5 standards and then you also put these public health
6 goals because it's certainly the right of the public
7 to know.

8 And that's the perception problem. How do
9 you explain to somebody, John Q. Public, that you've
10 got a public health goal, perchlorate as an example.
11 You say, well, there's no federal standard. There's
12 an interim action level of 18 parts per billion, and
13 now we have maybe a health goal of 4 and if we're
14 operating this operable unit in hypothetically like
15 the existing -- well, use the Arroyo Well, if
16 Pasadena had that at 4 parts per billion with
17 treatment, then they'd have to tell everybody in
18 Pasadena that it's at -- you know, it may exceed the
19 public health goal. And so then you have this
20 community kind of explanation, well, yeah, it's well
21 below the interim action, you know, how do you
22 explain it exceeds a health goal?

23 BURIL: And I think that's the crux of our
24 concerns right now, even though we haven't got
25 anything that locks us in on these public health

1 goals. The idea of a State acceptance -- and
2 unfortunately, Alex isn't here to be able to talk to
3 us with regard to how the Regional Board might view
4 these things in their dealings with DHS.

5 And then the issue of community
6 acceptance, not only the water purveyors, but I
7 could anticipate that folks like the general public
8 may have very large concerns about a system that may
9 not meet these health goals.

10 ROBLES: That already has precluded one option
11 that we were thinking about. With these PHGs, I
12 can't, in my mind, conceive of giving the water
13 purveyors water that we treat because I might just
14 be inviting litigation in the future. So that's
15 out.

16 So I'm going to have to put it back in
17 somehow. And that's where my concern comes in, is
18 these PHGs, though they're not enforceable, are
19 creating a problem in how we're going to figure out
20 the remedial action that's going to be in the
21 future. And if I have to take the stand, and as my
22 lawyers have told me, that they are not enforceable
23 and that according to Section 113(h) and Section
24 121, that it is the federal government that makes
25 the final decision on what is an ARAR and what we

1 can clean up to technologically feasible, I'm stuck.
2 And if there is no technology to get to those levels
3 and that's what you, the regulators, want us to
4 clean up to, particularly the State, I might just
5 say, well, pack up and just wait until the
6 technology catches up. That's unconscionable. The
7 public will not stand for it. We have to do
8 something.

9 So that's why I am proposing that you
10 start thinking about this. We need to set up
11 cleanup goals that are risk based that have some
12 semblance of reality. And it could be the MCLs. It
13 could be the safe drinking. It could be something
14 else. But let's sit down and look at that and talk
15 about what it costs to risk reduction and what can
16 we get to make sure we have a viable remedial action
17 that will allow us to be able to start cleaning up
18 this area.

19 BURIL: I think one of the keys that's important
20 to remember is that when we look at the feasibility
21 study for OUs 1 and 3 you're going to see that we've
22 looked at the feasibility of capturing a plume,
23 treating it and disposing of it. We haven't gone
24 into actual design kind of parameters, you know,
25 you'll use this public well or you'll build your own

1 well or that kind of evaluation. We put that off as
2 being more of a design issue as opposed to a
3 feasibility issue.

4 But with these things hanging over us
5 right now, like I've said before, the feasibility of
6 actually treating to these lower levels, if we are
7 in a position of being forced to do that, becomes a
8 very large concern.

9 And so I think one of the things that we
10 need to begin thinking about very strongly is what,
11 as Pete said, what levels do we actually treat to,
12 and at what juncture do we actually say stop, you
13 can't do any more.

14 RIPPERDA: I guess I don't quite see all the
15 handwriting that goes -- that you're putting into
16 this. This is no different -- you follow the
17 process. You're about to come out with a
18 feasibility study. The feasibility study always
19 does exactly what you're saying. It establishes
20 clean-up goals. You look at acceptable risk, 10 to
21 the minus 6 for cancer, 1 for hazard quotient. You
22 compare that to ARARs. And, of course, we all know
23 PHGs are not ARARs. And based on those, you have a
24 cleanup goal. So you're doing this anyway. You
25 probably already have it all in your FS. So like,

1 yeah, go ahead and send the letter out to get a
2 month or two head start on your FS. But this is
3 nothing new.

4 ROBLES: Well, the thing is, I'm saying that the
5 State is going to have a real problem, particularly
6 the Water Board, in stating the proposed feasibility
7 or proposed levels, if they don't meet PHGs, because
8 already Carlos and his supervisor have looked at
9 PHGs, is what they want to shoot for.

10 Well, that was nice when it was up there.
11 But when we're getting to parts per trillion, first
12 of all, sampling that is impossible. Treating to
13 that, I don't know if it's technologically feasible.
14 And now it becomes a problem if that's what they're
15 going to push for. Then we're going to have a
16 dispute resolution issue.

17 RIPPERDA: Don't be afraid of dispute
18 resolution.

19 ROBLES: No. I'm not afraid of it. I'm just
20 saying it's the facts.

21 BURIL: I guess one of the things I look to in
22 my own devil's advocate look at the future is that
23 if we were to establish goals that somehow did not
24 take into account the issues of PHGs that a water
25 purveyor in the immediate area would ultimately have

1 to deal with, in spite of the ramifications of
2 whether its enforceable or not, it becomes a
3 community relations nightmare. And from that
4 perspective, speaking from my own lay person legal
5 viewpoint, the opportunity for litigation begins to
6 blossom either against the regulatory agencies,
7 NASA, or whomever.

8 And so trying to understand how we might
9 deal with that up front to avoid it and avoid
10 dispute is something that I'd like to at least
11 broach in terms of how we might approach it.

12 Because, Mark, you're absolutely correct.
13 They aren't ARARs. We don't have to meet them. But
14 in the court of public opinion and the court of
15 whatever we get into, should this go to the worst
16 possible alternative, we could be faced with some
17 very difficult answers as to why we didn't think of
18 it to begin with.

19 ROBLES: It's very sensitive for us because
20 we're always viewed that we cannot work in
21 isolation. I could take the attitude of a superior
22 federal employee and say, "Hey, it's my site.
23 Tough."

24 You can't do that, because we have people,
25 our neighbors, purveyors, you regulators, we all

1 have to stand together. That's why I've been very
2 leery of using that. But with these PHGs dropping
3 as they are, it's become a real concern.

4 So I want you to start thinking about what
5 kind of -- if our proposals are not acceptable in
6 our FS, we got to negotiate. So start thinking
7 about what it is. If it's not acceptable, our FS
8 feasibility studies and our proposed cleanup goals
9 can't go through your organization with approval,
10 then what are we going to go to?

11 BURIL: It's really unfortunate Alex isn't here,
12 because I think he's probably one of the more
13 principal players in this whole issue. It's really
14 unfortunate.

15 Richard, as another State agency, what do
16 you see from the standpoint of your perspective?

17 GEBERT: I don't want to speak for DTSC, but for
18 me personally, these numbers are not realistic. I
19 don't see DTSC changing its policy on either MCLs or
20 going risk based. I don't see how we're going to --
21 in my opinion, this would shut down most of the
22 treatment systems in the state. And I don't see
23 that benefiting --

24 BURIL: Amen.

25 GEBERT: I don't see that as benefiting anybody.

1 Our goal is to --

2 BURIL: Oh, you're right. You're absolutely
3 right.

4 GEBERT: -- clean the water to the best of the
5 technological procedures that we have. I don't see
6 this as changing our position.

7 But like you said, the Water Board, that's
8 another --

9 BURIL: That's another issue.

10 GEBERT: -- another issue, which --

11 BURIL: In fact, one of the reasons that the
12 perchlorate PHG had been put in the Governor's
13 office and held is for exactly that reason. My
14 grapevine contingency tells me that there was a
15 rather high-powered group of people who went to the
16 Governor's office and said, "Hey, do you have any
17 idea what you are doing?" And they agreed to put it
18 on hold for a period of time.

19 GEBERT: Isn't there any public review of these
20 at all?

21 ZUROMSKI: It's tomorrow. Tomorrow is the first
22 public meeting on the PHGs.

23 ROBLES: Richard is going to be there.

24 ZUROMSKI: I'm going to go up there. Flying up
25 there tomorrow morning.

1 ATWATER: What kind of a public meeting will it
2 be?

3 ZUROMSKI: It's supposed to be a public meeting
4 to discuss -- I think there's four or five different
5 chemicals, three of them which we're looking at.
6 One that Chuck didn't include on here is vinyl
7 chloride, which is a byproduct that we might be
8 looking at in the future.

9 ROBLES: That's 43?

10 ZUROMSKI: Yes, 43 parts per trillion vinyl
11 chloride. But basically there's five or six draft
12 documents that they put out for public and
13 scientific review. And they're going to discuss --
14 they're going basically -- going to be their first
15 public availability session tomorrow.

16 ATWATER: Who is hosting it?

17 ZUROMSKI: It's OEHHA. It's up in Oakland.

18 GEBERT: Yeah, I say I don't really know where
19 they're coming from. My experience, the only
20 chemicals that they have the technology to get to
21 parts per trillion or parts per quadrillion level is
22 dioxins. Other than that --

23 BURIL: I was painfully involved in that back in
24 the '80s.

25 ZUROMSKI: After reading the reports, the PHGs

1 do not -- and they state in there OEHHA does not
2 take into account at all cost or technical
3 practicability when they look at the PHG. It's only
4 based on health risk.

