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REMEDIAL PROJECT MANAGERS' MEETING

NASA/JET PROPULSION LABORATORY

2 AUGUST 1996

ATTENDEES:

Sayareh Amir, DTSC

Jon Bishop, RWQCB-LA

Charles L. Buriel, JPL

Craig Christmann, DTSC

Mark Cutler, Foster Wheeler

Debbie Lowe, U.S. EPA

Dan Melchior, Foster Wheeler (by telecon)

Penny Nakashima, DTSC

Stephen Niou, URS

Judith A. Novelly, JPL

B.G. Randolph, Foster Wheeler

Barbara Renzi, DTSC

Peter Robles, Jr., NASA

Dan Stralka, U.S. EPA

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Reported by: Louise K. Mizota, CSR 2818

1 PASADENA, CALIFORNIA

2 2 AUGUST 1996

3 1:30 P.M.

4

5 LOWE: I drafted the agenda. I thought it would
6 be useful to spend a few minutes talking about what
7 we agreed to at the last meeting to make sure there
8 aren't any misunderstandings.

9 So the first thing, just to put some
10 perspective on what we're trying to decide and when,
11 one of the things we talked about is the field
12 schedule and what's going on. And what I have down
13 here is that there's currently a groundwater
14 sampling event ongoing as we speak.

15 BURIL: Starting up next week. Right, Mark?

16 CUTLER: Yes. We will start next week.

17 LOWE: The first groundwater sampling event that
18 will occur after the new wells are installed is in
19 January.

20 BURIL: Is that right, Mark?

21 CUTLER: I'm sorry?

22 LOWE: The first groundwater sampling event that
23 will happen after the three new wells are installed
24 will be in January.

25 CUTLER: It will begin probably late January.

1 Right. Yes.

2 LOWE: And the soil sampling from the original
3 schedule was scheduled to begin in mid October.

4 RANDOLPH: Correct.

5 CUTLER: That's the current schedule.

6 BURIL: That's the current schedule.

7 LOWE: So those are the current field schedule
8 constraints that we're working with, then.

9 What I got from the flip charts and from
10 my memory and my own notes about the agreement we
11 came to at the last meeting, I listed them in the
12 agenda. The first one is that NASA/JPL will sample
13 Well Number 13 for tributyl tin in this current
14 sampling event. And so far JPL has only agreed to
15 sample that once.

16 BURIL: That's correct.

17 LOWE: It's still a discussion item about
18 whether or not it needs to be sampled again. All we
19 have agreed to is it will be sampled once. And the
20 sampling will include a duplicate sampling for
21 QA/QC.

22 The second one was that NASA/JPL will
23 sample screen number 2 of MW-12 for PAHs in the July
24 sampling event. And again, this is something that
25 JPL agreed to for once. And we'll see what happens

1 after that.

2 AMIR: July sampling has been done?

3 BURIL: No, it hasn't been accomplished yet. It
4 was scheduled for July. We're running a little
5 behind. So it's actually starting this coming week.

6 CUTLER: It will probably take five weeks to
7 collect all the samples. It will begin next week.
8 It will probably take five weeks, at least.

9 LOWE: And C is, with the exception of MW-12,
10 screen 2 of MW-12, the groundwater wells will no
11 longer be sampled for SVOCs.

12 Does anybody disagree with that?

13 NAKASHIMA: Were we going to take a look,
14 though, first at the unknowns?

15 RENZI: I think that's another item.

16 NAKASHIMA: That's a separate item.

17 BURIL: Debbie, I don't know how you want to
18 approach this, but we have some data here that we
19 should probably pass out so that everyone has all of
20 this good information.

21 I just want to make note of the fact that
22 we have data here in terms of unknowns and analyses
23 that incorporate validation efforts here ready to
24 pass out to you. So when you're ready to have that
25 come out.

1 LOWE: Okay. We could either talk about that
2 now, we could talk about that as part of JPL's
3 questions, or we could add that to number 4, the
4 discussion items.

5 ROBLES: Probably add it to the discussion
6 items. We can go through the items.

7 LOWE: Okay. D is that NASA/JPL will provide
8 the agencies with written rationale for why metals
9 do not need to be analyzed for the soil samples and
10 soil borings, although we did not decide where this
11 rationale would go. We sketched out some items
12 which were -- that's not your understanding?

13 RANDOLPH: That's not correct. We are analyzing
14 soil samples from all the borings for the whole
15 suite of analyses, including metals. There were
16 only two samples that we were not going to do the
17 metals on, and those are the samples from the two
18 test pits.

19 BURIL: Correct.

20 LOWE: So if I cross out "soil samples and soil
21 borings" and put "test pits"?

22 RANDOLPH: Correct.

23 BURIL: Mark, we had not planned on doing metals
24 in groundwater. Is that correct?

25 CUTLER: Other than chrome and hex chrome.

1 BURIL: Other than chrome and hex chrome.

2 CUTLER: That's correct.

3 BURIL: So the groundwater portion of that,
4 based on the original comments we received from
5 DTSC, is still a question mark.

6 Yes, B.G.

7 RANDOLPH: The rationale for that basically was
8 based on the fact that we discussed in January that
9 there really wasn't a metals problem, and we had
10 agreed not to do them at that time. We only agreed
11 to do VOCs, SVOCs, chrome and hex chrome. And it
12 was agreed upon by all.

13 BURIL: We have other data that we can bring out
14 to help support that.

15 LOWE: B.G., I'm just going back to what we were
16 talking about in the meetings. I remember writing
17 down on the flip chart that JPL had several reasons
18 for why they felt it wasn't necessary to sample for
19 metals in those test pits, but that DTSC was making
20 the point, well, you didn't discuss that rationale
21 in the workplan. So it's in the meeting minutes, or
22 whatever, but 10 years down the road when someone
23 wants to come back, they're going to come back to
24 the workplans. No one is going to sit down and read
25 all the meeting minutes.

1 So I think it needs to go somewhere, and
2 if you have that in your mind, put it in writing and
3 then we'll talk about where it needs to go.

4 So that was the only point. If we can
5 include that as an action item, I think that would
6 clear that up a little bit. Okay.

7 E, I thought we agreed that DTSC would
8 take soil samples from the trenches for metals.

9 Is that what we agreed to, Penny?

10 NAKASHIMA: Right.

11 LOWE: I guess F was just clarifying what was
12 already in the workplan, that NASA/JPL would sample
13 the trenches for VOCs, SVOCs, chrome and hex chrome.

14 BURIL: That's correct.

15 LOWE: So the next thing was to review the
16 action items, which everybody knows what they're
17 supposed to do and when.

18 This is on page 3 of Jon's fax. The first
19 one is DTSC will identify by the next RPM meeting
20 which groundwater wells need to be sampled for TBT
21 at the January-April sampling events.

22 NAKASHIMA: Which item is that one? That's not
23 on here.

24 LOWE: This is Jon's flip chart notes.

25 NAKASHIMA: Was MW-13 where you had the hit of

1 chrome, and then we wanted another well which was
2 downgradient of the other areas where the cooling
3 tower waste discharges were? Are we limited there
4 to -- I'm sorry.

5 CUTLER: Can we wait until we see the results
6 from MW-13 to see if we need to go downgradient?

7 NAKASHIMA: And we were going to wait for the
8 results --

9 AMIR: Yes.

10 NAKASHIMA: -- from MW-13.

11 CHRISTMANN: What you were proposing was they
12 were going to sample MW-13 this next time and then
13 look at those results and then decide whether you
14 needed to do the other wells?

15 NAKASHIMA: Right.

16 CUTLER: I thought that was the plan, and then
17 look at fate and transport information and our
18 chemical data, because the only well we've ever had
19 chrome and hex chrome is that one adjacent to the
20 tower. Based on that data, fate and transport, a
21 decision would be made.

22 BURIL: Excuse me, folks. We forgot someone.
23 We're going to get Dan on the phone. He's in
24 Washington, D.C. He couldn't make it out today.

25 BISHOP: Just to clarify for my understanding,

1 if TBT is nondetect on 13, then the decision is not
2 to sample the other wells, or is to sample the other
3 wells?

4 RENZI: B.G., the cooling tower 118, that's not
5 the one that monitoring Well 13 is next to.

6 RANDOLPH: No.

7 RENZI: So we're talking about two different
8 cooling towers. So why don't we not make it
9 contingent on the results of Monitoring Well 13
10 results. Weren't we going to have -- I don't
11 remember.

12 NAKASHIMA: I think we're going to make it
13 contingent on the --

14 RENZI: Soil sample.

15 NOVELLY: You'll have to speak up a little bit.
16 She can't hear you.

17 AMIR: It was just a private discussion.

18 NOVELLY: We'd rather keep those down and just
19 stick with the main discussion so the recorder can
20 follow it.

21 RENZI: We're talking about two different
22 cooling towers. One had a surface discharge to the
23 Arroyo. That was the 118 we were shown this
24 morning.

25 CHRISTMANN: That's Monitoring Well 12.

1 RENZI: The purpose of the soil samples from the
2 trenches, we talked about those, sampling those for
3 tributyl tin. Then the other cooling tower, or the
4 other Monitoring Well 13 is adjacent to another
5 cooling tower that has the hex chrome hit that
6 you're going to sample here soon.

7 RANDOLPH: That's correct. Yes.

8 RENZI: So I saw them as two separate. But
9 correct me. I didn't realize they were contingent
10 results from Monitoring Well 13.

11 LOWE: So what other well than Monitoring Well
12 13 are you looking to have sampled? Or did I miss
13 what you said? Is there another well --

14 RENZI: I didn't realize that sampling in the
15 trenches -- the soil samples from the trenches, and
16 possibly another monitoring well associated with
17 that outfall area, I didn't understand that those --
18 sampling those was contingent on the results from
19 sampling Monitoring Well 13.

20 NAKASHIMA: I think where the confusion was, we
21 were going to look at the results from 13 first to
22 determine if we had to include the tributyl tin in
23 any of the other wells -- or I'm sorry, in the
24 monitoring program.

25 AMIR: Right.

1 NAKASHIMA: But the other outfall area, we
2 wanted to get a sample from a well which is
3 downgradient of that area.

4 LOWE: And what well is that?

5 CUTLER: Even if it's not in the soil.

6 I guess my question then is why are we
7 getting fate and transport information if the
8 decision is going to be made --

9 RENZI: I wondered that, too.

10 CUTLER: I guess I'm confused. I guess we're
11 trying to get it clarified. I don't mean to make
12 this a big point, but I'm confused now. Why are we
13 getting fate and transport?

14 BISHOP: We have got two things going on.
15 Right? We've got Monitoring Well 13, which had the
16 chrome. Right?

17 CUTLER: Right.

18 BISHOP: We've got Monitoring Well 12 - this is
19 obviously not to scale - which is close to -- the
20 closest well to the discharge from the cooling
21 tower. Is that correct?

22 RENZI: Is that on the Arroyo?

23 NAKASHIMA: MW-12 is the one near the Arroyo.

24 BISHOP: Near the Arroyo, which is the one that
25 is closest to the known discharge from the cooling

1 tower.

2 NAKASHIMA: Correct.

3 BISHOP: Correct? So these things are not
4 necessarily coupled? Correct?

5 NAKASHIMA: Correct.

6 BISHOP: So the information from here is do we
7 want to include it in the monitoring program. The
8 information from MW-Well 12 is associated with the
9 discharge off of there. So it doesn't matter. If
10 there's a hit or TBT in here has no relationship to
11 here. So the contingency on here is not -- there is
12 no --

13 RENZI: There is no contingency. That's my
14 understanding.

15 BISHOP: Right.

16 So the other well that you want sampled is
17 MW-12. There is a contingency about including
18 tributyl tin in the sampling program in the future
19 if there's hits of it. But what we're trying to
20 discuss at this point is were there any other wells
21 that needed to be sampled for tributyl tin as a
22 first shot. So that would be Monitoring Well 13,
23 which we've already identified, and Monitoring Well
24 12.

25 Is that correct?

1 NAKASHIMA: Right.

2 RENZI: I'm sorry. Where is 12? I don't see it
3 on here.

4 NIOU: By the Arroyo, southeast. Southeast of
5 13.

6 RENZI: Okay.

7 LOWE: So DTSC has identified that they would
8 like to see TBT analyzed for MW-12 and MW-13. Right
9 now JPL is only planning to do it in MW-13.

10 CUTLER: Is that all screens in 12?

11 RENZI: No.

12 CUTLER: The upper screen?

13 RENZI: Yes.

14 BISHOP: So we've taken care of action item
15 number 1, at least in terms of --

16 LOWE: In terms of the action item. It's still
17 open for discussion about whether or not JPL is
18 willing to sample the first screen of MW-12 for TBT.
19 Shall we just --

20 BURIL: I guess one question I have is how many
21 times, and what would be the outcome of the data
22 that's generated. In other words, how will it be
23 used?

24 STRALKA: So the first shot is -- the question
25 is was TBT used and discharged in any quantity to

1 become a problem.

2 Depending on the outcome of 12 and 13, I
3 guess they're not linked, but if we get positive
4 hits in either 12 or 13 for TBT, then it would be a
5 question of the extent, in which case then we would
6 have to go and say are we going to put this in the
7 monitoring program and sample everywhere for this,
8 or not.

9 So the first cause is we have reason to
10 believe where the source of the cooling tower
11 discharge is, then look at the most probable
12 locations for that. It should be in the surface,
13 since it's soluble. It should be in the upper part
14 of the aquifer, not necessarily mixed throughout.
15 Look for the positive hits and then follow on based
16 on the results of that.

17 BURIL: In terms of follow-on, then, are we in a
18 position of saying that if we do not detect it that
19 it would not be included as part of the monitoring
20 program from that point forward?

21 STRALKA: I think so.

22 BURIL: Is everyone here in agreement with that?

23 NAKASHIMA: Is this after how many sampling
24 events? What are we talking about?

25 BURIL: That was my question.

1 STRALKA: If we do a sampling round and we don't
2 find TBT, do we continue to do monitoring for TBT?

3 NAKASHIMA: I think DTSC would prefer to have at
4 least two sampling events to confirm TBT is present
5 or not present.

6 STRALKA: So that would be two rounds in 12 and
7 13 for sure.

8 CHRISTMANN: Right.

9 RENZI: We also talked about soil in the trench.

10 NAKASHIMA: And all the soil samples.

11 CHRISTMANN: Right. I think if then we see that
12 there's nothing in the soil, nothing in either of
13 those wells, two rounds, then we say, okay, you've
14 looked, it's not here, we'll let it go.

15 ROBLES: We'll take it under advisement. If we
16 get it in writing we can take a look at it.

17 LOWE: So the second action item was that
18 NASA/JPL will do a one-time sampling in MW-13 for
19 TBT in July sampling. It's the same thing that was
20 in the agenda.

21 I'll add to this that NASA/JPL will
22 consider the possibility of sampling the first
23 screen of 12 and 13 for two rounds. So that's an
24 action item for you to get back to us.

25 BURIL: We would like that from DTSC in writing.

1 ROBLES: We will consider the written request
2 from DTSC to do two samples.

3 BURIL: So we know what it is that you're
4 requesting.

5 LOWE: So I will change this to a DTSC action
6 item to get a letter to NASA stating that you would
7 like to see the first screen of MW-12 and MW-13
8 sampled for two rounds for TBT.

9 BURIL: If you could also include in that letter
10 the outcome of the findings, depending upon what we
11 find.

12 CHRISTMANN: Right.

13 BURIL: If we don't find it, we're done; if we
14 do find it, it's open for discussion as to what to
15 do next.

16 LOWE: Okay. The third action item was TBT
17 research to be completed by August 23rd. I handed
18 out copies of things to Chuck, Penny, a couple
19 people. That's all I'm going to do.

20 I gave one to Jon.

21 BISHOP: Does that take care of your assignment?

22 LOWE: That's my assignment.

23 BISHOP: I have it here.

24 BURIL: We have some information which Mark
25 Jones, the risk assessor for Foster Wheeler

1 Environmental, was able to pull together. I have
2 not reviewed this in detail, but I'll offer it up as
3 some additional information to take into account as
4 we go through this. So I'll pass that around.

5 If you don't have enough copies, tell me,
6 please, because I was not counting on this many
7 people.

8 LOWE: The next action item was that Foster
9 Wheeler would determine the lab's unknown SVOC
10 procedure.

11 BURIL: We have that here.

12 In conjunction with this, this is the
13 procedure that the laboratory uses. I'll pass that
14 out to you as well.

15 LOWE: I suggest we pass this out. I've added
16 to the discussion items the SVOC item.

17 BURIL: Sure. In addition to that, then, let me
18 pass out one other piece of information here that
19 goes along with the unknowns. This is data that we
20 generated looking at the unknowns and the retention
21 times.

22 Mark, since you generated this, why don't
23 you explain what's here and what it's hopefully
24 showing us.

25 CUTLER: We listed every unknown that was

1 detected both on site and off site in the last two
2 RI rounds, the concentration. I don't know if you
3 want to get into this detail.

4 You'll see over 90 percent of these
5 unknowns were detected in the laboratory method
6 blank. We've identified the retention time. In our
7 other data table we had a little B identifying these
8 as blank contaminants. We have identified retention
9 times hopefully to make you a little more
10 comfortable that that unknown in the method blank is
11 the same unknown in the sample.

12 There's other comments. In unknowns where
13 that wasn't the case, you'll see some of the
14 comments. But that's every unknown.

15 LOWE: The next action item was to have DTSC
16 review the SVOC data validation packages to evaluate
17 the unknowns.

18 Since then I've talked to my chemists at
19 EPA, and they're willing to dedicate the resources
20 to looking at some of this information, but they
21 don't want to review the data validation packages.
22 What they want is the mass spectrographs and GC
23 retention times. From that they think they can
24 determine what types of contaminants, or what class
25 of contaminant you have, which it looks like you've

1 done some of that. But I'll leave it to DTSC if you
2 still want to review the data validation packages or
3 if you would like EPA to step in and do this next
4 one.

5 NAKASHIMA: If EPA can do it and you're willing
6 to do it.

7 LOWE: Okay.

8 BURIL: One thing I'd like just a little
9 clarification on is the purpose of this review, once
10 again. Is this to identify the class of unknowns or
11 what chemical class the unknown might belong to?
12 And if we do that, what would be the use of that
13 data at the time that we would identify it?

14 LOWE: Do you want to address this?

15 STRALKA: I'm sorry.

16 LOWE: Could you repeat your question?

17 BURIL: Sure. What I'm interested in is knowing
18 what we're doing this for, basically. If we're
19 going to be going through to identify what potential
20 chemical class or compound these are, and then
21 somehow utilize that information in some fashion I'd
22 just like to know what that process is so that we
23 have that understood.

24 STRALKA: This is the same process that you
25 normally do in risk assessment. What you're going

1 to do -- the way the lab is set up is the lab is
2 only looking for certain compounds. They're only
3 running standards for certain compounds. So if it's
4 not one of those compounds, they're going to list it
5 as unidentified because they're not going to take
6 the time to look at it and say, "Well, what is this
7 really?"

8 What we're saying here is we're saying we
9 have a significant number of unknowns; look to see
10 whether you can tell what those are. And then we
11 can -- again, if we know what they are and we have a
12 rough estimate of the concentration, we can make a
13 call as to how much of a hazard is it, what's
14 associated with it.

15 If we don't know the exact compound by
16 looking at the GCMS, we can look at the class of
17 compound. Is it an ether, is it -- depending on
18 where it came out on the GC. So as you see in the
19 chromatogram, it comes out, it's like, okay, what is
20 it? Is it a long-chain hydrocarbon? Is it
21 associated with something else? Is it associated
22 with another product that we've already determined?

23 And then we can make a call as to, well,
24 is it necessary to do a special analysis to
25 determine what it is? Is it at a high enough

1 concentration to be of concern? Are we seeing the
2 same detection across the board? Is this a
3 large-scale contamination?

4 This goes back to kind of the uncertainty
5 associated with the R&D nature of the rocket fuels
6 and the testing, and that type of thing. It's like
7 are we seeing things that aren't normally or
8 commonly seen across the board, like the TCE, PCE
9 type thing.

10 BURIL: Will there be an evaluation of the
11 possibility of it being present in laboratory blanks
12 or introduced through laboratory analyses, sampling
13 protocol, et cetera? My concern being that we've
14 tentatively identified the source for an awful lot
15 of this stuff, and that going through what you're
16 identifying, if we can come to agreement that we are
17 actually looking at things that were introduced in
18 the sampling or analytical protocols --

19 STRALKA: That's true.

20 BURIL: -- that we would be wasting our time.

21 STRALKA: We would want to look to see whether
22 it's in the blanks, whether it's part of a lab
23 procedure or lab introduction, whether it's a
24 handling error, an introduction due to handling the
25 bottles. Yes. We would want to know that up front.

1 I'm assuming that that's already been screened out,
2 that that has already been taken care of.

3 LOWE: Can I suggest we deal with this --

4 CUTLER: Let me try to get you on the speaker
5 phone. Hang on. Are you there? Dan?

6 BURIL: Dan?

7 MELCHIOR: Sorry about that. I just walked away
8 from my desk and I gather you called. I didn't go
9 up front to get messages.

10 BURIL: No problem.

11 We're kind of far down on the agenda thus
12 far, as far as reviewing things. We're on the
13 subject of unknowns right now.

14 MELCHIOR: Okay. Great.

15 LOWE: Can I suggest we table this and deal with
16 it separately as a conference call? I'll bring
17 someone from my quality assurance/quality
18 management, a chemist, to talk about this. Foster
19 Wheeler can bring their chemist, DTSC their chemist,
20 because I think we're all --

21 ROBLES: Sure. That's prudent. Let's table
22 this.

23 BURIL: That's reasonable. Sure.

24 BISHOP: I have a slightly unrelated question.
25 Does this seem like an awful lot of

1 laboratory-introduced compounds here, from people's
2 experience?

3 CHRISTMANN: Yes.

4 RENZI: I was surprised.

5 BURIL: It did seem a little high, you have to
6 admit. But it's something that appears from our
7 evaluation that they are laboratory introduced.

8 Of course, we did have some other things
9 that factored in, like water that was supposed to
10 have been organic free and wasn't, and things of
11 that nature. So some of them are not all laboratory
12 per se.

13 CUTLER: It's amazing how hard it is to get
14 clean water. I'm surprised.

15 RENZI: Sometimes in the process of trying to
16 clean it up it gets worse.

17 CHRISTMANN: Has all this data been generated by
18 the same lab, or is this a variety of different
19 labs?

20 CUTLER: All the same lab.

21 BURIL: All done through level 4 protocol.

22 CUTLER: They started using a marker or
23 something on bottles. I think they're finding that
24 the residue from this Magic Marker was starting to
25 show up from one of our events. I can't swear to

1 that, but there were some thoughts that might have
2 been it.

3 LOWE: The next four action items all have to do
4 with selecting background groundwater wells. That's
5 on the agenda, so I suggest we breeze through these
6 action items.

7 The last one was that DTSC would determine
8 the number of additional boring locations and
9 analysis requested. I believe that's on the agenda
10 also.

11 STRALKA: One of the things, back to your
12 question whether there's a lot of these or not, it
13 depends -- I'm trying to determine here about the
14 intensity. I mean, if you set the intensity of your
15 peak, whether you trigger it as an unknown or not
16 can drastically affect whether you have 3 or 5,000.
17 I mean, if you put it down into the noise, you may
18 be getting quite a lot of hits. If we say it has to
19 be -- it has to have, you know, a detection peak
20 above 10, say, or something like that, maybe all
21 these go away.

22 RENZI: Yeah, depending on how they just
23 integrate the peak on the chromatogram. But they
24 were coming out in the reports as milligram per
25 liter levels, based on the standard they use. So

1 they're not -- I don't think they're trivial little
2 peaks.

3 STRALKA: Not all of these are that high.

4 CUTLER: But every one that is the net range was
5 in a method.

6 RENZI: Was in a method.

7 CUTLER: Every single one of those.

8 RENZI: What made me suspicious was they seemed
9 to be similar peak sizes based on the projected
10 concentration, which made it sound like it was
11 something that was an artifact.

12 STRALKA: Which then suggests there's a
13 systematic error which needs to be corrected.

14 RENZI: Exactly.

15 LOWE: I think these are all interesting
16 discussions, but I think it will be more productive
17 if we all have our chemists in the room. So I'll
18 take the lead on trying to set that up as a
19 conference call in the near future.

20 So now we're back to the agenda. We had a
21 couple things to talk about, and I'm open to
22 suggestions about what should go first: Background
23 groundwater wells, metal analyses as part of the
24 quarterly groundwater sampling, additional borings
25 in the parking lot, additional sampling downstream

1 in the Arroyo, a list of questions that NASA/JPL
2 sent out and I drafted responses to, and I guess the
3 question about SVOCs unknowns we've deferred to a
4 later time.

5 So it's just what was on the original
6 agenda.

7 BURIL: Let me suggest that we start with the
8 background wells because I think we have a proposal
9 that will, hopefully, answer questions and concerns
10 that have been voiced in the past.

11 LOWE: Before we go into the discussion about
12 what is an appropriate background groundwater well
13 to be using, I was wondering, Dan, if you could
14 address the question of why it is important to
15 establish background metal concentrations in the
16 groundwater for the risk assessment.

17 STRALKA: I guess it gets back to the question
18 of what level of effort do we need to determine what
19 is background.

20 I mean, essentially for background
21 determinations in groundwater we're essentially
22 going to call -- we're only going to be determining
23 inorganic concentrations. If that's the case, then
24 based on the discussions we've already had today,
25 chromium is the only metal of concern in the

1 groundwater. And we have a very localized chromium
2 contamination, and it is associated with operational
3 history.

4 So what more do we need -- why do we need
5 to spend any more effort to determine background?
6 Do we need to spend any more time doing background?

7 BURIL: I would turn that question to DTSC, as
8 they were the ones who brought the question up.

9 RENZI: We were discussing it in terms of
10 dropping metals -- that's how it came up.
11 Discussing dropping metals from the groundwater
12 monitoring. I was surprised that there were no
13 background wells. They said they can't establish
14 background because of the changing gradients.

15 STRALKA: Right. But then even if we look at
16 the concentrations of metals that have been detected
17 other than the chromium, the concentrations aren't
18 so high as to suggest there's a problem with any of
19 those metals anyway.

20 RENZI: As far as risk-based operational.

21 STRALKA: Right.

22 RENZI: Usually you tell whether or not it's an
23 operationally related based on comparison of
24 background, aside from anything like an MCL.

25 STRALKA: Right. But operationally based, we

1 know that chromium was -- obviously chromium was
2 used because we're finding it in the groundwater.
3 We can link that to the operation. The other metals
4 that we may have operational history of aren't
5 showing up at concentrations high enough to be of
6 concern in the groundwater.

7 So again, it's like, well, after we go
8 through this effort of determining what is
9 background, what more are we going to have? I mean,
10 are we going to use it to determine the cleanup
11 level or something? It's like, well, if metals
12 aren't presenting a problem, are we even going to be
13 cleaning them up?

14 RENZI: That's why Debbie had mentioned at the
15 last meeting that will show up as part of the
16 screening analysis for groundwater.