5 And at least for vinyl chloride the reason
6 that they're lowering it is because now they're
7 adding the inhalation hazard from the volatility of
8 vinyl chloride and water to the old -- they're
9 basically taking into account both the effects, the
10 oral dose and the inhalation effects.

11 And I'm not sure about the other two,
12 because the carbon tet study that was done in 1942
13 supposedly was the study that was -- the old MCL was
14 based on. But now they've come up with some new
15 data. I'm not a toxicologist, so I'm trying to read
16 all this and it's going -- sending me crazy. But
17 it -- somehow they've come up with some new
18 information out of this old study that is
19 recommending them to lower their PHG. So that's why
20 I'm going up, to find out basically why, what's
21 driving that.

22 BURIL: That's where we're at as far as PHGs and
23 so forth. I think we probably hammered this about
24 as much as we can. Mark is perfectly correct in
25 pointing out that it's not an ARAR. You do need to

1 move forward. But I think we all have to take a
2 hard look at what this might ultimately mean in the
3 future.

4 RIPPERDA: Of course you do; public education
5 and everything else. But you're not alone. There's
6 hundreds or thousands of wells that have these
7 chemicals. Everybody is going to have to be doing
8 the same thing. So you don't throw up your hands
9 and run around screaming because this is happening.
10 You just move forward with MCLs and State drinking
11 water standards. You're aware of PHGs. And if
12 there's not too much incremental cost in achieving
13 it, you go for it. But otherwise, you don't.

14 I agree with you. It certainly decreases
15 your happiness in pumping water out, treating it and
16 giving it directly to a purveyor, although if you
17 inject it, you're still not getting out of that loop
18 because it's still going to go to a purveyor and
19 it's still going to be contaminated by you, which
20 ultimately you're just as much on the hook.

21 BURIL: Which, again, we run into the problem
22 which the State has pointed out, that if we have,
23 quote-unquote, detectable quantities of
24 non-naturally occurring materials, then we run into
25 this Porter-Cologne thing. I know that we've done

1 some research on it and I know Mark and his folks
2 have done some research on it.

3 Let me share with you what we've found so
4 far, and I think Mark's research might back this up.

5 One, when we talk about reinjection as
6 opposed to giving it to a water purveyor, the idea
7 of injecting it or not being allowed to inject as
8 opposed to re-infiltrate as a waste doesn't appear
9 to hold water. Bad pun. It's not something that
10 appears to be an ARAR.

11 So from the standpoint of being able to
12 inject as opposed to just re-infiltrate, I think we
13 are probably in better shape than what we thought we
14 might have been a month ago or so.

15 However, when we talk to the idea of
16 degradation of the groundwater, there is a potential
17 concern there. On the surface it doesn't look like
18 there's any problem as long as we've cleaned it up
19 and we're actually putting water that's cleaner back
20 in the ground than what came out. We're not
21 degrading the source. That makes sense.

22 However, I would anticipate that even if
23 we were able to overcome the reinjection issue, when
24 we talk about things like these PHGs and how DHS and
25 the Regional Board would work together and

1 collaborate to decide whether or not we would be
2 able to do that, I think then we may be faced with
3 the situation where a water purveyor isn't going to
4 want it because it doesn't make PHGs, and the
5 Regional Board and its attempt to work with DHS and
6 so forth may not allow us to reinject it.

7 So from that perspective, then we have got
8 our hands tied. Again, it's unfortunate Alex isn't
9 here to at least take that back. You can see how,
10 even at the beginning, when you start talking about
11 MCLs and so forth, we've got this dilemma that may
12 come out in six, eight months or so, depending upon
13 how long these things take to come out, if, indeed,
14 they do come out. We may be jumping at shadows.
15 But regardless, I've never seen a PHG that didn't
16 ultimately get published. So from that perspective,
17 we could be in the midst of construction and find
18 out what we're constructing isn't going to work.

19 So anyway, that's the end of that layer of
20 concern. Certainly we want to move forward, but I
21 would hate to see us end up in a regulatory
22 interpretation battle that basically holds the whole
23 project at bay.

24 RIPPERDA: Certainly you won't be in that after
25 construction. All this is going to happen through

1 the FS and ROD, where you haven't yet committed
2 money. You're never really going to get a final
3 decision from the regulators until you have the ROD.

4 So it's like yeah, send the letter now and
5 send it in terms of what you propose to do. Don't
6 ask us what we think. That's too open-ended. And
7 it's not what Alex and Richard and I think. It's
8 what our management thinks. So you probably should
9 send it to a management position and have it, then,
10 get circulated down to us for a response. But it
11 should go through our managers so that they're
12 involved in the decision.

13 ROBLES: The recommendation that has happened,
14 Mark, is the fact that we have been advised not to
15 propose. We have got to ask you guys to make a
16 decision. And I know that that may sound -- I know
17 it's tough because you guys have a hard time making
18 a decision. It's historical, because as regulators
19 you don't want to make a decision. You want to
20 follow what the law says. It saves your butts. But
21 my lawyers are telling me don't propose; ask,
22 negotiate, because the key is if you propose, it's
23 like a negotiating tool.

24 RIPPERDA: That's like so typical. Like, you
25 know, negotiation class. I'm sure you've all had a

1 negotiation class. Always make the other guy -- so
2 fine, your lawyer tells you ask, don't propose. My
3 lawyer tells me ask, don't propose. So, okay.
4 Well, do we care less than you? This goes on. So
5 we'll just wait you out.

6 ROBLES: That's true.

7 RIPPERDA: So to speed the process up, I am
8 advising you, just like your lawyers are advising
9 you, decide what you want to do and propose that
10 rather than asking us what we want. Because, of
11 course, if you ask us what we want, we're going to
12 say, "Oh, well, gee, PHGs are nice and safe, why
13 don't you stick with PHGs." So I just made that.
14 That's now my proposal. So now you can respond to
15 it.

16 ROBLES: Good point.

17 BURIL: Yes. You have an excellent point.

18 ROBLES: Good point. We'll think about that and
19 see what we can come up with.

20 RIPPERDA: Certainly in the FS you have to make
21 a proposal. You have to say what you want to do.
22 Since the FS is now one to two months away, this
23 letter is only leading it by one to two months, you
24 might as well put in the letter what you imagine
25 you're going to put in the FS.

1 ROBLES: That's a good idea to send it to the
2 senior people.

3 RIPPERDA: Don't send it to my regional
4 administrator. Send it to like my branch chief.

5 ROBLES: Well, I'm going to call you guys to ask
6 who to send it to. I'm going to just send it to the
7 top. I know how that works. It gets lost in
8 the --

9 RIPPERDA: I know you're nervous about PHGs. We
10 have MCLGs that are currently zero for a number of
11 contaminants. There's goals out there at the State
12 and Federal level that are zero. So there's plenty
13 of systems around that don't meet zero. So I'm just
14 saying don't get too hung up on goals.

15 BURIL: All right.

16 ROBLES: Good.

17 BURIL: Okay. Let's see. Have we covered 3 and
18 4, then, now?

19 RIPPERDA: I actually had a bunch of --

20 BURIL: Have you a bunch of questions?

21 RIPPERDA: -- little questions.

22 BURIL: Okay. Go ahead.

23 RIPPERDA: On the OU-1/3 groundwater FS. This
24 all comes from reading the most recent groundwater
25 monitoring report. These are mostly -- these are

1 all small picture stuff, not big picture stuff. So
2 I can either just --

3 BURIL: We've got time.

4 RIPPERDA: These are the kinds of things that
5 I'm going to be asking myself when I read the
6 feasibility study. I don't know how close you are
7 to having it done. But these are a few of the
8 things I might be submitting as comments once I get
9 it, so you might as well know some of them now.

10 CUTLER: Be prepared.

11 BURIL: Great.

12 RIPPERDA: As I'm looking at the groundwater
13 monitoring report, looking at groundwater
14 elevations, it's long been a slight bone of
15 contention between the water purveyors and you about
16 groundwater reversals. I know that my old
17 contractor, Stephen Niou, had a real concern about
18 groundwater reversals. There's a lot of different
19 parts of data that you guys supplied to make your
20 point.

21 But one of my questions is why or how
22 during both the dry season and the wet season,
23 looking at a May-June and an October-November
24 sampling event, is there a groundwater gradient from
25 the east to the west over at least half of the JPL

1 facility. Like at various north-south
2 cross-sections you see a sizable reverse gradient.
3 I suppose the regional gradient is this way between
4 MW-4 and 23, between MW-8 and 13, and as you get
5 farther north and you get close to the fault it's
6 still there, but it's less worth thinking about. I
7 can certainly see, oh, there must be a small
8 groundwater reversal due to the spreading basins,
9 but why am I seeing it during both dry and wet
10 seasons?

11 BURIL: What date are you looking at there?

12 RIPPERDA: This one here is May 13.

13 BURIL: '99?

14 RIPPERDA: '99.

15 CUTLER: There's always, as I thought we
16 described it pretty well in the RI, a large mound
17 right at the mouth of the Arroyo.

18 RIPPERDA: Uh-huh.

19 CUTLER: There's always a mound.

20 RIPPERDA: Yeah. There's always this --

21 CUTLER: So there's a certain portion of the
22 site that's always reversal.

23 RIPPERDA: That's always influenced by that.

24 CUTLER: Well, it's really normal.

25 RIPPERDA: So it's not a reversal, it's just

1 that the mound --

2 CUTLER: According to regional trends, I guess
3 you can call it a flow to the west rather than
4 easterly. But that's always there.