17 STRALKA: Right.

18 RENZI: Metals don't pose a significant health
19 risk. So when we move on to looking at remediation
20 alternatives, you don't need to address metals.

21 STRALKA: Right.

22 RENZI: I think a lot of it was a question from
23 JPL, because I said you don't have background, and I
24 think it was misunderstood.

25 BURIL: Let me offer up a possible suggestion

1 here as to how to proceed. One of the questions
2 that came up at the last meeting revolved around the
3 screening assessment, and rightfully so, I think.

4 We've gone ahead and we've done that, and
5 we have the data here. We're ready to pass this out
6 to you to take a look at. We have it in a tabular
7 form on the very back page as to basically what the
8 concentrations were that we screened, the different
9 criteria that we compared them against, and then a
10 basic yes/no; did it create a concern either through
11 the PRG or PEA considerations.

12 I'll pass these around to you and you can
13 take a look at what they're telling us.

14 When you get to the back page -- first of
15 all, the first few pages are all data. It's nothing
16 that is any part of the analysis. The actual
17 summarization of everything is on Table 2, which is
18 the last page of the handout there.

19 What we've shown here is a number of
20 different things. As we walk through this, Mark, if
21 I misspeak, please correct me, but I'm going to try
22 to walk through this table, as I think I've got a
23 pretty good understanding of it.

24 Across the top you'll see the different
25 anion names, and then we have a row there for the

1 maximum concentration of any given one of those.
2 Now, recognize that these are filtered samples. We
3 did filter samples, and these are from the filtered
4 analyses.

5 We also indicate in places where there are
6 concerns identified. We tried to show how many
7 detects we've actually had out of all the samples
8 that we've taken, and also the frequency of detects
9 that we've had as a result of comparing it to total
10 amount.

11 The next few rows I think you'll recognize
12 as the various criteria that we compared it to.

13 And then we looked at the screening ratios
14 as identified in the guidance, and developed those.

15 Based on that information, we looked down
16 at the very bottom large row and it's essentially
17 labeled include the metal in refined risk
18 assessment. The ones that come through are arsenic,
19 and there are two columns for arsenic, which I'll
20 explain in a minute; chromium, assuming a total
21 chromium number is hexavalent; and lead.

22 Now, the lead number and the arsenic
23 number both had something done with them under the
24 column that's indicated as Well Average. The
25 locations of these are ones that had multiple

1 screens. In order to try and determine the average
2 of this we averaged them across the individual well.
3 In other words, in arsenic, for example, we only
4 found arsenic in the very bottom screen of Well 3.
5 That is the only place we have ever found it. And
6 also, we have only found it, according to this
7 table, twice.

8 However, the level that generates concern
9 is so incredibly low that anything we find is going
10 to come through the screen, even with the averaging.
11 So that is why it's there.

12 The chromium is there only because of the
13 assumption that it was all hexavalent. The
14 speciation was not completed, and as a result we've
15 presented both cases, the most conservative, and
16 when it was actually analyzed.

17 STRALKA: These are filtered samples?

18 BURIL: That's correct.

19 STRALKA: So if it's filtered samples based on
20 just its physical properties, chrome(6) is soluble,
21 chrome(3) isn't.

22 BURIL: So it may very well be chrome(6).

23 STRALKA: So if you're finding it in water it's
24 all chrome(6).

25 CUTLER: What's interesting, though, is for this

1 total chrome, that maximum is above an MCL, but it
2 came back as a no problem. So apparently the risk
3 screening is more lenient than an MCL in this case.

4 STRALKA: Say again?

5 BURIL: When we reviewed it as chrome(3), it did
6 not trigger. When we reviewed it as chrome(6), it
7 did trigger.

8 RENZI: Risk ratio of 338?

9 STRALKA: That's because you don't have a PRG
10 for chrome here at all.

11 CUTLER: Right. There isn't one.

12 LOWE: There isn't one?

13 BURIL: Apparently not. At least we didn't see
14 it.

15 CUTLER: Not in our tables.

16 RENZI: It's not for total.

17 STRALKA: It's for chrome(6).

18 RENZI: It assumes --

19 STRALKA: Because in water it's all chrome(6),
20 based on physical properties.

21 BURIL: If it's assumed to be solubilized, yes.

22 RENZI: That's a good thing to point out, the
23 PRG table tap water numbers for chrome(6).

24 STRALKA: Right. For soil it says total chrome,
25 and there's the assumption that 1 part in 6 is

1 chrome(6). That's because that's based on what
2 we've seen it at plating shops or whatever. We know
3 the reductive capacity in the soil, once you spill
4 it in the ground, it's not all chrome(6). But in
5 water, if you're measuring it, it's chrome(6).

6 Now, if you didn't filter it and you can
7 say, well, we've measured it -- we're evaluating it
8 as all chrome(6), but now it's a problem, now we
9 need to go back and filter it to see whether it
10 really is all soluble, that's a valid point. But
11 here we've already sampled -- we've already filtered
12 it. So if it's in the water, it's chrome(6).

13 CUTLER: Okay.

14 STRALKA: So there is a PRG.

15 BURIL: You're basing that on the solubility of
16 chrome hexavalent versus trivalent.

17 STRALKA: Yes. It's like night and day. 4 is a
18 magnitude difference between solubilities.

19 ROBLES: You were saying in the risk assessment
20 it didn't come out as a factor?

21 STRALKA: Because they used total chrome and
22 there's no PRG for total chrome in water. It lists
23 it as chrome(6).

24 ROBLES: Okay.

25 BURIL: Then under lead, we did a similar thing

1 with lead as we did with arsenic. Under the column
2 it's identified Well Average. Unfortunately, both
3 of these came through on the screening.

4 However, we found that we are right on the
5 ragged edge of the lead number as far as the
6 averaging goes. And the averaging, Dan, was going
7 back to what I believe was the agreement that we
8 reached about multi-port wells, about averaging them
9 across the entire length of the well, in other
10 words, all five screens, averaging them in with half
11 the detection limit as the number to use when we
12 deal with nondetects.

13 RENZI: I do want to interject something here.
14 It's the Department's policy that we use unfiltered
15 data for risk assessment.

16 CUTLER: What's interesting about that, if we
17 use unfiltered data, it will pass because we have
18 our highest detects in our filtered samples. There
19 are two hits in this lead that are high. One of
20 them in the unfiltered is nondetect, and the other
21 one in the unfiltered is half its value, half the
22 value that's in the filter. So we think --

23 STRALKA: Is that because the detection limits
24 were different in the assay, or what?

25 BURIL: We think there may actually be lead in

1 the filters.

2 CUTLER: I hate to even say it, but it could be
3 just sampling things in the field.

4 BURIL: Or there may be lead in the filters. We
5 don't know.

6 STRALKA: No, the filters are all nylon. There
7 shouldn't be any metals in the filters.

8 BURIL: Actually, we have found there are metals
9 in the filters. We have found antimonies, and what
10 was the other one?

11 CUTLER: I can't remember now. We've done
12 studies where we sent just blank filters to the lab
13 and said take the first quart of water through this
14 filter and sample it because we're picking up little
15 bits of metals all over. And there's definitely
16 metals in these filters. We have searched for
17 different vendors. Now we try to flush the filters
18 in the field with the groundwater before we collect
19 a sample.

20 STRALKA: Which filters are you using?

21 CUTLER: There's these Millipour.

22 STRALKA: Millipour encased, right?

23 CUTLER: Encased. We had terrible problems. So
24 Chuck could be right. We could get little bits of
25 various things. Lead could be one of them.

1 STRALKA: Even with that, if you look at this
2 analysis, the outcome of this analysis, there's
3 nothing that we need to look at for background.
4 Arsenic is very low. Arsenic does come through the
5 screen. But you only have two hits where it's high.
6 They're all in the same spot.

7 BURIL: That's right.

8 STRALKA: So it's a juxtaposition problem. It's
9 not a background issue. It's like we either have it
10 in this well or we don't. We have it in this well.
11 We don't have it everywhere else. So it's not a
12 background issue.

13 The same is true for lead. You have 15
14 samples where you detected it. It's a
15 juxtaposition. Are they all close together, or are
16 they all over the place? It's not all over the
17 place. They're all in one relatively small area.
18 We have operational history to suggest that lead was
19 introduced. So again, it's not a background issue.

20 Chromium is the same thing. There's no
21 background question here.

22 BISHOP: Is the lead in one place?

23 CUTLER: Lead is a little more scattered. As
24 you can see on this form, there's about 15 hits. If
25 you look on the table, Table 1, you can see where it

1 is. It's pretty much scattered. There are two hits
2 that seem to trigger a fail on the risk screening,
3 and they're both from filtered samples. If you look
4 at all the unfiltered, it would pass. There would
5 be "noes" in this box.

6 STRALKA: I guess that doesn't stand to reason.
7 That kind of goes against what you would think would
8 be the case. And if that's what our assumption is,
9 something is a systematic error.

10 CUTLER: Right. The only thing that makes
11 sense, laboratory --

12 MELCHIOR: I think what you're looking at is
13 random variability in a lot of these analyses. You
14 also have to look at the precision of the analytical
15 method when you're down at those low detection
16 limits. I think before you jump to a conclusion to
17 look for some sort of source, or whatever, that
18 these numbers are so low that we need to really look
19 at the analytical procedure. As Mark was saying,
20 minor perturbations, and the like, will certainly
21 have an influence on it.

22 STRALKA: Right. That's what I mean. It's a
23 management decision. It's not a background issue.
24 We can deal with these without going through trying
25 to determine what background is or anything else.

1 BISHOP: But I'd like to make one other comment,
2 that they stop being at real low to minor when they
3 pass through the risk assessment. Is that correct?
4 When they've passed through the screening, they stop
5 being perturbation of the sampling. They've become
6 an issue to think about.

7 STRALKA: That's right. Remember, what we're
8 looking at here is individual samples and not an
9 average over lifetime or whatever, which we are
10 trying to do for the risk screening.

11 BISHOP: Right.

12 STRALKA: So again, it goes back to a management
13 issue of, well, what's the reality of the case. Are
14 we looking at contamination over a large area? Are
15 we looking at a small area where we can deal with it
16 without trying to -- you know, are we going to deal
17 with it in the process of other contamination that
18 we have there without directly answering what is the
19 source and where is it all coming from, and that
20 type of thing. We can answer the question, or we
21 can deal with the question in a different way
22 without trying to go through the whole effort of,
23 well, is it background.

24 BURIL: Dan, let me ask you this, then. What
25 I'm hearing you say, I think I understand, but it

1 leads me to wonder. In dealing, for example, with
2 arsenic, where we have one screen in one well that
3 detected it twice, is that going to be considered a
4 problem worthy of further evaluation and
5 consideration of some remedial action potentially,
6 depending upon other work?

7 STRALKA: I think that's for the project team to
8 decide, but I would say that you could make the case
9 that, based on the depth and looking at the other
10 contaminants associated with that depth at that
11 sampling point, do we have other contaminants there?
12 Do we have reason to believe that that arsenic is
13 either being introduced from the operational history
14 or is being solubilized by the introduction of other
15 organic contaminants in that area?

16 In other words, is it something else
17 that's already in there that's causing the problem?
18 It's not a problem before we put this other organic
19 contaminant in there. But now this organic
20 contaminant is changing the electrochemistry such
21 that now arsenic is becoming a problem. It's
22 changing the pH, or whatever it's doing. Is there
23 reason to believe that we have caused that?

24 Now, that may be the case and you still
25 may end up making a management decision that you're

1 just going to monitor it, that it's not a large
2 enough problem that you need to deal with
3 explicitly, that you may be dealing with the cause
4 of the problem, in this case the organics, and that
5 in the process of dealing with the organics you're
6 going to deal with the arsenic as well.

7 So again, we don't expressly answer the
8 question of is arsenic a problem at this
9 concentration. It's like yes, it is, but we're
10 going to take care of it in the process of managing
11 our risks.

12 So all we've done in the risk screening is
13 come out, as Jon says, are these at concentrations
14 of concern, and if they are we go back and say,
15 okay, they're concentrations of concern. What's the
16 distribution? Where are they? What's causing it?
17 Is it something we can deal with, or is it something
18 we can manage the risk in a different way and still
19 obtain the goal of being able to protect it?

20 LOWE: So based on those risk screenings, do you
21 think they will need to continue to analyze the
22 groundwater for metals other than hex chrome?

23 STRALKA: Based just on this, we'd have to look
24 at that one. We still need to go back and look at
25 that arsenic screening where you've got the two

1 hits, where those two hits -- do we have nondetects
2 since then? What's the deal with that? That's kind
3 of the temporal arrangement of that.

4 Obviously, you have the spatial
5 arrangement. Are there other contaminants in there
6 again?

7 BURIL: I was just looking at that, as a matter
8 of fact. The bottom screen of Well 3, with the
9 exception of things that I think we've identified as
10 potential lab contaminants, we don't appear to have
11 anything else in there.

12 Mark, is that your recollection as well?

13 CUTLER: There have been no VOCs ever detected
14 down that deep in Well 3.

15 BURIL: Semi VOAs, from what I'm seeing here,
16 are essentially not there.

17 CHRISTMANN: The geochemistry of that water is
18 significantly different than the rest of the well?

19 CUTLER: It's an interesting question. It's
20 different. Significant or not, I don't know.

21 STRALKA: It's different because of? How are
22 you determining it's different?

23 MELCHIOR: The pHs aren't that different.

24 CUTLER: PHs aren't, but just visual inspection
25 of stiff diagrams, it's different. It is unique.

1 It's a unique pattern.

2 But how different is different? There's
3 less sulfate, magnesium and calcium.

4 BURIL: I think one other aspect, too, that we
5 were trying to look at prior to coming to the
6 meeting, we were looking at the screened intervals
7 for the individual wells, trying to see whether
8 there were other wells that were screened in
9 approximately the same area and screen depth. From
10 that standpoint, Well 3 is unique. It is about the
11 only one screened at that depth in that general
12 area, which leads me to think that there may be
13 something in terms of the lithology of the area that
14 may be causing this as well that we don't find in
15 other wells simply because the other wells aren't
16 tapping that particular area.