5 RIPPERDA: Okay.

6 CUTLER: And that mound during different parts
7 of the year just seems to be larger, so that area of
8 reversal is larger. And that's related to, of
9 course, seasonal runoff.

10 They shut the pumps off at the Pasadena
11 wells typically a month every year. And that's
12 typically when you see the reversal. They're not
13 pulling out 6,000 gallons a minute or whatever right
14 near the site. All that water tends to pond much
15 more easily and create a larger reversal.

16 RIPPERDA: So kind of along those lines, I know
17 some of this is in the RI, but most recently I was
18 only looking at the monitoring reports, not going
19 back.

20 CUTLER: Right.

21 RIPPERDA: So this is just stuff that you should
22 maybe reiterate in the FS or like think about.

23 CUTLER: Okay.

24 RIPPERDA: It might help put that in
25 perspective, how strong is the groundwater high,

1 like right at the mouth of the Arroyo on a regional
2 basis?

3 What are water levels, from whatever
4 source you might have, whether it be something in a
5 USGS report?

6 What are the regional groundwater
7 gradients starting up here and coming through the
8 system?

9 I see a two- to three-foot east to west
10 between MW-4 and MW-23. Is that significant or not
11 on a regional basis? Is that two feet enough to
12 ever push it back towards Valley Water? And like
13 looking at all the data that you supplied, that's
14 just not answered.

15 I don't know what the heads are at Valley
16 or anywhere upgradient from Valley. I know you
17 haven't taken measurements, but are there any kind
18 of regional reports that show at any period in time
19 what were the heads here and what were the heads
20 somewhere out here? You know, if it's only three
21 feet higher here, then we say, well, this two foot
22 is like close to the regional gradient and I can see
23 a natural reversal happening that far. If it's 10
24 feet higher up here, 20 feet higher up here, then,
25 oh, this two-foot difference is just this local

1 little effect from the Arroyo and it's
2 insignificant.

3 CUTLER: Right. There are some historical data
4 in the report of the referee. There is not any
5 site-specific data on that. They really jump from
6 Valley wells to Pasadena wells. And there are
7 periods of time that appears very similar depth or
8 elevations in groundwater. And it's speculative
9 what's going on in between. Depending on how you're
10 looking at it, there's different interpretations on
11 it.

12 RIPPERDA: So there's no -- I know that report
13 is quite old. Since then there has been no attempt
14 to take groundwater level measurements by anybody
15 anywhere starting at Valley?

16 ATWATER: The water master every spring and
17 every fall, Chris Nagler that has offered to provide
18 all that data, is we take measurements twice a year,
19 spring and fall, of all the production wells. And
20 you can look at that data.

21 CUTLER: And we have that data and we created
22 maps with that data. In fact, there was a comment
23 from the Raymond Basin Management Board on that
24 issue. And we've generated some maps. I don't know
25 if those responses ever went out.

1 BURIL: No. We're still working on that.

2 CUTLER: Didn't the data that Chris gave us --
3 because then we can use their data from the
4 production wells and our data for the site and
5 basically do just what you're asking. We've done
6 that. Chris sent us three dates. I think there was
7 one in '97, '98, and '99, I believe.

8 ATWATER: Yeah. They also --

9 CUTLER: Part of it, if you look at it when you
10 contour them, they're supposed to shut the wells off
11 24 hours before the time. But if you look at the
12 city wells, and some of them are still 20 feet below
13 the well right next to them, so some of the data is
14 suspect, or you have to assume that it hasn't fully
15 recovered.

16 RIPPERDA: Right.

17 CUTLER: So there is still a bit of
18 interpretation in some areas, if I recall the maps.
19 I haven't looked at them for several years.

20 BURIL: Basically, with those three dates, it
21 showed that the flow was still trending on a
22 regional basis from west to east.

23 RIPPERDA: Right.

24 ATWATER: No, that's not the problem. I beg to
25 differ. Both Nagler and I -- Nagler had been doing

1 these water well measurements. If you take, for
2 example, in the early '80s, when we first -- '80,
3 '81, when we first had AB 1803 and the PCE,
4 et cetera, all those Pasadena wells were shut off
5 and the Lincoln wells were shut off. And at that
6 time both Valley and Lincoln were pumping. It seems
7 very reasonable, and if you look at the data at that
8 time, that you would have had a westerly pumping,
9 just like historically the report of the referee
10 shows them.

11 BURIL: Well, I'm not going to get into the
12 debate about that right now with you, Richard.
13 We've done that.

14 ATWATER: The statement that you said now is not
15 true because the early '80s --

16 BURIL: For the three dates that we have
17 evaluated from the data that was supplied to us, it
18 was to the east.

19 ATWATER: That's '96, '97, '98. I'm talking
20 about we got 40 years of water level measurements.

21 BURIL: Well, again, going back to the same
22 point, those informations are not germane to the
23 development of the RI.

24 CUTLER: But what we did do, Richard, too, is
25 right before the city turned their wells on for the

1 first time after having been off for two to four
2 years, we had transducers in the ground and we were
3 taking water level measurements. We wanted to see
4 what are these wells going to do to the site. We
5 had static conditions for years. And those water
6 level measurements, Valley was pumping at that time,
7 still show flow to the east.

8 BURIL: Right.

9 CUTLER: Across the site. So we do have that
10 data, exactly what you're talking about.

11 RIPPERDA: So like he has data. You have the
12 data. But none of the regulators -- like I'm
13 actually -- I've got a contractor and because I am
14 like in the dark here, I'm going to pay her money to
15 get all that data and make her own version of the
16 maps for me to see.

17 But I would love to see at least some of
18 that in the FS, your version of it and then, you
19 know, we agree or disagree, we can talk about it.
20 But at least have something -- that information is
21 available and it should be in the FS.

22 BURIL: We can look at that, sure.

23 RIPPERDA: If you have caveats about wells right
24 next to each other and 20-foot differences in head,
25 like yeah, there's some data problems there.

1 CUTLER: You just got to keep that in mind.

2 RIPPERDA: Keep that in mind. Okay.

3 So there's a whole bunch of regional stuff
4 that you don't have to write a thesis on regional
5 water flow.

6 BURIL: Thank you.

7 RIPPERDA: But how many millions of gallons of
8 water are estimated by the water master to flow
9 through the system and out of the basin? How much
10 is taken out by the water purveyors? Like just some
11 of this is just a couple sentences here and there or
12 a paragraph or two. But how is regional water flow
13 influenced by pumping? How reasonable is it to
14 suspect a reversal from here to there? And you make
15 many arguments against the reversal like, oh, you
16 don't see carbon tet over here, but there's a
17 possibility for why that could or couldn't be.

18 ROBLES: Show the data.

19 RIPPERDA: Yeah. Show the data.

20 CUTLER: And there again, I would say the RI has
21 a ton of that where we've done maps when no
22 purveyors are pumping, when only the City's pumping,
23 when only Lincoln's pumping.

24 RIPPERDA: Right.

25 CUTLER: We've tried to really characterize the

1 effects of --

2 RIPPERDA: You have done a lot of that. And in
3 the FS, you know, just briefly summarize. You don't
4 have to re-show all that data.

5 CUTLER: We did. We brought a lot of it in.

6 BURIL: There is a lot of that there.

7 RIPPERDA: But there is a little bit that you
8 haven't given us. Just kind of summarize it.
9 Reference back to the RI figures. I don't want to
10 see a billion figures in the FS, but if there's
11 figures in the RI that directly address some of
12 this -- you know, the feasibility study is supposed
13 to basically summarize it and present your thinking
14 of what's going on.

15 CUTLER: That's what we've done. And hopefully
16 it meets the --

17 ATWATER: The only question I'd ask about that,
18 when you say "summarize all the data," it's for only
19 a four-year period, though.

20 RIPPERDA: And --

21 ATWATER: And I just pose the question, given
22 the history, and I just used the early '80s as an
23 example, if historically there are times when we see
24 historic water level measurements in the water
25 master reports where you can say, hey, it certainly

1 looks reasonable that there was flow westerly, isn't
2 that going -- isn't that enough evidence that
3 historically you may have had carbon tet. And we do
4 have hits of carbon tet at Valley wells every once
5 in a while. They're low. And that data is there
6 and historically it's happened. Isn't that --

7 BURIL: I would like you to supply that data to
8 us, Richard, because I've looked at it going all
9 the way back to 1980. I've seen no carbon tet.

10 ATWATER: The Valley data. Just call up Valley
11 and get the data. I've looked at it and --

12 BURIL: I have done that and I've looked at it
13 and I have not seen carbon tet. So I very much
14 appreciate you sharing that with us. Because I
15 haven't seen it.

16 ATWATER: Pull all the DHS records and all that.
17 It's all there.

18 BURIL: That's what we've done. Anyway --

19 RIPPERDA: I'm sitting here, I comparing two
20 different stories. So Phebe and I have to talk.
21 But I'm going to pay her money and she'll be calling
22 you.

23 ATWATER: Sure.

24 RIPPERDA: If she finds stuff in their records
25 that like does show carbon tet in the past or does

1 show from the late '80s or some apparently major
2 groundwater reversals on a regional basis, I'll then
3 be telling you your feasibility study sucks and like
4 include this.