17 It's suspicion only. No way of really
18 verifying it.

19 STRALKA: I think that argument should be
20 presented to the project team and you can make a
21 decision on it. The spatial distribution, the other
22 questions about, as you said, whether it's different
23 water, whether the source may be from a different
24 source, that type of thing, those are all good
25 points that should be discussed, and then the

1 project team can make a management decision as to
2 whether that needs to be followed or not.

3 Chromium I think is already cut and dried.
4 We already have that taken care of. That's being
5 followed.

6 The lead, I guess the lead, again, we'd
7 have to look at that a little closer, look at the
8 absolute concentrations that are detected, the
9 spatial juxtaposition of everything and maybe look
10 and see what is the source of that, whether we can
11 deal with that, whether we need to deal with it
12 because of the concentrations. The absolute
13 concentrations aren't so high as to be causing real
14 levels of concern.

15 Let's see. Just looking at the numbers,
16 you would have to -- the units are all different.
17 I'm trying to go back and forth on this thing.

18 BURIL: Which one are you looking at?

19 STRALKA: The PRGs are in micrograms parts per
20 billion, or are they? I'm just looking at the lead.
21 Your maximum detect is 25 parts per billion. And
22 then I'm seeing the PRG is listed as 6.3 parts per
23 billion?

24 RENZI: No. That's the ratio.

25 CUTLER: No. The screening ratio.

1 BURIL: That's the ratio.

2 STRALKA: That's the ratio.

3 NIOU: 4. PRG, 4.

4 STRALKA: I was looking at the table wrong.

5 So you're getting 25 and the PRG is 4.

6 Because 4 is the national average in drinking water.

7 Again, the PRG is tap water, not at the source, or

8 what's actually coming out of the tap. The

9 assumption is that there shouldn't be any lead in

10 source water.

11 So again, you have a high detect here.

12 Again, look at the juxtaposition. Is it associated

13 with other contaminants that we're already going to

14 deal with, or we're going to have to deal with

15 because of their concentration, and has this become

16 a moot point? It's kind of like an also ran,

17 depending on where we found everything else.

18 So at this point it really looks like

19 there's chromium and lead. The arsenic it sounds

20 like you can make a pretty good case about that.

21 You've already looked at that. The lead you may

22 have to spend a little more time with just to try to

23 define its distribution.

24 BURIL: Is there anything that you can offer as

25 far as a suggestion as to how far we should take

1 that, or a suggestion as to what we should be doing
2 at this point, given the data that we have
3 available?

4 RENZI: He just went through it with the
5 arsenic.

6 STRALKA: It would be the same sort of questions
7 you asked about the arsenic. You would do the same
8 sort of thing with the lead. You're going to follow
9 that same logic train.

10 Now, it may take you in different branches
11 depending on the outcome of each one of those as you
12 ask the questions. But you're going to go down that
13 flow. Essentially you're looking for what are the
14 sources, what's the distribution, temporally are we
15 getting consistent hits in the same wells at the
16 same screening intervals, is it all over the place,
17 can we make sense of it. Is it, oh, by the way, we
18 also have high PCE or carbon tet, or whatever, in
19 this well as well, and are we going to have to deal
20 with that, so in the process of dealing with that
21 we'll deal with the lead as well; whatever. I mean,
22 that type of a -- you're going to go through that
23 kind of a logic train.

24 BURIL: To try and answer the question that we
25 have before us now, is it reasonable for us to

1 continue to analyze for these constituents in the
2 groundwater?

3 BISHOP: I can jump in. From my point of view,
4 if I'm reading this table correctly, your highest
5 hit is above the federal MCL for lead.

6 So if any treatment that you do for VOCs,
7 if you're going to utilize that water, then the lead
8 is of a concern even right there because it's above
9 MCL.

10 So the distribution and concentration,
11 spatially as well as temporally, is very important.
12 So yes, you're going to need to be monitoring for
13 that throughout your quarterly RI.

14 STRALKA: It looks as though the arsenic you can
15 maybe make a reasonable argument that you don't need
16 to do arsenic.

17 But again, chromium, as we talked about,
18 chromium we're going to have to continue to monitor
19 for, and it looks as though lead. So it looks like
20 between the lead and the chromium are the two you're
21 going to have to follow.

22 It's a good point that Jon was bringing
23 up, too. Even if we're going to treat this water
24 for its organic contaminants, once you pump it up
25 and you treat it for inorganics, you can't do

1 anything with it if it's above the MCL. I mean,
2 you're going to have problems discharging it to the
3 surface. You're not going to be able to reinject it
4 because it's got contamination levels in there that
5 are unacceptable. You're not going to be able to
6 pump it into the distribution system. You're not
7 going to be able to use it for irrigation. So
8 you've pumped it up and you got rid of the VOCs, but
9 now you're stuck with it. You still got to do
10 something else.

11 ROBLES: At Edwards we cleaned the water and
12 pumped it back into the ground to hazardous waste
13 levels. That was agreed to with the State Regional
14 Board.

15 BISHOP: Right. But you're in a totally
16 different situation here, I think, because this is a
17 drinking water source right here.

18 BURIL: Borderline sole source aquifer.

19 RENZI: I can offer another reason, Chuck, to
20 continue to monitor. I'm just looking at the levels
21 that you do have for the filtered data. They're all
22 fairly low. You have a couple that are elevated. I
23 would suspect that it's one of those things that
24 it's your distribution and how much better can you
25 define that distribution the more data you have.

1 And also over time you may show some trims one
2 direction or the other that you could maybe justify
3 not having to deal with lead down the road when
4 remediation occurs.

5 CUTLER: Or this problem may go away if we'd use
6 our unfiltered results. I'm serious.

7 RENZI: Unfiltered --

8 BISHOP: You can't use unfiltered results
9 because metals hang on to --

10 RENZI: I'm just saying --

11 STRALKA: But, see, this thing is in reverse of
12 everything you would think about. If you're
13 filtering you'd expect all those arguments. You've
14 introduced another vessel. You could have metals
15 binding to the vessel. They could be deemed pulled
16 out. Everything that you know about filtering and
17 unfiltering would suggest that the unfiltered has
18 got to be higher than the filtered.

19 BURIL: That isn't so.

20 STRALKA: This is the opposite case. So there's
21 a systematic error.

22 RENZI: There's something wrong with this
23 picture.

24 STRALKA: And that, I think, needs to be
25 addressed.

1 CUTLER: For some reason, of all the hundreds
2 we've taken, these two filtered samples somehow got
3 impacted more than the unfiltered counterpart,
4 triggering this.

5 STRALKA: That could also, just like arsenic,
6 could also be another argument you can make
7 about --

8 RENZI: There's something else --

9 STRALKA: -- temporally, you only had it twice,
10 we don't know exactly what the problem was, we
11 filtered, look at our unfiltered samples, look at
12 what we've done since then, we may have had this
13 problem with metals associated with it.

14 I mean, sure, it doesn't make sense that
15 your filtered samples would be higher than your
16 unfiltered. And can you repeat that? Is it
17 continuous at a certain well or a certain interval?
18 I mean, if it's not, then, we have reason to
19 question this data and these high points and maybe
20 we don't need to continue to sample for lead.

21 BURIL: What would the agencies expect should be
22 done at this point regarding these constituents?

23 STRALKA: Regarding all metals or --

24 BURIL: However you want to break that down. I
25 don't want to jade your thinking. All, versus some,

1 versus none. I'd like to just hear what you think
2 should be done.

3 BISHOP: From the Water Board's point of view,
4 you definitely need to continue sampling for chrome
5 and lead, and you can make an argument about the
6 arsenic since it's only in one spot. The lead is in
7 multiple spots over time.

8 Now, that doesn't mean that you can't come
9 back with another option to say, you know, well, we
10 went back and we resampled again in these two rounds
11 and we did it with our filtered and our unfiltered
12 and we think it's our filter and this is why. But
13 if you're asking me right now what the agencies
14 think, I think you need to continue sampling for
15 lead.

16 STRALKA: I guess my question was what was the
17 time frame.

18 MELCHIOR: That would be appropriate for all
19 wells?

20 BISHOP: That's correct. Because it's spread
21 all over.

22 MELCHIOR: Or the wells that it has been
23 detected in?

24 BISHOP: No, because the problem with that is
25 then you're just saying, oh, we hit it here once.

1 If the groundwater is moving at all and it's part of
2 the groundwater, you need to make sure it's not
3 moving to some other well that you're no longer
4 sampling it for.

5 STRALKA: We have to do the extent. I guess the
6 point is, on the time frame, if we're talking about
7 our next sampling quarterly event --

8 BURIL: This wouldn't happen until January.

9 STRALKA: Could you, based on the data that you
10 have now, make an argument, go through your argument
11 about lead and sufficiently support your conclusions
12 that lead would not need to be sampled in that
13 round?

14 CUTLER: I think so. We have been sampling on
15 site since 1990.

16 STRALKA: Right. But I think if you have time
17 to do that, to go through that argument and present
18 that argument to the project team, then maybe you
19 can present that and get buy-off before you go out
20 and do your next sampling effort.

21 I would say right now I would continue
22 marching down the path that you're going to be
23 sampling for chromium and lead.

24 BURIL: Let me offer the following, then: If
25 you folks would put that suggestion in writing to

1 us, I'd like to see that in writing because I think
2 that's important to be sure we document the fact
3 this is what you believe is the thing to do.

4 I will, in addition, offer that we will go
5 back and do that type of analysis for the lead and
6 the arsenic in terms of its temporal and spatial
7 relationship, and present our rationale why. We may
8 find we do need to do it, or we don't. Arsenic, I'd
9 say, based on what we discussed today, we could say
10 that we don't.

11 Without taking any more time on that
12 particular issue, I think it's probably better we
13 just combine the two and present it to you as a
14 package.

15 The lead, I don't know. Based on what
16 Mark is telling me, I think we've got some
17 reasonable arguments to present to you that we
18 haven't had time to really develop in the last two
19 weeks since our last meeting. So I think it would
20 be worthwhile to go ahead and develop the data and
21 then present it to the team and go from there.

22 Now, as far as when we would want to
23 incorporate this, if the question really simply
24 comes down to one of lead analyses, as I believe the
25 arsenic is something we can deal with, I feel fairly

1 confident that we could deal with that between now
2 and the scheduled January sampling. And we could
3 meet again at some future time, to be determined,
4 and make a resolution on that issue, if the agencies
5 are in agreement that the other metals that have
6 been identified thus far are not a concern and that
7 we need only focus on the arsenic and lead.

8 RENZI: I would recommend to --

9 BURIL: And chrome. Excuse me. And chrome.

10 CHRISTMANN: Chrome. Yes.

11 MELCHIOR: Another thing, before we come to
12 closure on this issue, would it be possible for the
13 agencies to provide you with the written policy on
14 using unfiltered water for these analyses?

15 STRALKA: That written policy is in a RAGs '89
16 document.

17 BURIL: What was that again?

18 STRALKA: It's in the Risk Assessment Guidance
19 for Superfund, a 1989 document, which is what we've
20 been using as the basis for doing this whole
21 protocol ever since we started.

22 MELCHIOR: That's the source of your --

23 STRALKA: Yes.

24 BURIL: That's great. Thank you.

25 AMIR: Did you want the letter from the Water

1 Board?

2 BURIL: I'm not sure how it works easiest. If
3 the agencies are in agreement, if you'll combine
4 your comments in one letter from whomever, it's fine
5 with me. I'd leave that to you folks to determine
6 how you want to set that one up. We would just like
7 to know that there is concurrence on this approach
8 from all the agencies, and that somehow we document
9 that that concurrence is provided to us.

10 AMIR: You write the letter of concurrence,
11 we'll sign off on it.

12 BISHOP: Great.

13 BURIL: Could you say that again? We couldn't
14 hear you.

15 AMIR: If Jon writes the letter and have a
16 concurrence line at the bottom of the letter, then
17 we concur with the letter.

18 LOWE: I'm confused about what this letter is
19 going to say. Is this letter going to say "We think
20 you, NASA/JPL, need to continue to sample for lead"?

21 BISHOP: Sample for chrome and lead.

22 LOWE: Unless you can show us in this analysis
23 that you're going to do that, because of spatial and
24 temporal patterns, that you don't need to?

25 BURIL: Exactly.

1 LOWE: Would it make sense to wait until you
2 have time to do that analysis first and then we'll
3 come up with a letter about our approach to metals?

4 BISHOP: My approach was going to be that I was
5 going to write a letter saying as we agreed in the
6 past, you did the screening, the screening pulled
7 out arsenic, chromium and lead as being metals of
8 concern, so until otherwise determined, you will
9 sample for these in your quarterly sampling reports.

10 And then you can come back with your
11 response on how you want to address those. But
12 since this is what we agreed to use as our --

13 RENZI: I did want to remind -- my
14 recommendation to Penny is you do this again with
15 the unfiltered data because that's for risk that --

16 STRALKA: Did you do filtered and unfiltered
17 everywhere?

18 RENZI: On most of them.

19 CUTLER: On most. Cyanide and hex chrome were
20 not filtered, but all the other metals were. Title
21 26 metals were collected both filtered and
22 unfiltered.