5 And so that's just some stuff I'm going to
6 be looking for. That's what I wanted you to know
7 that I'm going to be looking for it.

8 BURIL: That's fine.

9 ROBLES: Okay.

10 RIPPERDA: And you can do what you want.

11 Let's see. We've got perchlorate. This
12 is kind of the same issue, but a different set of
13 data. We've got perchlorate in these Valley Water
14 Company wells at 6, 7, 8.

15 Are there any other wells farther
16 upgradient that have perchlorate data, whether it be
17 nondetect or 4 or 6, 7, 8?

18 BURIL: Good question. Don't know.

19 RIPPERDA: That's just something else that would
20 also help.

21 BURIL: Is La Canada Irrigation District running
22 their well now, Richard, do you know?

23 ATWATER: Uh-huh.

24 BURIL: Okay.

25 RIPPERDA: So now totally different. On the

1 Stiff diagrams, this is just a style kind of thing,
2 I looked at differences in water types between dry
3 and wet season. And there's some minor shifts,
4 nothing that like really was major.

5 But it would have been a lot easier for me
6 if these things, you know, just -- you've got the
7 water types shown in these and you show, you know,
8 casing and screens, you know, on the whole well
9 bore. It's really hard in looking at this to have
10 your eye track what's in these little tiny diagrams
11 when you also have a lot of textures in this whole
12 well thing. So I might get rid of or ask that you
13 get rid of all the text that -- of course we know
14 that's a well. You don't need to stipple it in the
15 same pattern that you've stippled the diagrams. And
16 maybe in the screened interval put the correct
17 pattern for whatever that water type is, so that
18 you've got a well here drawn. Leave that whole part
19 blank and instead of cross-hatching the screened
20 interval, put in the water type pattern. It will
21 make it much easier to just scan across and see what
22 the water types are without having these competing
23 patterns that don't have anything to do with water
24 type.

25 And my second request about this would be

1 instead of numerically numbering them across the
2 page, do it a little more like a fence diagram.
3 Don't try to do correlation between wells, but at
4 least put them east to west so you can see, you
5 know, physically what's happening east to west
6 across the site. And that may mean that you have to
7 do, instead of, you know, two pages of it, you know,
8 maybe three and kind of the northern one, the center
9 one and the southern one or something like that.
10 And maybe MW-21 or something else is completely off
11 so you just kind of throw it off to the side and
12 show that kind of not correlatable but, you know,
13 that would just make it easier to look at water
14 types with depth and geographic location.

15 CUTLER: Okay. We tried to do that with plan
16 view maps where we had water types with layers and
17 different colors. So we tried to do what you're
18 asking and we can also do that as well. But that
19 was the intent of --

20 RIPPERDA: Right. I was trying to do it and I
21 was trying to draw on a map, like put in water types
22 at layers. And I just then looked at my map that I
23 just like finished drawing and it's like, you know,
24 multiple layers, all these other things in there, I
25 couldn't get a sense of it. So I took one of these

1 and kind of tried to like -- but it would be real
2 easy, because your depth and layers are already on
3 here with where the screen is. So it would actually
4 kind of jump out at you what water type is where, I
5 think. And --

6 CUTLER: What we could do is maybe in the
7 quarterly reports add those maps. It's already
8 done, what you tried to do with layer, water type by
9 layer. That might be more helpful to you. And
10 cross-sections.

11 RIPPERDA: Certainly. I think it's much easier
12 to look at this in one glance than to -- it's like
13 it actually takes me a little while to look at the
14 contaminants on a map. And that's a little more
15 straightforward because there's an actual plume and
16 I can very quickly pick up and what the carbon tet
17 plume is doing with depth. The water type is a
18 little more mixed and free form, so I don't know --
19 you know, it's --

20 CUTLER: Okay.

21 RIPPERDA: Anyway.

22 Some of this is from the RI. Looking at
23 the pressures, the head diagrams versus depth. You
24 did have some stuff explaining, you know, this in
25 the RI. And maybe if I went back and reread it,

1 some of my questions would be answered. I was just
2 wondering if, you know, when the heads all stack up
3 one on top of each other, there's no pumping effect.
4 When there's a large spread, you know, it means that
5 you've got some kind of confining layer or something
6 which could be due to pumping, could be due to stuff
7 coming through the thrust fault. Various things.

8 So I was wondering about comparing -- and
9 I think you did this in the RI and I just have to go
10 back and look at it. So you can tell me that,
11 "Mark, look at the RI." But how does the Pasadena
12 wells going on or off affect how these things stack
13 up?

14 CUTLER: Yeah. There are cross-sections in a
15 sense, graphs with time of those very things. When
16 the Pasadena wells go off, all the lower screens,
17 the hydraulic heads bounce up to basically the upper
18 screen. When they turn the pumps on, you get those
19 separations. So that's pretty much -- with the
20 quarterly reports, our intention was just a data
21 dump. Here is the data, here's the results, here's
22 the data, not so much a real analysis. We could
23 do --

24 RIPPERDA: These things versus time are in the
25 RI? I forgot.

1 BURIL: Yes.

2 CUTLER: You'll see all the different screens
3 spread out for the time, say for a particular well.
4 They turn the pumps off, keep the pumping schedules
5 up above it and you'll see the lower screens bounce
6 up and everything end up on one point. When they
7 turn the pumps back on, you can see up above when
8 they turned the pump on and then hydraulic heads
9 draw down.

10 RIPPERDA: Is that pretty much true for all the
11 wells?

12 CUTLER: Except things like Well 21, which is so
13 far away from the city wells. It's pretty much all
14 the screens are about the same hydraulic head all
15 the time.

16 RIPPERDA: Right. Like during this monitoring
17 event I was wondering why on 21, which is so far
18 away from pumping, why screen 2 is so far off. It's
19 this point right there. That's screen 2 and it's --

20 CUTLER: Oh, okay. That was an error. We found
21 that on the actual maps. But we must not have
22 corrected it on that table. We saw that, too. That
23 popped out on us. We went back to all the field
24 records and everything. And it was an error. So
25 that one snuck by. We corrected it on the maps.

1 BURIL: Okay, Mark, two demerits.

2 CUTLER: Well, there's -- okay.

3 RIPPERDA: So even wells that are fairly far
4 away, like MW-24 is pretty far away from the pumping
5 wells.

6 CUTLER: You'll see the separations less.
7 Right. You'll see the wells like, say, Well 19,
8 you'll probably see a big draw down in the screen 5.
9 But wells farther away, say, 23 or 22 or 24, that
10 separation is less. And it's a physical distance
11 from the pumping.

12 RIPPERDA: Okay.

13 CUTLER: It's just not as impacted as much.

14 Well 21 and 14, you'll see that probably
15 they're always, except for that one, that's an
16 error, all the five screens are basically the same
17 hydraulic head. Pumping does not seem to impact
18 those.

19 RIPPERDA: Because when I looked at the distance
20 from 24 to the Arroyo Well, that's about 1600 feet,
21 2,000 feet, that's as close as 14 is to all the
22 Valley Water wells. So I was kind of wondering why
23 24 and, you know, some of the other wells up there
24 are so influenced by the City of Pasadena wells,
25 which have, you know, a lot of recharge coming down

1 from the Arroyo and that whole groundwater mound,
2 why they, at the same distance, are so affected, but
3 14 at the same distance to the Valley Water Company
4 wells is not so affected.

5 CUTLER: That's a really good question.

6 Basically what's happened, there's some
7 cross-sections, here again they're not in those
8 quarterly reports, but, say, here's the site up
9 here. Here is the Arroyo. The river is coming
10 down. You have these layers. This is layer 1, 2
11 and 3, these aquifer layers.

12 This is over here Well 14. And Well 21 is
13 in the same boat. It's installed over here with our
14 five screen intervals.

15 RIPPERDA: Without as much confinement or
16 aquitards?

17 BURIL: Exactly.

18 CUTLER: It's more of a confined aquifer. And
19 when you're over here on site, say, Wells 23 and 24,
20 and these production wells are pretty -- primarily
21 screened down here in these other screens, water
22 seems to be coming from here and maybe going like
23 this. So you're going to see the draw-down.

24 BURIL: Not through the wells, though.

25 CUTLER: Right. Right. This is just kind of

1 a --

2 RIPPERDA: Right. I understand.

3 CUTLER: So you're going to see more of the
4 draw-down here, where over here it's distance, plus
5 it doesn't have the confining layers to separate
6 that well from the hydraulic head between screens.
7 That's what we think is creating those separations
8 is between, say, screen 4 and screen 5 there's a
9 semiconfining layer. You'll see this one drawn down
10 a lot more. Say, there's a head here and up here.
11 This head is -- where are we going to put it. If
12 there wasn't a confining layer, these two heads may
13 be the same. And that helped us to find the layers.

14 RIPPERDA: Right. Yeah. That's good. That's
15 the kind of thing I was thinking about. But then I
16 then go on with -- I use that exact argument in my
17 head, say, oh, well, it must be less confined over
18 here, more confined over here.

19 But with the various confining layers that
20 exist and from MW-24, MW-16 area over towards the
21 Pasadena wells, the MW-24-16 area is, you know, I
22 suppose your source area for a lot of things, how
23 does -- just like how do these so easily migrate
24 deeper as all of your VOCs go up with depth. You'd
25 think that the confining layers would preclude that

1 to some extent.