23 STRALKA: The point that Barbara is making is
24 that we should be looking at the unfiltered samples
25 and doing the screen based on the unfiltered data,

1 with the experience saying that the filtered numbers
2 would always be higher than the unfiltered -- or I
3 mean the filtered numbers would be lower than the
4 unfiltered.

5 BURIL: Unless we're talking about lead.

6 RENZI: I know on some of your preliminary data
7 you did make notes where there were turbid samples.
8 You could certainly point that out in footnotes. If
9 you have numbers in your table that jump out with
10 too high, you could make those comments.

11 CUTLER: Okay.

12 BURIL: It sounds to me like we are in
13 concurrence, then, that a letter will come
14 suggesting that we continue sampling for arsenic,
15 chrome and lead, and that our response to that
16 letter will be generated in whatever fashion we can
17 to discuss whether it is possibly an idea that
18 should be discussed before we implement it.

19 STRALKA: I guess are you going to be able to do
20 this analysis, or can you do this analysis on the
21 unfiltered data?

22 BURIL: I believe so. I don't know that we
23 can't.

24 CUTLER: I don't see why not. We have the data.

25 BURIL: I think it's just a matter of changing

1 the spreadsheet.

2 STRALKA: I think, based on that, assuming that
3 the conclusions are the same on the unfiltered data,
4 I think the letter would go out. But that may not
5 be the case once you go through and look at the -- I
6 mean, the concentrations that you were detecting
7 here were so low that I don't see that would be
8 different, but it may be.

9 ROBLES: Are you stating that if the unfiltered
10 data shows that there are screening assessment
11 concerns, that those would also be included in our
12 sampling?

13 STRALKA: They would also need to go through
14 this arsenic-lead discussion process of we have it
15 in our unfiltered samples at concentrations of
16 concern, we don't have it in our filtered samples at
17 concentrations of concern; why? And following that
18 why, the project team will have to make a decision
19 on whether that's something that you need to
20 continue to follow or not. We have operational
21 history. All those sort of things.

22 BURIL: All right.

23 STRALKA: So again, that same kind of logic
24 train we were talking about for lead and arsenic,
25 but the starting point being unfiltered samples.

1 Since we have that data, we should use that to the
2 extent that we can.

3 BURIL: I'll ask Foster Wheeler to take an
4 action immediately to do that unfiltered sample
5 analysis.

6 CUTLER: Okay.

7 RENZI: I have a question regarding the
8 strontium. It seemed to be pretty -- is that what
9 I'm seeing on here? Looking at the data, it seemed
10 to be detected rather frequently. Is that formation
11 phenomenon?

12 BURIL: As far as we know, it is.

13 CUTLER: It's like barium or zinc. It's all
14 over.

15 RENZI: I didn't have a geologist around to ask
16 at the time.

17 BURIL: Strontium, barium and zinc appear to be
18 very common in the formation up there.

19 ROBLES: Shall we move on, Debbie?

20 LOWE: We covered A and B, both the background
21 groundwater wells.

22 BURIL: Are we in agreement, then, before we
23 leave that, that background sampling at this
24 juncture is not something that we need to consider?
25 Do we have agreement across the board on that?

1 Could we also get that in the suggested letter?

2 BISHOP: I mean, I can put something in that
3 letter. But since we've never asked you for
4 background sampling, I think it's silly just to
5 write a letter saying that you don't have to do
6 background sampling.

7 ROBLES: All right.

8 BISHOP: We've been discussing it in the RPM
9 meetings, but we haven't ever said you need to do
10 this.

11 BURIL: It came up last time. I want to be
12 certain we understand what is going to be expected.
13 If you're comfortable with that, Jon, I have no
14 argument with it.

15 RENZI: I was suggesting it as a way you could
16 eliminate metals from further monitoring was if you
17 could show that they were below background. I was
18 the one that brought up background.

19 BURIL: Right.

20 RENZI: I was trying to find justification for
21 dropping metals from monitoring.

22 BURIL: Okay. Believe it or not, I do know you
23 were trying to help. I do.

24 RENZI: Oh, good. I'm glad you realize that.

25 NAKASHIMA: Also, Chuck, I think it's really up

1 to NASA/JPL whether they want to pursue the
2 background only, because if you do want in your risk
3 assessment to show that these metals here are not
4 any higher than background, or they are background,
5 then when you come up with your remediation, you're
6 not going to want to -- if your risk numbers are
7 lower than background, then are you going to try and
8 clean that up to the risk numbers? Or you want to
9 just -- okay. So it's really up to you whether you
10 want to pursue the background.

11 BISHOP: As I will say again, you're in a
12 slightly different situation here, is that the water
13 that you have underground is adjudicated. You can't
14 pump and dump. So it has to be usable. And the
15 only items here that really are of concern are above
16 action levels. So you can't serve them anyway. So
17 it's not a question of is this, you know, a
18 receiving water issue. You're not really in that
19 arena.

20 ROBLES: Let me clarify this. My understanding
21 is if we did go to background and find they are
22 higher and we pumped this water out, we still would
23 have to treat it.

24 BISHOP: If the groundwater -- the classic
25 scenario is nitrates. You pump the groundwater.

1 You didn't put the nitrates in there. You're
2 pumping for the VOCs. But the use of that water is
3 for drinking water because it's already an
4 adjudicated basin. You've got to clean the
5 nitrates.

6 ROBLES: Then if we use a pump-and-treat system
7 and pump it in the ground to develop a
8 hydrogeological barrier, we're putting it back into
9 the groundwater, we've got to make it cleaner.

10 BISHOP: Now, putting it back into the
11 groundwater is another issue that you may be able
12 to -- putting it back into the groundwater is a
13 different issue. Then you may be able to argue that
14 this was not introduced at the site, we're putting
15 it back where it was so we don't have a loss to deal
16 with in terms of the --

17 ROBLES: Adjudication.

18 BISHOP: -- adjudication. And you may be able
19 to get a waiver. I can't guarantee you that, to
20 the --

21 BURIL: You're talking about, Jon, the situation
22 where we would actually take the water, remove the
23 VOCs and, using your example of nitrates, if the
24 nitrates were higher than what is allowed for
25 drinking water and we intend to send this water

1 directly to a customer to use as that drinking water
2 we couldn't do it even though we didn't put the
3 nitrates there.

4 BISHOP: That's correct. But to be
5 straightforward with you, as I explained in the
6 past, is that an adjudicated basin, you're pulling
7 this stuff out, it makes sense to use it. It does
8 not make sense to try and reinject it back into the
9 groundwater so somebody else can use the energy to
10 pump it out again.

11 So it's --

12 BURIL: I understand the point.

13 ROBLES: There are some legal issues, the
14 federal government being a purveyor of water.

15 BISHOP: No, you're not being a purveyor of
16 water.

17 STRALKA: You're disposing of it after you've
18 done your treatment.

19 BURIL: Lockheed as an example, in Burbank.

20 ROBLES: Where do we dispose it to?

21 STRALKA: You're not putting it in the pipes, or
22 whatever. But that's an issue to determine when you
23 get down to what you're going to do with it.

24 BURIL: That's a different issue.

25 BISHOP: More likely, you have the City of

1 Pasadena or Lincoln, County, or whoever, take over
2 the operation of your treatment plant to provide
3 their water.

4 BURIL: A bridge to be crossed.

5 LOWE: So should we move on and talk about
6 borings in the parking lot?

7 ROBLES: Yes.

8 LOWE: I don't know if Jon or Penny want to
9 begin.

10 BISHOP: Sure.

11 BURIL: Jon, I think you can use the markers on
12 that map without any problem, if you'd like.

13 BISHOP: That would be really scary.

14 BURIL: It should be coated to allow you to use
15 dry markers.

16 BISHOP: I'm not sure I need them, but I have to
17 test this. Okay. Great.

18 I think the primary issue that we want to
19 talk about here is at the discharge drainage area
20 right here at the corner of the substation.

21 Correct on that?

22 CHRISTMANN: Yes.

23 BISHOP: So the proposed boring is essentially
24 right here at the corner. Right there. The first
25 question that we have is how well can we determine

1 the location of that drainage to that corner? We
2 have a fence line in here now and a fence line in
3 there in the past. Is that correct, B.G.?

4 RANDOLPH: That's correct. It's still the same
5 fence that's been there.

6 BISHOP: Do we know where that drainage outlet
7 was and what -- the type of it? I've looked at the
8 aerial photos.

9 RANDOLPH: It's not an aerial photo. There's a
10 U.S. Engineer's map there, surveyor's map.

11 BISHOP: Okay.

12 STRALKA: I guess we have other sources that can
13 define where the outfall of that source was.

14 BISHOP: So here is our --

15 RANDOLPH: Here is the main north-south drainage
16 that existed at that time.

17 BISHOP: So this is coming down to this line?
18 Or this one?

19 RANDOLPH: This intermittent line that comes
20 through here.

21 BISHOP: Where is the substation?

22 RANDOLPH: Right there. That's the point of the
23 substation.

24 BISHOP: So this is the point of the substation.
25 So we're coming down here to here. Okay.

1 RANDOLPH: That point right there is this point.

2 BISHOP: Now, when I look at this map, that
3 looks totally different to me. That looks to me
4 like this used to go here.

5 RANDOLPH: Yes. That's right. The old line
6 came down through here and straight back up this
7 way.

8 BISHOP: But that fence is still the same?

9 RANDOLPH: Yes.

10 BISHOP: That's still that same corner.

11 RANDOPLH: The fence is still -- this is still
12 original fencing in here.

13 BISHOP: So that's still that same corner.

14 RANDOLPH: Right.

15 BISHOP: And the ramps are right here.

16 RANDOLPH: Right. Coming off this way.

17 BISHOP: So looking at that other one, then, it
18 comes right down and ends right at that point.

19 RANDOLPH: This one right here.

20 CHRISTMANN: The bottom line question for us was
21 how confident you were that that boring was going to
22 be in the channel.

23 RANDOLPH: I'm very confident. I've spent many,
24 many hours poring over these aerial photographs with
25 a hand lens and comparing it with maps and other

1 figures that we have.

2 CHRISTMANN: Do you know what the nature of the
3 channel was there? Was it natural or gunite?

4 RANDOLPH: No. It was all natural drainage.

5 BURIL: One at a time, please. If we could keep
6 the volume level up a little bit so we can be sure
7 we get the discussion on the record it would be
8 helpful.

9 B.G., could you kind of go over briefly
10 what it was you showed them and what's been
11 discussed there, just very briefly.

12 RANDOLPH: It is the location where a dark
13 pigment-like material was found in the drainage
14 channel, at which time there was no flow, but it had
15 been reported that the large flows had occurred in
16 the past. "Large," not knowing what that means
17 volumetricwise, we don't know. But it appeared when
18 they washed down their combustion chambers.

19 BURIL: And based on what you've presented them
20 there, you feel very confident you can locate that
21 discharge point coming off the substation that you
22 were discussing?

23 RANDOLPH: Based upon the aerial photographs and
24 the survey maps that we have, I believe we're right
25 in that area. Because it was only discussed as the

1 mouth of the drainage channel where it emptied into
2 the Arroyo at the southernmost point of the JPL
3 facility.

4 LOWE: So what would happen if you put in that
5 boring and based on the log it didn't look like it
6 was a channel deposit?

7 RANDOLPH: It really wouldn't be a channel
8 deposit. It would be an erosional feature.

9 We have no idea. This ground has been
10 turned and turned and turned. We're not sure.

11 BURIL: To follow on that, B.G., even if we hit
12 the spot dead on and analyzed it, the fact that
13 there has been so much soil movement and
14 construction and erosional considerations, and so
15 forth, we may or may not find anything, if there was
16 a contaminant.

17 RANDOLPH: I think the chances are slim to none
18 because the area has been regraded. It was regraded
19 at the time of the original construction to extend
20 the Laboratory to the south. So personally, I
21 believe the chances of finding anything are slim to
22 none.

23 LOWE: Would the State like a few minutes to
24 caucus and take a short break?

25 RANDOLPH: Certainly. Any time.

1 LOWE: I'm asking do we need to, do you want to?

2 RENZI: I was just going to say, you know,
3 thinking about our discussion earlier, if we imagine
4 that those areas we were talking about alternative
5 borings or additional borings, if that area beneath
6 the parking lot has all been graded and regraded,
7 looking for those -- distinction of the channel,
8 we're not going to find those, and certainly not any
9 contamination --

10 CHRISTMANN: How much of the -- how much cutting
11 was there in there? Was it cut and fill? Was it
12 just cut and regraded? Do you have a feel for that?

13 RANDOLPH: Based upon what I can tell from just
14 looking at these oblique aerial photos, there was a
15 pretty good time period that evolved through there,
16 and it looked to me like some of it even had to do
17 with the Geo. Hagen dump. And there was additional
18 grading. They knocked down ridges to compact and
19 rebuild back up. That all had to be reconfigured
20 before they could even start any new construction,
21 even dirt construction.

22 BURIL: B.G., is that one of the areas where
23 they brought in fill to help level it out and
24 compact? Do you know?

25 RANDOLPH: I don't really know, Chuck. I would

1 imagine, judging by what was there in the way of
2 erosional features at one particular point in time
3 and now, the amount of material that's in there,
4 they had to bring in a lot of fill to bring it up to
5 its present grade.

6 BURIL: Given that background information, I
7 have the impression the State had a suggestion in
8 terms of what it was they wanted to have as
9 additional borings. I don't know if that changes on
10 the basis of this or not.

11 CHRISTMANN: Our concern was basically if we
12 weren't sure that we were on the location where that
13 drainage was and we weren't going to be able to be
14 certain based on a single boring, we wanted to base
15 that judgment that we had found it and not found
16 anything on more than one single boring.

17 If you're confident that you're at the
18 right location and you think you can display that
19 with reviewing the lithologies from that boring and
20 you don't find anything, okay, then we can come to
21 the conclusion that we've drilled in the right spot
22 and that you've looked in the right place and that
23 you've not found anything.

24 So you drill there and you're not
25 confident it's the right place and we don't find

1 anything, then that boring does us no good and
2 really doesn't tell us anything.

3 BURIL: I think what B.G. has indicated, from my
4 own experience and knowing what B.G. and Mark have
5 done on the project thus far in locating these
6 things, I personally have an extremely high degree
7 of confidence that he's able to locate this thing.
8 I base that on the fact he's been able to actually
9 poke holes right through some of these seepage pits
10 where he's located them.

11 If that is sufficient evidence for the
12 agencies to accept, that we've located these things
13 accurately, then I'd say we're fine.

14 If you're uncomfortable with that, then I
15 would ask that you let us know what kind of
16 information you would like to have so we know
17 whether we could develop it or not.

18 ROBLES: And how many borings would you be
19 satisfied with.

20 CHRISTMANN: The alternatives we had discussed
21 were either a trench there instead of a boring or a
22 series of borings across where you thought that
23 feature was. And if you can -- the way I thought
24 about it was if you could demonstrate that you hit
25 it with the first boring, fine, you're done.

1 If you put a boring in and you don't think
2 you've hit it, you can't find any evidence that you
3 have hit it, then additional borings to step out to
4 try and locate it and then agree on some number of
5 borings that would say you've made a fair effort,
6 we're not going to make you do it.

7 BURIL: I guess given the history of the site in
8 terms of its rework and regrading and so forth,
9 knowing that an erosional feature is going to be
10 something that will be one of the first things to be
11 regraded and reworked and eliminated, I guess I
12 would ask, other than our best estimate and our past
13 record of being able to locate these things, what
14 other hard pieces of data would you be looking for?

15 ROBLES: How do we prove we've hit it?

16 CHRISTMANN: It's difficult. I wasn't sure
17 whether there was actually a culvert there, whether
18 there was something that you can identify as being a
19 culvert, a gunite line channel, something that would
20 demonstrate to you that you have actually hit that
21 feature.

22 BURIL: From what I remember B.G. saying, it was
23 basically an open-ended dirt channel.

24 CHRISTMANN: That's right.

25 BURIL: So there would be nothing there.

1 CHRISTMANN: That's right. That makes it more
2 problematic. If there was something there to look
3 for and you could say definitively that you've found
4 it, that's a little different than not being able to
5 identify it. That's part of why we wanted to have
6 the discussion.

7 BURIL: You had a suggestion of a trench, which,
8 based on my own understanding of that particular
9 area, would probably not work very well only because
10 of underground utility considerations.

11 B.G., perhaps you might be able to confirm
12 or correct me on that.

13 RANDOLPH: We have an awful lot of concrete
14 construction there for vital facilities that keep
15 JPL functional.

16 BURIL: You mean like a substation?

17 RANDOLPH: Like a substation. All your waste
18 disposal areas. The ramp that goes up and down from
19 the lower level to the storage area, Building 283,
20 305, 311.

21 You do have quite a few underground
22 facilities through there. You also have the
23 stability of the power lines, power poles.

24 You have container storage in that
25 particular area.

1 BURIL: Talking about the big roll-offs.

2 RANDOLPH: You have fire lines, other
3 underground communication. There is a main fire
4 water line that goes through there, plus sewers and
5 storm drains and communications, which with a boring
6 is no problem getting around. With a trench it's
7 not.

8 Again, I thank you for the compliments
9 about being accurate. But I can only go to the
10 accuracy of what was stated in 1948 in a written
11 document by the City of Pasadena Water Department,
12 which was nothing more than a field inspection
13 report based upon the site description that he gave
14 where it was emptying and at the southernmost point
15 of the JPL facility, which was at that particular
16 survey area or the point down at the bottom that's
17 shown on this one drawing, and relating that to the
18 air photo showing what the development of the
19 facility was at that time, which was undeveloped,
20 and comparing it to what occurred two years later
21 after the substation went in.

22 And I'm sure during the substation grading
23 and all around it that you can see that that area
24 was totally disturbed. And it was nothing more than
25 a black surface on the ground, a black coating on

1 the ground. There's not a volumetric or a deposit
2 that had any depth to it.

3 BURIL: So in other words, almost like a coat of
4 paint.

5 RANDOLPH: Exactly. But it would probably be a
6 little bit thicker than that, according to the
7 judging of the written document, what the words
8 were.

9 BURIL: So, then, if we had this, quote, coat of
10 paint, thick coat of paint on the ground and it was
11 reworked dramatically during a construction
12 scenario, it would appear that we have a fairly
13 limited chance of finding anything. I think that's
14 intuitive.

15 BISHOP: I think you're missing the point,
16 though. The documentation shows one event that
17 happened in 1948. That's an indication that there
18 may have been other events. People do not inspect
19 on a daily basis. They do not see -- this is when
20 the inspector came out. They saw an event.

21 At least from our point of view in the
22 regulating community, if we go out and see an event
23 when we inspect it, we assume that event happened
24 quite often. So it's not a question of that one
25 time one thing is what we're looking for. We're

1 looking for a point where discharge has occurred
2 that we now document.

3 RANDOLPH: Well, Jon, I believe you can read the
4 document. It said that they do get discharges here
5 when they wash down the combustion chambers. When
6 they wash down the combustion chambers, it could
7 still distribute as a thin film or a relatively thin
8 film. I don't mean like a thin coat of paint.
9 Maybe a quarter of an inch to half an inch thick
10 over the course of time. Maybe it's just nothing
11 more than carbon. Who knows what? But the thing
12 is, it's gone now.

13 In 1948 was when that was described. In
14 1948 to '49 -- I guess it would probably be
15 somewhere in the neighborhood of either late '49
16 through '50 the substation was constructed.
17 Probably in late '50.

18 BURIL: B.G., let me interrupt you for just a
19 second.

20 I guess, then, trenching, being one
21 alternative, appears not to be something that would
22 be feasible at this particular location.

23 Another alternative that you had a
24 suggestion on would be a series of borings in the
25 area. Can you definitize the number of borings, the

1 depth and so forth that you'd be concerned with?

2 CHRISTMANN: We were thinking make it iterative.
3 Put the first one in. If you find evidence that you
4 were in the channel, if you look at the logs, you
5 look at the cuttings and you think that you're in
6 the right place, then send your samples off, okay,
7 you're done.

8 If you put that boring in and you can't
9 find any evidence that you're in that channel, step
10 out, do two more borings, look at those. And at
11 that point I think we're talking about two
12 additional borings, possibly two additional borings,
13 based on what you find in the field.

14 BURIL: And the distance that you would
15 anticipate needing to move from that central boring
16 outward, do you have a feel for that?

17 CHRISTMANN: Again, that would be your best
18 estimate of how wide this feature was and the
19 possible spread on where it might have actually
20 been. And again, if you're confident that you're in
21 the right place, one might be sufficient and this
22 might all go away with the first one.

23 BURIL: I think those are reasonable
24 suggestions. What I would like to see, though, is
25 that they be put down in a letter to us so that we

1 have them --

2 CHRISTMANN: Sure.

3 BURIL: -- and can be certain that we fully
4 understand what it is that you're asking. And we
5 can take it into consideration then.

6 RENZI: Also in the letter if you can clarify
7 how far out we're talking from --

8 CHRISTMANN: Where --

9 RENZI: I was just thinking if there are a lot
10 of utilities underneath that perhaps closer to the
11 edge of the embankment, since the trench is going to
12 be -- what did you say, 100 feet down below the
13 actual outfall area, the trench down --

14 RANDOLPH: No. We're talking about a different
15 area now.

16 RENZI: It's above that, though, right? Isn't
17 that just above that?

18 BISHOP: Here. You're doing one trench
19 down --

20 RENZI: It's down where that --

21 BISHOP: -- at the existing outfall. Correct?
22 You're doing the trenching near the existing
23 outfall.

24 RANDOLPH: Oh. Right. Right.

25 BISHOP: This is across the parking lot where

1 we're discussing.

2 CHRISTMANN: We don't want to put in the letter
3 and give you a location that you're not going to be
4 able to drill in.

5 BURIL: That's fine. But the number of borings
6 you would anticipate, the depth that you anticipate
7 needing to go to. That kind of thing.

8 CHRISTMANN: Yes.

9 BURIL: The exact locations would be something
10 that we would have to determine in the field.

11 CHRISTMANN: Right.

12 RENZI: Down here, is this where that outfall
13 area is, down -- I was just wondering is this
14 the -- is this the outfall from that area now to
15 that existing drainage?

16 RANDOLPH: No.

17 RENZI: They're separate. I was just wondering
18 if they may have put the culvert in the old drainage
19 before they built the parking lot on top of it. I
20 was just wondering whether they're coincident.

21 RANDOLPH: No. We'd have to go back and go
22 through about a half a dozen air photos here in
23 order to really explain that.

24 RENZI: I was just wondering if you could tie
25 those two samples.

1 RANDOPLH: No.

2 BURIL: No. It's not reasonable at this point.

3 It sounds like we have a direction on
4 that, at least, to get some information from the
5 State regarding it, and we can go from there.

6 LOWE: It's my understanding that the schedule
7 was on hold and in danger of being postponed until
8 this issue is resolved.

9 So can we set some deadlines on these
10 letters? Because it sounds to me like JPL is not
11 even going to seriously consider these options until
12 you have it in writing. So I'd like to, first of
13 all, make sure that these are two separate letters.
14 One letter from Jon that's going to come out.

15 BISHOP: Metals in the groundwater.

16 LOWE: Metals in the groundwater.

17 There's a separate letter from DTSC which
18 will talk about the number of borings. And how long
19 do you think --

20 AMIR: Number of borings, and also in the dirt
21 above MW-12. There are two issues.

22 LOWE: So can we set it up --

23 BURIL: Could we all speak up a little? With
24 the construction going on upstairs it's kind of hard
25 to hear.

1 LOWE: So can we set a deadline for that letter
2 from DTSC? I think it's less urgent to get the
3 letter from Jon. Would you agree?

4 BURIL: Yes. I agree.

5 AMIR: Penny, when do you think?

6 When is our next meeting day?

7 LOWE: I have a meeting for some reason
8 scheduled on August 15th.

9 BURIL: I think that was the original date we
10 decided we would have our tributyl tin information.
11 And then we postponed that by about a week. I
12 looked at my calendar, and I do not have anything on
13 the 15th currently.

14 CUTLER: I think the 23rd is the tributyl tin to
15 everybody.

16 BURIL: Right. We started off on the 15th and
17 then postponed that to give an extra week, and so
18 forth.

19 LOWE: I have a meeting also scheduled for
20 September 18th.

21 BURIL: That is the next one that I have on my
22 calendar.

23 Those were set after you left, Judy.

24 NOVELLY: We set one for the 23rd?

25 BURIL: No. Only to have the data complete on

1 tributyl tin.

2 CUTLER: And there was a comment whether that
3 one should be a face-to-face or not. So that was up
4 in the air.

5 LOWE: There was side comment from Jon that he
6 won't be in the L.A. area on the 18th. And if it
7 was a face-to-face, Jon would have to tie in by
8 phone.

9 Or alternatively, everyone is invited to
10 come up to San Francisco.

11 BURIL: That's a nice time of year. It might be
12 good.

13 AMIR: So we can send the letter out by the 9th
14 of August.

15 BURIL: So you'll have a letter to us by the 9th
16 of August?

17 AMIR: We'll send it out from the Department.

18 BURIL: If you would fax it to us, that way we
19 know we'd get it on that date.

20 AMIR: Okay.

21 BISHOP: So at that point, on the 9th you'll get
22 this proposal and then you'll start looking at it.

23 BURIL: That's basically it, yes. We'll want to
24 try and move on that as rapidly as possible.

25 BISHOP: Can I make a suggestion that you start

1 thinking about your response, since we've already
2 said what these two letters are going to say.

3 BURIL: Certainly. I can certainly do that.

4 NAKASHIMA: The one issue, though, was
5 contingent upon the unfiltered results in the
6 screening.

7 BURIL: I understand.

8 CHRISTMANN: That's Jon's letter.

9 BURIL: That's Jon's letter. If those
10 unfiltered samples create new problems through the
11 screening, then we've got to re-evaluate that. I
12 agree with that.

13 LOWE: So, Jon, is that clear that your letter
14 will also state that JPL should redo their screening
15 risk assessment using the unfiltered results?

16 BISHOP: Sure. It wasn't going to, but sure it
17 will.

18 BURIL: Why not.

19 LOWE: Although JPL is not going to wait until
20 they get that letter before they --

21 CUTLER: We're going to --

22 BURIL: My instruction stands. Go for it.

23 CUTLER: We'll do whatever you said.

24 BISHOP: I want to know if you serve filtered or
25 unfiltered water before I make this decision.

1 BURIL: Jon, the answer is yes.

2 BISHOP: That's what I thought.

3 LOWE: So are we moving on to the next item?

4 ROBLES: Yes.

5 RENZI: Oh, I have a question that came up in
6 our discussion. I'm not sure if I should try to tie
7 it in with this one. Or are we going to talk
8 about -- oh. I'm sorry. I see the next item.
9 Additional sampling. I had skipped down to JPL
10 questions.

11 Go ahead.

12 LOWE: I throw that open to the State. It was
13 my understanding from earlier conversations that
14 there was additional information that DTSC is
15 looking for in the Arroyo that's not sampling
16 related.