2 CUTLER: That's a good question. I'm not sure.
3 But what I think is happening is these are
4 semiconfining. They're probably --

5 RIPPERDA: Of course, they're not fully
6 confining.

7 CUTLER: And these production wells are so
8 powerful and they've been doing this for so long and
9 they pull out so many thousands of gallons a minute
10 that the plume may be just being pulled down through
11 these semiconfining layers.

12 BURIL: Also the extent of that first confining
13 layer that you show basically comes only part way
14 across the site. The second one comes all the way
15 across. So you've got this hole, if you will, that
16 allows stuff maybe to be pulled around that
17 confining layer more easily.

18 CUTLER: Right. Don't know the real answer for
19 that. But because they are so powerful and these
20 pumps are so deep, I think some of it's just getting
21 pulled right down. It's an alluvial fan. It's not
22 just one clay layer that goes across the whole site.
23 It's an intermingled zone of lower permeability
24 materials. And there's bound to be pathways through
25 that.

1 RIPPERDA: Yeah. Okay. That's about it.

2 BURIL: Oh, okay.

3 RIPPERDA: Groundwater conceptual questions.

4 BURIL: Okay. Good.

5 Appreciate the insight on that. Some good
6 stuff there that you've been thinking about.

7 Okay. Have we covered everything we need
8 to cover, then, on item 4? Are there any other
9 questions or discussion?

10 Okay. Good.

11 On community relations, the newsletter
12 status. I'm happy to say you folks will get it
13 tomorrow.

14 RIPPERDA: Yea.

15 BURIL: Hallelujah.

16 GEBERT: Are the legal --

17 BURIL: It's out of everything. It wasn't legal
18 folks holding us up. It was just stuff. So, yeah,
19 it's out, it's done, and you folks will have it
20 tomorrow either -- I'm not sure if we'll get it out
21 by Federal Express. But we'll either fax it to you
22 or -- it's basically going to go out to you
23 tomorrow. So you'll have it either tomorrow or the
24 next day.

25 ATWATER: What's your schedule of sending it out

1 to the public?

2 BURIL: As soon as these folks have reviewed it
3 and said "Cool," it goes.

4 ATWATER: Okay.

5 RIPPERDA: So now to a play into Peter's fear of
6 give us a little and we'll ask for a lot.

7 Now that you've released a newsletter as
8 far as any kind of public information meeting or
9 public outreach, are you going to wait for a
10 proposed plan for one of the RODs sometime next
11 year?

12 BURIL: We haven't really talked about that yet.
13 I guess I would do what you told me not to and turn
14 around to you folks and say "What do you think?"

15 ROBLES: Like yesterday. Right?

16 RIPPERDA: Because what a lot of military bases
17 do is, A, they hold RABs, you know, some kind of
18 public input on an ongoing basis. And usually the
19 best attended public events are some kind of site
20 tour, which is a CERCLA site tour. It's not a tour
21 of the Martian lander area.

22 BURIL: You mean you didn't like that, Mark?

23 RIPPERDA: I liked it a lot. But you don't have
24 to open up the whole site. It's not an open house.
25 But you're taking them to various CERCLA-related

1 issues.

2 ROBLES: And this is before the feasibility is
3 out?

4 RIPPERDA: Oh, yeah. The military bases that I
5 work on just do that like on an annual basis during
6 the RI, during the FS. You know, it's one way to --
7 it's good and bad because you're then opening
8 yourself up for people like attacking you and asking
9 you tough questions before you get post-plan, before
10 you have answers.

11 ROBLES: They can think about --

12 RIPPERDA: This is for you to decide. I'm just
13 saying what other people do. But it's also a way to
14 defuse some of that because once people actually get
15 on site and see, "Oh, you know, the Arroyo actually
16 is nice and pretty. How can it be as nasty as I was
17 accusing JPL of being?" So something to think
18 about.

19 ROBLES: Okay.

20 BURIL: All right.

21 RIPPERDA: I'll always continue to bring that
22 up. Most military bases have RABs four times a year
23 and you guys have met zero times in many years. So
24 --

25 BURIL: Okay. Any thoughts from your area,

1 Richard, on that? Because I know Regional Board
2 defers to you folks as far as community issues go.

3 GEBERT: No. I'm with Mark. Probably more is
4 better than less. Maybe see what reaction you get
5 from your community letter when that comes out.
6 That might determine if there's a need or there's a
7 big interest and more information. We hold
8 workshops. We don't necessarily have to have a
9 public meeting or anything that formal. There's
10 workshops on site, like a booth and they come and
11 get information, a tour.

12 RIPPERDA: A site tour gives people a chance to
13 complain to you off the record. Sometimes people
14 just want to get it out of their system, so then
15 when you have a proposed plan meeting which is on
16 the record, you've already defused a little of
17 public sentiment against you.

18 BURIL: That's a very reasonable thought.

19 I'll share with you, though, that in the
20 course of time, that we have been providing
21 newsletters, information sheets, fact sheets and met
22 with the folks, like City of Pasadena, we've gone
23 with the Raymond Basin Management Board on a number
24 of occasions. Raymond Basin has always, you know,
25 wanted more information. We've tried to give that

1 to them as best we knew how.

2 But the general public, from all the
3 responses that we've gotten during our work in the
4 field, from various things that we've sent out and
5 various things that show up in the newspaper saying
6 these different things are happening, we've had -- I
7 think I could count the number of inquiries on one
8 hand and have fingers left over. It has been
9 incredibly minimal.

10 Certainly, of course, if we'd gotten a
11 great deal of concern being generated by the public
12 in the area, I think we probably would have done a
13 great deal more in trying to work with this. And
14 the general indication is that people are either
15 blissfully ignorant or very happy about what's going
16 on. We don't know. We hope that they're very
17 happy.

18 GEBERT: We'll find out sooner or later.

19 Well, like he says, there's just so many
20 things. Usually it's a good thing.

21 BURIL: All right. OU-2 remedial action. I
22 think this was one that we've talked about, but I
23 wanted to get maybe a little more formal approach on
24 how we approach this thing.

25 I'm standing in the year 2000 budget cycle

1 right now. I have dollars capable of being used to
2 implement a remedial action. But what I guess I
3 need to hear from you folks is outside of the
4 feasibility study, proposed plan, things of that
5 nature, we know how to deal with that, what do we
6 need to put together specifically to initiate a
7 remedial action prior to these things being
8 implemented, formalized and so forth? I've heard,
9 you know, put a proposal down. I've tried to find
10 some information with regard to, you know, what
11 should the content of the proposal be and things of
12 that.

13 And I haven't really found much that's
14 been of much use. They always refer to the idea of,
15 well, you know, you actually do this during the
16 proposed plan or you do this during the other types
17 of processes. We're anxious to get something in
18 place as far as an actual system sometime in the
19 course of the year 2000 or shortly thereafter.

20 Have you folks given any thought to what,
21 specifically, you need to see to say yes, this is
22 good to go ahead and install this as an interim
23 remedial action prior to the FS being finalized, the
24 ROD being finalized and so forth?

25 RIPPERDA: Yeah.

1 BURIL: Okay. Good. I'm glad.

2 RIPPERDA: I think -- I'm quite sure we actually
3 talked about this last time or the time before.

4 Under the CERCLA process you've got two
5 relatively easy ways to do this. There may be some
6 more complicated ways. But two straightforward ways
7 are to do an interim ROD. You don't have to have an
8 FS for an interim ROD. You do have to propose it
9 and have a public meeting. But I assume we're
10 talking basically about vapor extraction.

11 BURIL: Vapor extraction is what we were
12 worrying about right now, yeah.

13 RIPPERDA: So you write an interim ROD that
14 briefly summarizes what would have been in the FS.
15 You do have to do the nine criteria. You have to do
16 the CERCLA stuff, but it's called an interim ROD,
17 you know, meaning you have 30 days to make public
18 comment. The regulators also --

19 BURIL: I remember we did talk about that aspect
20 of it, but we were so early into the FS we were
21 unsure how that would come along. I think we've
22 probably got a better idea of it now.

23 RIPPERDA: The fact you don't need to have an FS
24 first doesn't mean that you don't need the
25 information that's in the FS. So, essentially, you

1 don't need to document, but you do need some of that
2 information because you have to do a reasonable
3 comparison of alternatives.

4 The other thing you do is call it a
5 removal action and under CERCLA it would be a
6 non-time critical -- you would do an EECA, that's an
7 engineering evaluation cost analysis, which also has
8 a 30-day public comment period and a public meeting.
9 So the EECA then takes the place of a feasibility
10 study. It's a 25-page document that just briefly
11 and basically goes through the criteria and compares
12 any alternatives and has a recommendation.

13 Then you go out and do your removal action
14 and you do an action memo, which is the actual
15 declaration, you know, "This is what we're doing."

16 BURIL: So the EECA is then the evaluation
17 that's presented and open for public comment, then,
18 and the -- what was that, again? What was the
19 second part?

20 RIPPERDA: Action memo.

21 BURIL: Action memo. Okay.

22 RIPPERDA: And these are both -- like they're in
23 the NCP. They're very straightforward, widely used
24 CERCLA actions.

25 BURIL: I came across EECAs. Although I

1 didn't -- is there guidance out there that says
2 specifically how you generate one of these? I
3 looked on the Internet site and I didn't see
4 anything.

5 RIPPERDA: There are -- I can give you sample
6 EECAs. I've got like 50 of them that the Air Force
7 and Navy have done in the last couple of years just
8 on my sites. More and more the military has been
9 going the removal action route, doing all their
10 various work under removal actions and then their
11 ROD is a no further action because they've already
12 cleaned everything up. This is all for soil and
13 groundwater.

14 You actually came from the Air Force. The
15 Air Force has been --

16 BURIL: Edwards has had an example like that.

17 RIPPERDA: -- pushing this for soils as the way
18 to like make CERCLA go faster. It doesn't actually
19 make it go faster, but you get more "beans" along
20 the way. I think it's much easier for entities like
21 the Air Force to get funding to go out and do in two
22 or three removal actions per year rather than to do
23 studies for three years and then do one big year of
24 remediation. This way you parse your dollars out
25 over a longer period of time and you actually like

1 get things accomplished over a longer period of
2 time.

3 So yeah, an EECA, there is a guidance. I
4 don't know if it's an official guidance or if it's
5 just kind of like an OSWER directive kind of thing.
6 But I can get you a copy of that as well.

7 BURIL: If you would, please. I think that
8 would be helpful to us. Because if it's agreeable
9 to everyone here, I think that's probably the
10 direction that we would like to go as opposed to
11 dealing with the ROD, since we're so, you know --
12 we're close to ROD, anyway. We're within a year or
13 so of ROD, and the feasibility study just coming
14 out. It would seem like we would be duplicating
15 efforts in terms of the ROD. But the EECA sounds
16 like it's something that would work much better,
17 much more rapidly for us so we could get this thing
18 going and I don't have headquarters beating on my
19 skull about not spending the money in the fiscal
20 year.

21 So, okay. Concerns about that approach?

22 GEBERT: No. It's really your choice.

23 Is there public involvement, Mark, in the
24 CERCLA EPA removal action?

25 RIPPERDA: Yes. The only way you get around the

1 public comment period is to call it a time critical,
2 and they don't have a chance of doing that. So
3 they're going to have an official 30-day public
4 comment. They'll have to do public notice, all of
5 that, with the removal action.

6 BURIL: If you have the guidances and all that
7 there, the locations where we can find all those
8 requirements, that would be great, because that's --

9 RIPPERDA: Yeah.

10 BURIL: I was not aware. I knew about EECAs,
11 but I was not aware that there was a public
12 involvement criterion as a result.

13 GEBERT: It's part of the removal action rather
14 than part of the EECA, is my understanding.

15 RIPPERDA: No. You have to release the EECA.
16 You have to public notice the EECA and have a public
17 comment period on that.

18 GEBERT: I thought it was one or the other.

19 BURIL: That's what I thought, too. That's why
20 I was thinking the removal action was somehow
21 different than the EECA, and the EECA didn't require
22 the --

23 RIPPERDA: That's the difference between time
24 critical and non-time critical. It's non-time
25 critical, but it's still something you want to do

1 sooner than the normal FS/ROD. The EECA is saying
2 this is the problem, this is what we want to do
3 about it, but before we actually do it, like what do
4 you think, public.

5 BURIL: Okay. That would be great. I already
6 mentioned where we're at with this, quote-unquote,
7 pilot study. We are planning to continue to operate
8 that for a while and we'll move that into the EECA
9 phase and continue on from there.

10 Let me ask you folks, how long does it
11 normally take to get an EECA through?

12 First of all, Richard, do you know what
13 involvement, I mean from a State perspective, I
14 don't know if there's an equivalent to an EECA or
15 not. Can you folks help this at all?

16 GEBERT: I look at it as kind of a mini-FS,
17 basically is what it is. How long does it take the
18 FS? Six months. Should be less with an EECA.

19 BURIL: Mark, what's your experience with EECAs?

20 RIPPERDA: Like how long does it take you to
21 write it?

22 BURIL: No. No. I don't want to go there. I
23 want to find out how long it takes to actually get
24 the process, once it's been written, to go through
25 the whole process. What have you found to be a

1 typical time period?

2 RIPPERDA: Once you write it and release it
3 there's a 30-day public comment period and once
4 that's up, you can move as fast as you want. If you
5 have significant public issues, you have to resolve
6 those. But I can't imagine you would for soil vapor
7 extraction.

8 BURIL: One would hope not.

9 RIPPERDA: I don't know if the FFA covers this.
10 I would imagine --

11 BURIL: No, it doesn't. That's why I was --

12 RIPPERDA: Give it us to with a 30-day review
13 period, give yourselves 30 days to respond to
14 comments or 15 days to respond to comments and then
15 a 30-day public review period.

16 BURIL: So the whole process is something we can
17 lay out amongst ourselves. It's not demanded
18 through CERCLA or demanded through the -- I know
19 it's not demanded through the FFA.

20 RIPPERDA: Right. The part that's demanded
21 through CERCLA is the 30-day public comment period.

22 BURIL: Okay.

23 ROBLES: The fastest I've ever seen an EECA in
24 the Air Force is six months. You start, decision,
25 took 60 days to write it, all the time and so on,

1 write some response if they address it, and then
2 publish it afterwards. So it's about six months is
3 the shortest. I've seen EECAs go as long as a year
4 depending if it's very contentious.

5 BURIL: Hopefully we'll not have a contentious
6 issue here, as long as we're able to maintain the
7 separation between the groundwater issues and the
8 soil issues.

9 RIPPERDA: I don't know all the internal things
10 that go into it, but I know the Navy in Honolulu on
11 some of my sites does it faster than that. If they
12 know what they want to do, and since you guys
13 already have the FS underway, you know --

14 ROBLES: The theory is to scope it down to the
15 point that it can be -- small thing. I tried to do
16 an EECA --

17 RIPPERDA: So you already have your decision
18 made. Now all you want to do is write the document
19 that justifies that decision. You certainly can't
20 do it that much faster than six months. But I can't
21 see any reason why it should take longer than five
22 or six months.

23 BURIL: That's good news.

24 GEBERT: All the agencies are on board with you
25 as far as --

1 BURIL: Yeah. There's no --

2 GEBERT: -- argument about that.

3 BURIL: I just want to be sure as I build this
4 thing up and develop the process that I haven't run
5 roughshod over what we might otherwise be expecting.

6 Pete, OU-1/3 remedial action is something
7 you apparently wanted to discuss.

8 ROBLES: Right. We've gotten Rich on board
9 because we're going to be working with the Navy.
10 And what we're doing right now is we're doing a
11 questionnaire on contractors on RAC contracts that
12 we have, that the Navy has.

13 What we're looking at is to do basically a
14 technology matrix training. I don't know if we want
15 to call it a pilot study or something. But what
16 we're looking at is because we want to work on
17 perchlorate on the site. It's technically to deal
18 with the hot spot and see how we can do that. And
19 what we're looking at is a matrix where we will use
20 an air stripper, an ISEP, with a catalytic
21 destruction system, possibly an RO and a liquid
22 phase carbon and see what kind of -- what needs to
23 go first, what needs to go second sort of thing to
24 be used on site.

25 And basically it is to deal with the hot

1 spot and see which is the best way to do that.
2 Because right now we're finding that from
3 discussions within the industry, that depending on
4 which comes first, it can create a problem because
5 of the perchlorate issue, dealing with VOCs. So we
6 want to see which one works on it best that way. So
7 that's what we're working on. We have the go ahead
8 from NASA to go for that.

9 So once we get the questionnaires back and
10 we can start working on a cost estimate, and then we
11 can submit that to NASA and have approval to get the
12 monies for that. We're shooting to try to get
13 something this spring.

14 Basically, we want to get with you guys
15 first of all, before that and see what we need to do
16 as a -- do we need anything if we call it a pilot
17 study? What kind of documents do we need? What do
18 we need to do on that? We're looking at it now is
19 that we would like to reinject into the aquifer on
20 site so that we can control the plume from that
21 standpoint and be able to deal with that. That's
22 what we want to work on right now on that. We're
23 looking at 500 gpm. That's about the max that we
24 can draw on site, and see what we can come up with
25 then and operate at least six months to a year on

1 that or even longer, depending on what's needed.

2 Then it can be converted into a removal
3 action if it seems to work. You know, that's the
4 biggest thing. The catalytic system is in its test
5 phase. It basically gives zero waste discharge, the
6 ISEP, perchlorate, which is a Calgon system. So
7 therefore, we're hoping that we won't have any type
8 of waste stream that we can deal with. We'll just
9 have carbon or what have you. The RO is in there
10 because we never know the next chemical du jour of
11 the month that may come out.

12 We want to see how far down we can get to
13 in cleaning up, because that's going to be a main
14 issue. This is going to help us in determining
15 whether we can even go out there and do some
16 wellhead treatment in the future, particularly with
17 the perchlorate issue. If we find something can't
18 work, then we got a real standstill problem in
19 trying to propose something to the purveyors that
20 we've impacted. This is going to determine how
21 we're going to package this so we can present it,
22 and also look at the cost engineering phase and so
23 on, looking at leasing the equipment and looking at
24 that.