17 BURIL: Again, please, if you would, speak up.
18 This construction is really difficult to hear over.

19 LOWE: That's more like usage related. Do you
20 guys want to elaborate on that?

21 CHRISTMANN: We were talking about where there
22 might be sediments in the Arroyo that we would
23 target for sampling. But what we wanted to know
24 before we even got into that discussion was what was
25 the history of the sediments that accumulated behind

1 the dam, how often were they removed, has that
2 material been removed on a regular basis, and if it
3 has been, that's where we would be looking to
4 sample.

5 If that's all been removed, there's
6 nothing there to sample and the issue goes away.

7 BURIL: I can start from the most recent
8 history, and that is that they removed approximately
9 a quarter of a million cubic yards from the base of
10 the dam last year. That is gone. I have absolutely
11 no idea where it went, as this was done under the
12 auspices of Flood Control.

13 CHRISTMANN: Right.

14 BURIL: What they did with it we have no idea.

15 Prior to that, I have no definitive
16 knowledge. However, based on my conversations with
17 the folks in the City of Pasadena and a couple of
18 folks in the Flood Control District, that particular
19 basin had not been cleaned out for a number of
20 decades prior to that time.

21 CHRISTMANN: Okay.

22 BURIL: That's all we have.

23 CHRISTMANN: Do you have a feel for, when they
24 did the removal of the materials from there
25 recently, how far down they went? What they went

1 down to? Were they down into the cobbles and
2 boulders and lag deposit below there?

3 BURIL: No, I don't believe they were, but I
4 couldn't tell you that for certain. They were doing
5 it during a time of year that the Arroyo flooded a
6 few times during their efforts. Exactly what
7 happened, what progress they made and lost during
8 those type of events I couldn't even begin to tell
9 you.

10 There is an individual I can give you the
11 name of if you're interested in contacting him to
12 get that information. His name is Charles Thomas.
13 He is the former executive director of the
14 Hahamongna project.

15 I can give you the current executive
16 director's name as well. His name is Tim Brick.
17 Both of these gentlemen have been in contact with
18 JPL, Charles more so until he was removed as
19 director recently, not of his own choosing.

20 And they may be able to tell you a little
21 bit more about the actual excavation. I tried to
22 monitor it, but without being part of the Hahamongna
23 folks and the construction team and so forth, most
24 of my monitoring was done from the bridge across the
25 way from it. So I really didn't have opportunity to

1 get down there and really look.

2 I do know that they do want to establish
3 that as some form of a water feature in the park
4 eventually. And I believe that the construction
5 that's going on that you see as far as gravel
6 operations and so forth in the Arroyo now are
7 associated with a modification of the dam to allow
8 it to come up to appropriate seismic standards and
9 basically be allowed to hold water.

10 Beyond that, I really don't have anything
11 more than hearsay. And even what I've given you is
12 somewhat thirdhand.

13 CHRISTMANN: Okay. Do we want to see what we
14 can get from him?

15 NAKASHIMA: Yeah. I'll see what information we
16 get from the City.

17 BURIL: I believe I have both their business
18 cards. If you'd like to swing by my office I can
19 give you their phone numbers.

20 LOWE: Was there more information you were
21 looking for in the Arroyo, or is that it?

22 CHRISTMANN: I think that was basically it. We
23 basically wanted to know if there were any sediments
24 there that had been there a long time that would
25 have collected behind the dam. If they're all gone,

1 then there's nothing for you to sample even if we
2 want you to sample.

3 RENZI: I did have one question. It's not
4 related to downstream. But as we were discussing
5 earlier, B.G., we went back over our walk this
6 morning, and there was one outfall area.

7 I looked back at the descriptions, the
8 reports. There was the one report of the discharge
9 that was north of Building 103. That was right
10 after there were the two pipes that came out. It
11 looked to me like the one sampling point that you
12 had was below Building 103. I didn't know if -- I
13 had just noticed this.

14 RANDOLPH: They mentioned something about like a
15 tar-like substance that didn't go off the property
16 or into the Arroyo, that just ponded right there.

17 RENZI: Yeah. Has that area ever been
18 investigated?

19 RANDOLPH: No. Only with the monitoring wells
20 that are close by.

21 RENZI: We didn't get a chance to talk about
22 this. But since it's up now, do you think that's an
23 additional sample location? I don't know if you
24 wanted to do --

25 BURIL: I would suggest that, again, rather than

1 think about soil sampling locations of that nature,
2 in particular since we're talking about an area that
3 is extremely difficult to access with any equipment
4 that's capable of doing it reasonably, that we look
5 at what we've got already in terms of soil gas, soil
6 samples and groundwater samples.

7 My own thought being that when you look at
8 those things and you remember the fact that this
9 event happened a great number of years ago, that had
10 there been a real concern in terms of the volume of
11 contaminants that may actually create a problem,
12 that in one of those media that we've already
13 sampled I would have expected to see something. And
14 we have seen nothing.

15 BISHOP: But the question is: Are you actually
16 sampling anywhere near that point?

17 BURIL: I believe we are, if I'm understanding
18 the proper location.

19 RENZI: I would -- I would -- I would be
20 concerned -- apparently it was fuel related, but
21 also said it was a black, tarry material. So I
22 would be concerned about not things that are
23 necessarily VOCs that after 50 years we wouldn't
24 expect to find on the surface, but things like the
25 PAHs or metals, possibly. But I would be looking at

1 combustion byproducts, PAHs, dioxins.

2 BURIL: The PAHs are ones we have sampled for in
3 each of those things and, best of my knowledge,
4 correct me, guys, if I'm wrong, but we found
5 nothing.

6 RENZI: Have you sampled in this area, this
7 outfall area?

8 RANDOLPH: No, we have not.

9 BURIL: Not in exactly that area, no. But in
10 areas near there.

11 RENZI: I just -- we just uncovered this a
12 little before as we were comparing the locations of
13 the outfall from the sampling points.

14 BURIL: I guess what we would request, then, is
15 that as part of this same letter you identify this
16 as an additional concern. Tell us what it is that
17 you believe is necessary, and let us take a look at
18 it.

19 BISHOP: My memory and recollection was, when we
20 discussed this in January we discussed that we would
21 have investigation of each of the documented
22 discharge points along -- is that correct?

23 BURIL: I think it was document discharge points
24 that we could access and verify at the time, verify
25 their locations.

1 BISHOP: So somehow we just skipped this one.

2 BURIL: It may be, Jon. I don't know. It may
3 be.

4 ROBLES: Are you ready to move on?

5 LOWE: Are we ready to move on?

6 NAKASHIMA: We'll include that in the letter.

7 BURIL: Good. Thank you.

8 LOWE: So the last item on the agenda is that
9 NASA/JPL sent out a list of questions that they had.
10 I drafted some responses from EPA's
11 perspective.

12 BURIL: Thank you again for that.

13 LOWE: The State didn't have a chance to see
14 this until today. I think I put one on your pile,
15 Barbara.

16 RENZI: Yeah. I found it next to Jon. I didn't
17 see the questions until yesterday.

18 LOWE: I don't know if people think it's worth
19 going through these one by one now or if you want to
20 table this for the next meeting.

21 BURIL: I would like to hear maybe a little
22 explanation on some of these. A lot of these go to
23 issues that are going to be coming up not only in
24 the near future but in the long-term future as well.
25 I'm sure you can read between the lines that we're

1 concerned about cleanup levels. We're concerned
2 about how cleanup levels are established, and so on.

3 Given what we have here, if you could
4 maybe walk us through a couple of the questions. I
5 guess the first one I'd like to know is that we have
6 reached consensus regarding the risk assessment
7 technique and requirements for JPL, as all the
8 sampling that we're talking about today is being
9 driven by the risk assessment and the concerns with
10 data to support that risk assessment.

11 So if we have consensus on this approach
12 and with the data that we are collecting as being at
13 least at the outset deemed adequate, depending upon
14 what we find, of course, then I think I'm satisfied
15 with the answer. If there are still concerns
16 between the agencies regarding the ultimate
17 technique and methodology of conducting the risk
18 assessment, then I'd like to be sure that we
19 understand what those are.

20 STRALKA: I don't think there's any difference.
21 I guess I don't -- the only question we had was with
22 the screening procedure. And once you get past the
23 screening procedure, the risk assessment is all
24 following the same guidance.

25 BURIL: Is that -- okay. Then I just want to be

1 sure that we understood that.

2 ROBLES: They are nodding their heads. Our
3 recorder can't write that.

4 BURIL: Yes. I understand.

5 The risk assessment being driven by
6 criteria other than MCLs.

7 This one was a question that we were
8 struggling with, quite honestly, because we weren't
9 sure how we were going to establish a standard that
10 is lower than an MCL, and then also how would we be
11 dealing with treating to below MCLs.

12 I guess one of the questions that I have
13 in maybe concept, I guess is the way to put it, is
14 that if we take water out of the ground and we treat
15 it for whatever contaminant that there is and we
16 treat it to the, quote, accepted MCL for that
17 contaminant and yet the risk assessment says that
18 there is still a risk from that level, it strikes me
19 as confusing as to what we do at that point. That's
20 where I'm not certain what's going to happen.

21 BISHOP: Can I jump in here. I think you're
22 confusing two different issues here. Talking about
23 safe drinking water level, treating to that is one
24 thing. Talking about what you're cleaning the
25 aquifer to is a different.

1 In general, the State has an
2 anti-degradation policy, which means you are not
3 allowed to degrade the waters of the State.

4 BURIL: Okay.

5 BISHOP: The waters of the State are nondetect
6 for volatile organic compounds. So in general,
7 you're not allowed to degrade the groundwater of the
8 State.

9 LOWE: This was an issue that went to formal
10 dispute at both Mather and George over reinjection
11 standards.

12 Like Jon said, you're confusing two
13 issues: One, your cleanup standard, and the second
14 is your treatment standards.

15 Your cleanup standard is what is allowed
16 to remain in the groundwater when you're done with
17 your pump-and-treat system.

18 The second is your treatment standard, and
19 that's when you pump it up and put it through your
20 air stripper. Then your treatment standard has to
21 do with what you're doing with your groundwater
22 after that. And it sounds like what JPL would like
23 to do is to reinject that groundwater back into the
24 ground.

25 BURIL: That's one possibility.

1 LOWE: Now, if you were going to reinject that
2 groundwater back within the plume, then MCLs is
3 acceptable. But if you're going to -- which is
4 usually the more likely scenario. If you're going
5 to reinject that outside of the plume and use it for
6 containment purposes, then you're reinjecting into
7 clean groundwater. And with the State's
8 anti-degradation policy, then your treatment
9 standard has to be nondetect.

10 Did I just lose you?

11 BURIL: No, no. I follow you completely.

12 ROBLES: That's very clear.

13 BURIL: That's very clear.

14 ROBLES: It means there is no way we're going to
15 clean the water because it's impossible to clean up
16 to those levels. There's no technology to do
17 nondetect on some of this stuff.

18 LOWE: To clean up VOCs to nondetect?

19 BURIL: If we deal only with VOCs.

20 BISHOP: Yes, you can.

21 STRALKA: Pretty simple.

22 BURIL: If you deal only with VOCs, yes. If we
23 get into situations where we're talking about lead
24 at these micro levels and the arsenic at these micro
25 levels, then I would say that we have a concern.

1 BISHOP: Then we may be talking about a
2 different -- I was talking about nondetects for
3 VOCs. There is a detectable amount of lead in
4 groundwater.

5 CHRISTMANN: That's where your --

6 BISHOP: Then you're going to have to determine
7 what is the basin plan standard for lead in the
8 groundwater, which there probably is not one.

9 BURIL: There isn't.

10 BISHOP: Then we have to go into an analysis
11 like what is the natural occurring lead, if there is
12 any. If there isn't any, then you're back to the
13 same situation. You can't reinject into clean water
14 dirtier water.

15 ROBLES: So you're saying nondetect for VOCs.

16 BISHOP: Yes.

17 BURIL: I can go to my computer and I have a
18 CD-ROM that says all this stuff, calls out all the
19 regs and tells me what the MCLs are.

20 Where are the clean-up standards that
21 you're describing as needing to be cleaned up to?
22 Is it something that says it is nondetect?

23 BISHOP: All you have to look at is the State
24 Board Resolution 9249, which is the anti-degradation
25 policy, which means you cannot contaminate, you

1 cannot make the waters of the State more degraded
2 than they already were.

3 BURIL: I guess one other question is, just to
4 try to nail down an understanding of how a number
5 might be arrived at --

6 LOWE: Again, I think we're --

7 RENZI: That's for reinjection.

8 BURIL: I need to ask a question, if I could,
9 please, because this is one I had personal
10 experience with, and it was very painful.

11 I designed a treatment plant once upon a
12 time, and I had a nondetect as a treatment standard.
13 I treated to that. It was in the parts per million
14 range, which cost us a lot of money. The analytical
15 technique improved for that contaminant, dropping it
16 to parts per billion. We spent a lot of money to go
17 after that. And the analytical technique improved
18 again and we spent even more money.

19 By the time I left, it had increased by a
20 factor of 10 to the third removal because we went
21 from parts per billion to parts per quadrillion.

22 This is what I'd like to try to
23 understand, is how these things are set and then
24 maintained.

25 ROBLES: What do you define as "nondetect"?

1 BISHOP: Nondetect is as far as you can detect
2 it, period. If the analytical changes, it changes.
3 Nondetect, you are not -- see, we are not talking
4 about meeting an MCL for drinking water standard.

5 BURIL: No, I'm talking about meeting your
6 cleanup standard and how that's established.

7 BISHOP: Okay. Wait. Wait. You got to
8 remember what you're talking about. Are you talking
9 about coming out of your treatment plant?

10 If you're trying to determine what level
11 you can turn off your treatment plant at, when the
12 aquifer is at a stage where you no longer have to
13 treat, that is usually considered the cleanup
14 standard. If that's what we're talking about, in
15 general, that is nondetect.