25 Rich, do you have any items?

1 ZUROMSKI: No. Just basically when we get --
2 we're supposed to -- I think tomorrow -- of course,
3 I won't be in the office, but tomorrow we're
4 supposed to get our final feedback. There's about
5 three contractors that we have that are going to
6 give us some feedback on this. And we're probably
7 going to have to use some of the information in the
8 FS as well in determining what kind of technologies
9 we're going to use in the matrix. So we really
10 haven't made a, you know, not 100 percent exactly
11 what we're going to go with, but it seems like
12 probably leaning toward the ISEP system just from
13 the results that they've had on site here. Of
14 course, I haven't seen any of the draft FS or
15 anything like that, so I don't really know.

16 I know of a few technologies that Chuck's
17 already mentioned today that we could use. But I
18 don't really know what the FS is going to say yet,
19 so I couldn't really say which way we're going to
20 go. But I think probably -- probably after next
21 week we'll -- probably within a week we'll have made
22 a decision as to which contractor we're going to go
23 with and then from then we'll have them start
24 reviewing the documents along with myself and make a
25 decision on what technologies we're going to go

1 with.

2 I'm still in the process of digging
3 through all the -- and catching up in the last 10
4 years' worth of data and information that's out
5 there. I'm reading the RI and reading a lot of
6 other information myself that I know that the
7 contractors probably have to look at as well. So
8 it's probably, you know, a few weeks off.

9 BURIL: When you're talking about this series of
10 treatment technologies, you're talking about testing
11 them singularly as well as in various combinations
12 or --

13 ZUROMSKI: Possibility, yes. I mean, if you
14 have, you know, if you have a matrix and, you know,
15 you can basically go around one of the technologies
16 if you think it's not necessary to treat whatever
17 we're pulling out of the ground. I mean, it's
18 really dependent on the contaminants that we're
19 pulling out of the ground, I mean what technology
20 you put in the matrix and then whether or not, like
21 Peter said, we put in like an RO system or something
22 that can handle something that we're not expecting
23 to see now, or that we're not seeing now, but that
24 we could possibly see in the future. That's another
25 possibility as well.

1 ATWATER: Peter, before I think you suggested it
2 was like a 5,000 gpm --

3 ZUROMSKI: 500.

4 ROBLES: 500.

5 ATWATER: Excuse me.

6 ROBLES: 500, not 5,000. I don't think we can
7 suck up that much water.

8 ATWATER: And you probably -- you'd -- like
9 monitoring Well 24 or 13 and then where would you
10 inject? You said you wanted to kind of contain the
11 column farther downgradient, then, between like the
12 Arroyo well?

13 ROBLES: Right. But we were looking at trying
14 to inject on site between where our hot spots are
15 and where the plume is going.

16 BURIL: So we would actually be injecting to the
17 west of JPL as opposed to the east.

18 ROBLES: Yeah. We're still not sure which way.
19 That's going to be the proposal in the contract --

20 ATWATER: Check with the Valley wells, then.

21 Well, the only thing I would say, and I'm
22 like Mark Ripperda, I mean, I know you guys have
23 gotten really animated about the PHGs. But,
24 frankly, if you're treating to -- let's use
25 perchlorate, for example. You have high level of

1 confidence of getting 4 parts per billion and
2 assuming for sake of argument we're going to live
3 with the 18 action level, I still like the
4 alternatives of either pumping it up to the City of
5 Pasadena's Arroyo surface water treatment plant and
6 blending. And with blending you're going to be very
7 low. Frankly, that's the levels that the Colorado
8 River Aqueduct are at. They bounce around between 4
9 and 7 and 8.

10 I just think from that standpoint, and
11 you're going to have all the volatiles down at those
12 very low nondetectable close levels, not parts per
13 trillion, but you're going to have them down well
14 lower than what everybody has been pumping and
15 treating.

16 I mean, as Mark said, if it was true with
17 all the PHGs, well, most of the wells in L.A. County
18 would be having problems. I know you want to
19 reinject. But I just, again, from a cost savings
20 and use of the resource and all that, it still seems
21 to me, frankly, you know, health -- you bawled at me
22 when I tested this at the Arroyo well since the City
23 isn't pumping. Shut off the well.

24 BURIL: When you're talking about the Arroyo --
25 reservoir, did you say?

1 ATWATER: The Arroyo treatment plant.

2 BURIL: Is that the one up here on the hill?

3 ATWATER: Yes.

4 BURIL: What would be the ultimate disposition
5 of the water if we were to send it up there?

6 ATWATER: It goes in the city distribution
7 system.

8 BURIL: Okay.

9 ATWATER: What I'm pointing out is, from a DHS
10 perspective, they like that because you have a clear
11 well and you have a lot of control as opposed to an
12 individual well and then going directly in the
13 domestic system. Of course, as you know also, with
14 the City system with the Windsor Reservoir they
15 blend now.

16 But with the water treatment plant you'd
17 have, again, a lot more operational control in
18 advance of the system in effect -- I mean one of the
19 failsafes, if you have a period where you're
20 operating, you know, hypothetically and you had a,
21 you know, a variation operator, whatever, going up
22 to the water treatment plant, that's the worst thing
23 you do. You discharge from the spreading grounds.

24 ROBLES: I'm looking at --

25 ATWATER: It gives you a lot of operational

1 they're going on line.

2 The only thing I would suggest, and we
3 talked about it before, you had Vera here once, but
4 for them to be successful in their design of that
5 project, they've had almost weekly, if not monthly,
6 meetings with DHS all during the design and
7 construction of that project since last year. And I
8 just -- if you want to follow a track record and --
9 you know, when you talk about public health goals
10 and you want to talk about DHS and you want to talk
11 about State issues, they expect to be fully
12 permitted and operational here in a matter of
13 months. You might want to, you know, spend a little
14 time with both Glendale and, you know --

15 BURIL: When you say Glendale, is this being
16 dealt with through the City of Glendale? Who are
17 the players?

18 ATWATER: You guys will have to help me out.
19 All the PRPs, but it's Lockheed and all the other
20 ones related to the Burbank Airport. There's a
21 whole host of other PRPs. You have -- I know the
22 consultant who did that work is Ken
23 (UNINTELLIGIBLE). I think they designed the
24 treatment plant. It's right there in the City of
25 Glendale on the L.A. River right by their power

1 plant, soccer fields.

2 BURIL: You mean they're next to the
3 Scattergood?

4 ATWATER: Scattergood is El Segundo.

5 BURIL: That's right. I'm sorry. Haynes.

6 ATWATER: It's the Glendale power plant. And,
7 you know, it's a standard unit processes.

8 The other thing they're also dealing with,
9 which is true here too, is one of their bigger
10 issues with is blending for nitrates, going to their
11 domestic system.

12 ROBLES: That's a good point.

13 ATWATER: I think -- I know in acre-feet it's
14 about 6- to 8,000 acre-feet a year treatment system.

15 And, of course, DHS did permit and approve
16 the Burbank system.

17 BURIL: 16,000 a year?

18 ATWATER: Yeah. It's a good size.

19 BURIL: Okay.

20 ATWATER: And in the Burbank plant it's in
21 operation now.

22 BURIL: Is that the one that Lockheed runs?

23 ATWATER: I think that's true. But I'm not sure
24 that if -- they don't contract with the City to
25 operate it. I'm not positive. You may be right.

1 BURIL: Okay.

2 ATWATER: I'm not that familiar with it.

3 BURIL: I've been there a couple of times. I'm
4 trying to remember if that's the right one or not.

5 ATWATER: I don't know if you noticed it, but
6 last month, you know, the DHS did give its approval.
7 That was the issue of a clear well and things like
8 that.

9 BURIL: All right. Great.

10 ATWATER: So I just -- when you guys are doom
11 and gloom, you know, within a stone's throw of you
12 there are success stories.

13 BURIL: That's good to hear. Maybe I don't want
14 to throw myself off the top of the building.

15 ATWATER: I'll see you.

16 BURIL: Thanks.

17 (Mr. Atwater departed.)

18 ROBLES: That's all I got.

19 BURIL: Any questions on that item? Okay.

20 We're down to "Other."

21 Other people, other things, other stuff we
22 want to talk about?

23 RIPPERDA: I have no other today.

24 BURIL: No other.

25 GEBERT: I have just one. I think you left a

1 message for me about us looking into the other
2 sources to the west.

3 BURIL: Yes. I had a question come to me from
4 my management that just basically asked what's
5 happening up there.

6 GEBERT: Right. It's in our process. There's
7 like nine dry cleaners all along Foothill and it
8 goes like a mile or more to the west. And they're
9 in the system that we call a site screening, is the
10 first phase of it. It's like a Phase 1, basically.
11 And then if it looks like theirs might be a problem,
12 then it's kicked up to more like a Phase 2.

13 BURIL: What's the time frame?

14 GEBERT: They haven't been -- they've been in
15 the system. I don't think anybody has started to
16 work on them yet.

17 BURIL: What's the time frame for that? Do you
18 have an estimate?

19 GEBERT: They're to be done by July 2000.

20 RIPPERDA: Phase 1?

21 GEBERT: It's not even a Phase 1. Like a
22 discovery.

23 RIPPERDA: So like you go out and do a site
24 tour?

25 GEBERT: Right. Collect information, regulatory

1 information. Although for these I heard they're
2 going to do a little more than they normally do
3 because there's already evidence that there's --

4 BURIL: Some problem.

5 GEBERT: Could be a problem. It's just like a
6 business that --

7 BURIL: When you do that, are you talking about
8 actually installing wells?

9 GEBERT: Oh, no. It's basically a historical
10 search. And then if there's information that leads
11 us to believe that there could be a problem, then
12 the next step is to do sampling and send out
13 information, request letters to the facilities.

14 BURIL: So all that background type of digging
15 would be done by July or so of this coming year?

16 GEBERT: Right. Right.

17 BURIL: Okay. Great.

18 RIPPERDA: Dry cleaners are kind of cut and
19 dried now. It's like --

20 BURIL: Bad pun.

21 RIPPERDA: The people that do that kind of work
22 know there's certain kinds of dry cleaning equipment
23 that use PCE and there's certain kinds that don't.
24 It's like "Have you ever had this equipment?" And
25 if they have, then they follow them, you know,

1 PCE --

2 BURIL: "You might be a potential concern."

3 GEBERT: There's other political issues, too,
4 because the dry cleaners have a pretty strong lobby,
5 at least in California.

6 BURIL: Really?

7 GEBERT: Oh, yeah.

8 BURIL: That's interesting.

9 GEBERT: And most of them are owned by --

10 ROBLES: Koreans.

11 GEBERT: Yeah. So there's other issues
12 involved.

13 BURIL: Okay.

14 GEBERT: Historically, DTSC has not gone after
15 too much of the dry cleaners. Neither has the Water
16 Board. However, that looks like it might be
17 changing.

18 BURIL: Has there been any decision as to who
19 would be dealing with that that we might be able to
20 contact for more info as it comes available, or
21 should we work through you?

22 GEBERT: You can work through me.

23 BURIL: Okay.

24 GEBERT: As far as I know, they haven't been
25 assigned to any individual yet. I'll keep you

1 informed.

2 BURIL: Just raise your hand and say "I'll do
3 it."

4 GEBERT: I may be in charge of this because
5 of the --

6 BURIL: Because of the proximity to this site?

7 GEBERT: -- proximity.

8 BURIL: Yeah, that's possible.

9 GEBERT: I hope not. I got more than I
10 wanted --

11 BURIL: Got enough, huh?

12 GEBERT: -- with all the schools and all that.

13 RIPPERDA: When EPA does all this kind of stuff,
14 it's all contractors. Like, there's no individual
15 in EPA that goes out and does it. He hires a
16 contractor like, you know, does it.

17 GEBERT: In fact, that's what we are. We signed
18 a contract, DTSC with EPA, to do with a lot of site
19 screening, EPA type work.

20 RIPPERDA: I know like six months ago you and I
21 had talked. You had been denied by EPA because you
22 were adjacent to a Superfund site. And EPA's
23 response is we're not going to spend money when
24 you're next to a down Superfund site.

25 So were you able to like reapply?

1 GEBERT: No. I talked to you. Then you talked
2 to --

3 RIPPERDA: Then I talked to my PSI folks.

4 GEBERT: Right. And that was resolved.

5 RIPPERDA: So they came through with some money
6 or --

7 GEBERT: No. We already had the money. It was
8 approved --

9 RIPPERDA: Oh. But they approved of you
10 spending that money that you already have on those
11 particular sites.

12 GEBERT: On those particular sites.

13 RIPPERDA: Okay.

14 GEBERT: We have to pre-approve every site that
15 we intend to work on.

16 BURIL: So that means both Phebe and Rich work
17 for you. Right?

18 GEBERT: Only in the sense we get money from
19 EPA, which helps a lot.

20 RIPPERDA: And I get my --

21 GEBERT: It's a nice grant.

22 RIPPERDA: We all work for you. You're
23 taxpayers. Our money comes from you.

24 ROBLES: Skin deep.

25 BURIL: We're really getting down now.

1 Do we have anything else on the table?

2 Let's do action items, thank you, Judy,
3 and see how we're standing on finalizing those.

4 I haven't had a chance to look for these
5 yet, so --

6 First of all, before I move any further,
7 anyone have any comments on the May 4th RPM meeting
8 minutes? Or did we already do this?

9 RIPPERDA: No, we haven't.

10 NOVELLY: No.

11 BURIL: So any comments on these?

12 GEBERT: No.

13 BURIL: Then we'll call them approved as
14 written.

15 We were going to check on how the peaks
16 were being read on the soil vapor data as a result
17 of some of the concerns that Alex put forward. I
18 think we've covered that already through the
19 telecons and through the response to his comments.
20 I think that we're good to go on that one.

21 On NDMA we were going to drop that from
22 the quarterly sampling and Alex was going to get
23 back to us to let us know if it was okay to do that
24 annually.

25 Mark, you had indicated you wanted that

1 done on a kind of a five-year running cycle of kind
2 of a huge laundry list of things just to make sure
3 we were keeping track of things.

4 I don't recall that we heard anything from
5 Alex in our telecons. Do you recall, Mark?

6 CUTLER: No.

7 BURIL: Okay. Well, that one's still open.
8 Then we'll have to tag Alex when we get the
9 opportunity to talk to him again.

10 We're going to get the newsletter out and,
11 hallelujah, it's ready to go out.

12 It says here we're going to add another
13 option to the remedial alternatives to provide the
14 alternative source of drinking water and no
15 reinjection or other use of treated water. I think
16 that's built into the FS, if I recall correctly.

17 And I was going to check with Ron Palmer
18 to see when Gary Yamamoto was going to do a
19 presentation to the Raymond Basin Management Board.
20 He did do that. I think it was at their July
21 meeting, and got some interesting information with
22 regard to the PHGs and perchlorate. So there wasn't
23 much more to talk about with that in mind. The
24 biggest one that came out of that was the 97-005
25 policy in terms of that presentation. And I think

1 we are all painfully aware of what the requirements
2 of that are.

3 Alex was going to check on the Board's
4 policy on TDS levels and reinjected water and what
5 that meant in terms of meeting the basin objectives.

6 I don't think we've gotten that one yet
7 either, have we? I don't recall anything.

8 CUTLER: I haven't heard a response.

9 BURIL: So we have two for Alex still
10 outstanding there.

11 And it looks like, Mark, you were going to
12 check with your lawyers on how a State Health
13 Advisory works in dealing with things. I think we
14 were really talking about PHGs. And I guess we've
15 got that answer now, don't we?

16 RIPPERDA: Yeah.

17 BURIL: You were also going to get us some
18 information on the Mather Air Force Base
19 determination on their ARARs. Did you ever receive
20 that, Mark? You were going to send it directly to
21 Foster Wheeler.

22 RIPPERDA: Oh. No. Yeah, what I ended up doing
23 is just getting our legal opinion.

24 BURIL: Oh, okay. All right. That's fine.
25 Then we'll call that one done, too, based on what

1 you've given me here. That's dealing with the
2 injection versus infiltration and so on and so on.
3 I think we've got an answer on that one. Okay.

4 And for the last time around, that was it.
5 Okay.

6 Judy.

7 NOVELLY: For this meeting we only have three.
8 We're going to be sending out the updated CD-ROM for
9 OU-2 RI that has the QA results included.

10 The newsletter will be going out to the
11 agencies tomorrow.

12 And Mark is going to send us some guidance
13 on doing an EECA, as well as an example of one.

14 BURIL: Okay.

15 NOVELLY: We need to set the next meeting.

16 BURIL: Let's see. This is November. Good
17 grief.

18 The next scheduled meeting would probably
19 be in January, given that this is the first week of
20 November.

21 I would suggest that January is probably a
22 good time frame because by that time the RI for OU-2
23 should have gone final and you'll have had in your
24 hands the two FSSs for -- well, probably a shorter
25 period of time. It would be my suggestion that in

1 order to maybe make the meeting productive that we
2 might put it toward the back end of January so that
3 you have opportunity to take a look at the FSSs and
4 maybe formulate some initial opinions that we could
5 talk about.

6 Any thoughts on that approach?

7 GEBERT: That would be good, too. I may not be
8 here the first week or two of January.

9 RIPPERDA: Yes. Me also.

10 BURIL: Then it's definitely going to be in the
11 back part of January. We'll have to get hold of
12 Alex and make sure that he's available.

13 The week of the 24th or the week of the
14 17th are the last two weeks in January. Week of the
15 24th? Okay. Pick a day.

16 First of all, Pete, are you tied down
17 anywhere? Because I'm wide open. I've got nothing
18 on there. Okay.

19 RIPPERDA: Thursdays are good for me.

20 BURIL: Thursday. All right. Why don't we call
21 it Thursday. That would be the 27th of January.

22 GEBERT: That's not Thanksgiving, is it? Oh,
23 I'm sorry.

24 BURIL: No. That's January.

25 GEBERT: That's January.

1 NOVELLY: Not quite.

2 BURIL: Which country are you thinking of,
3 Richard?

4 GEBERT: I'm sorry.

5 BURIL: 27th of January, 2000. And here again?
6 Okay. Here. And 10:00 A.M. We assume same place,
7 but we'll let you know if anything changes.

8 After lunch, site tour. Who is going on
9 the site tour with us? Richard, Phebe? Everyone
10 else is sick of the place, I'm sure.

11 Okay. Great. We'll call it done, then.
12 Thanks very much.

13 (The proceedings adjourned at 11:57 A.M.)

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MEETING ATTENDANCE RECORD



**NASA/JPL SUPERFUND SITE
DHS/RBMB INFORMATIONAL MEETING
November 4, 1999**

Please print the information requested below and pass this sheet along to the next person. Thank you.

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