16 You can't impact the resource of the State
17 and be considered that that's fine.

18 Now, that's just in general. There is the
19 practical aspects to can you actually clean an
20 aquifer to that level. But what you're talking
21 about before is what's coming out of your treatment
22 plant. That's a different issue.

23 LOWE: Typically your discharge standards out of
24 your treatment plant are established in the ROD. I
25 can give you examples of that.

1 BURIL: That's fine. All right.

2 Let's focus on the one question that I
3 think we're going to face first, and that is the
4 discharge standard. That's what I was talking
5 about, is a discharge standard here, to make sure we
6 talk about the correct semantics.

7 BISHOP: If your discharge standard is to a
8 drinking water source, you have to meet the State
9 health limits for drinking water. Right?

10 BURIL: Which would be?

11 BISHOP: MCLs.

12 STRALKA: MCLs. If you're pumping it into a
13 distribution system, if you're giving it to Pasadena
14 Water, you've pumped it up and treated it, you've
15 got to meet MCLs.

16 ROBLES: But if you're going back into the
17 aquifer, it's got to be nondetect.

18 BISHOP: Well, you got to --

19 LOWE: Nondetect when it's outside of the plume
20 area.

21 CUTLER: So you're saying the cleanup, say this
22 arsenic plume, just as an example. We would pump it
23 out, it meets MCLs, we can just give it to a water
24 purveyor --

25 BISHOP: Wait. Now you're talking about

1 arsenic. Arsenic may be naturally occurring and
2 it's below MCL. You can put it right back in. I'm
3 talking about manmade, volatile organic compounds
4 that are added at your site.

5 BURIL: I understand the distinction. I
6 understand the rationale behind the distinction.

7 I guess what we'll ultimately come up
8 with, then, is a management decision as to whether
9 or not --

10 ROBLES: It's a treatability issue.

11 BURIL: -- we dispose of the material to someone
12 who can accept it at MCLs or a place that requires
13 it at something else.

14 ROBLES: Right. It has to be in the feasibility
15 because it's going to be a life cycle cost issue,
16 and that's the bottom line.

17 BURIL: At least part of it.

18 Okay. I understand that a little better.

19 NIOU: I think the risk screening at the
20 beginning is not only for the treatment of
21 groundwater. It's actually to determine whether a
22 chemical is a COPC or not. And therefore, we'll
23 decide later whether that needs to be cleaned or
24 not. That's for the risk screening to begin with.

25 RENZI: The risk assessment is at the beginning

1 of the process. Groundwater is contaminated.
2 What's the risk associated with that contamination?
3 And that risk estimate becomes a piece of
4 information by which you're going to make your risk
5 management decisions.

6 And it could be used for do we need to
7 remediate the aquifer. We need to remediate the
8 aquifer. How are we going to remediate the aquifer?
9 Now that we've extracted the water and treated it,
10 what are we going to do with it? You can use that
11 information in all those steps. It's a
12 decisionmaking tool. But it's -- it's done, you
13 know, up front. It's just another one of those
14 considerations like nondegradation.

15 People often assume. I've come to
16 meetings where they always assume the risk is always
17 going to dictate, it's going to be the most
18 conservative thing. I said, well, if you're in a
19 groundwater basin where they are adamantly holding
20 to that nondegradation and to background, those
21 levels may be more conservative than a risk.

22 BURIL: I understand.

23 CUTLER: That can even apply to manmade, say
24 TCE. We have degraded it. It's at 4 parts per
25 billion. We can pump it out of the ground, give it

1 to the water purveyor without doing anything to it
2 because it's below an MCL.

3 BISHOP: Right.

4 CUTLER: So it can be related to --

5 RENZI: And then it may pose a certain risk.

6 BURIL: You're beginning to sound like Lockheed
7 now.

8 CUTLER: Does this really make sense, I guess is
9 what Chuck is saying.

10 BISHOP: It may not make sense to you on the
11 side of being the person who has to remediate this.
12 But on the side of the resource that you impacted
13 with your operations, do you have a right to just
14 impact that and leave that as a contamination which
15 in 15 or 20 years may be --

16 ROBLES: That's a good point.

17 BISHOP: So that's why the -- that's the basic
18 policy.

19 CUTLER: My point I guess, too, is, is it
20 impacted if you can drink it? If you can pull it
21 out of the ground and sell it to my next-door
22 neighbor --

23 BISHOP: Because you're just assuming that the
24 standards that we have today are the standards that
25 will be there forever.

1 CHRISTMANN: There's also another problem. You
2 put 4 in. The next guy downstream puts 4 in. Now
3 it's above an MCL, if everybody puts additive all
4 the way downstream. So you can't assume that you
5 have the right to put contaminants into the water.

6 RENZI: You have to remember the stakeholders
7 that went into making the MCL.

8 BURIL: I understand the distinction between a
9 use and a resource management, which is really what
10 you're talking about.

11 BISHOP: Right. That's exactly right.

12 BURIL: I understand the distinction. I can
13 respect that and, quite frankly, I support it.

14 I guess the one thing we're trying to
15 understand is how those distinctions and so forth
16 will ultimately apply here. And I don't think that
17 there's really a point in time in this discussion
18 that we're going to come to resolution on that.

19 ROBLES: It's a clarification.

20 BURIL: I personally have enough information now
21 to understand your distinction. I think that's
22 adequate for the time being.

23 BISHOP: You should also recognize the other end
24 of that is that is the -- this is the goal. But you
25 have to also recognize the practicability of

1 actually cleaning an aquifer to that level. That's
2 where you come to -- I think it's in here as the
3 TEF.

4 ROBLES: Right. That's number 3.

5 BURIL: Right. That's fine. In fact, I've read
6 that. I think that number 2 and number 3 tend to go
7 along with each other. I don't think we need to
8 discuss this any more at this point because I don't
9 think that it has any bearing that would be germane
10 to the discussion we've had.

11 Number 4 I'd like to try and understand a
12 little better, the position regarding unknowns as
13 identified by laboratory analyses and what happens
14 with these and how they are dealt with in terms of
15 risk assessment, and so on. This is one that I
16 think, Debbie, you initially had as a
17 to-be-discussed one. I see now you've got a little
18 more information on it.

19 LOWE: Yes. Like we talked about earlier, I
20 think this will be a more productive discussion if
21 we all have our chemists in the room. So I've made
22 a commitment to try and set up a conference call in
23 the near future, and I'd rather talk about it in
24 that forum than here today.

25 ROBLES: Okay.

1 LOWE: I've made a commitment of the resources
2 to have someone in my staff look at it in order to
3 try and resolve this issue.

4 But other than that, I'm not ready today
5 to say exactly what needs to happen with this. I
6 mean, it's going to depend on what the analysis
7 shows. If we agree with you that, you know, most of
8 these were in the method blanks and maybe they
9 aren't really there, then maybe this whole issue
10 goes away. I mean, I think we need to get our
11 chemists in the room and talk about it, or on the
12 phone.

13 BURIL: All right. That's fine.

14 ROBLES: 5.

15 RENZI: Can I just add to that just to reiterate
16 what Dan said earlier in terms of --

17 I know Chuck asked this last time, "Well,
18 how can you do risk assessment if you don't know
19 what it is?" Sometimes you can narrow it down to
20 groups of chemicals. At other sites where they have
21 a lot of ticks or unknowns -- "unknowns." Typically
22 unidentified compounds. They'll use a surrogate for
23 the group. They will take a chemical that we know
24 the toxicity that has a similar structure. There's
25 a whole process that's used. It's called the --

1 BURIL: I understand the process. I guess the
2 concern that I have, going back to my own
3 experiences, where you use surrogates that may or
4 may not have similar toxicity as what it is that's
5 actually there that you can't identify and you don't
6 know that, only because it's unknown.

7 I'll use an extreme example only because
8 it's one I had a little experience with, and that
9 was in benzodioxins and benzofurans. Structurally
10 they look an awful lot alike. But when you get into
11 something where you're looking at pieces of them and
12 you begin to compare, say, 2378 tetrachloro compared
13 to an octochloro, one is doggone near inert. The
14 other is one of the most toxic compounds known to
15 man. And how you make that distinction on an
16 unknown is what I become a little more concerned
17 with.

18 RENZI: It's a conservative approach.

19 STRALKA: It's not a problem.

20 RENZI: But it's better than ignoring it.

21 STRALKA: You can do it just as you did before,
22 as it was done before, as we looked at the most
23 toxic. That suggested that based on a programwide
24 that that was not a prudent course and that there
25 was a lot of money being spent on that and that we

1 needed to fund research to look at the individual
2 components. And individual components were looked
3 at. There was internationally a large body of data
4 collected on that. And toxicity equivalent factors
5 were derived for each of the different components.
6 That was on a large scale.

7 BURIL: Yes.

8 STRALKA: Here at JPL we already know, as far as
9 groundwater, we already have significant
10 contamination. As far as what feasibility is going
11 to be done about that is the question.

12 Now, these unknowns or tentatively
13 identified compounds are going to be also rans, and
14 it will be a question of will our treatment train,
15 whatever that is, or our ultimate decision, will
16 that also, indeed, take care of those unknown
17 compounds as well, whether they're toxic or not.
18 You can make the assumption they are. But we
19 already know the ones that we have, that we've
20 already identified, are going to require us to do
21 something. So these other things are just going to
22 be also rans and we just have to make sure that
23 whatever that something is will be able to take care
24 of those other ones as well.

25 BURIL: I think we probably are in a position of

1 being able to talk with our chemists.

2 Peter needs to leave.

3 (Discussion held outside the record.)

4 BURIL: Real quickly, then, to finish off these,
5 I think 5, 6, 7 we've got.

6 LOWE: Before Peter leaves, let's schedule the
7 next meeting.

8 BURIL: Do you know your schedule?

9 ROBLES: Yes.

10 LOWE: We're getting a letter from DTSC on
11 August 9th. So let's schedule something for soon
12 after so we can talk about it if JPL has any
13 questions. Also, hopefully we can have the revised
14 risk screening on the unfiltered samples.

15 BURIL: To get everything together and have us
16 have ample opportunity, not ample, but enough
17 opportunity to review that, I'd say we're looking at
18 after the Labor Day holiday.

19 BISHOP: That's the 30th?

20 ROBLES: That's too far.

21 BURIL: I'm not here the last week of August.

22 BISHOP: How about the 16th?

23 ROBLES: I'd like the 16th, personally.

24 MELCHIOR: The 6th?

25 ROBLES: 16th.

1 LOWE: Is the 15th out of the question?

2 ROBLES: The 15th I'm going to be at Edwards. I
3 have a meeting.

4 BISHOP: Actually, I can't make the 16th.

5 BURIL: I remember we went through this before,
6 guys. That's why I'm saying after Labor Day.

7 LOWE: Where is your calendar?

8 ROBLES: Debbie, I can make it the week of the
9 12th, except for the 15th, and the week of the 26th
10 any time during the week, but not the week of the
11 19th.

12 BURIL: The week of the 26th is out for me.

13 LOWE: Okay. 12? 13?

14 AMIR: Are we talking about August or September?

15 LOWE: Yes.

16 AMIR: Okay. August.

17 MELCHIOR: Chuck, I'm not sure we're going to be
18 able to get it together within a day.

19 BURIL: That's what I wanted to hear.

20 RENZI: It's only two weeks. Less than two
21 weeks.

22 BURIL: It's less than two weeks for us to pull
23 everything down and generate all this stuff.

24 MELCHIOR: It's not quite enough time.

25 BURIL: I agree. That's why I indicated that

1 after September 1st is probably the more likely
2 candidate.

3 MELCHIOR: How about September 4th?

4 LOWE: No.

5 NAKASHIMA: What about the 23rd? I mean, we
6 already have a meeting scheduled for that day.

7 BURIL: No. That's just a due date. That's not
8 a meeting.

9 NIOU: That's a due date.

10 NAKASHIMA: Oh. That's not a meeting.

11 LOWE: Can we set up a conference call to make
12 sure everybody has gotten DTSC's letters?

13 BURIL: That's a good idea. How about a couple
14 days immediately after the 9th at least to know
15 we've got things, we understand what's been
16 presented.

17 ROBLES: Week of the 12th any time.

18 LOWE: Week of the 12th any time for me also.

19 RENZI: I'm not available on the 13th. But I
20 don't have to be if you're just discussing --

21 MELCHIOR: How about the 14th?

22 ROBLES: The 14th would be perfect.

23 BURIL: That is fine.

24 MELCHIOR: 14th. How about 10:00 o'clock?

25 LOWE: 14th at 10:00 o'clock.

1 AMIR: 14th is fine.

2 LOWE: 10:00 o'clock our time.

3 MELCHIOR: We have agreement on that?

4 BURIL: 14th, 10:00 o'clock. Going once, going
5 twice.

6 Cast in stone.

7 LOWE: Then everybody knows we have either a
8 conference call or a meeting scheduled for September
9 18.

10 BURIL: Correct. That, I thought, was a
11 meeting. But we do have that, yes.

12 Okay. Real quickly, then, just to try
13 and --

14 (Robles departed.)

15 BISHOP: I just want to make sure I understand
16 about this. So you're going to receive the letters
17 from the Water Board and DTSC on the 9th.

18 BURIL: By the 9th, yes.

19 BISHOP: We're going to talk about them on the
20 14th.

21 BURIL: 14th, and make sure we understand that
22 everything on there --

23 BISHOP: But you're not going to be committed to
24 actually responding to them on the 14th.

25 BURIL: No. That's not something we can do that

1 fast, no.

2 LOWE: But on the 14th you will tell us how long
3 it will be before you will have a response and what
4 form that response will be in.

5 BURIL: I can tell you we'll do our best.
6 Without Pete being here to tell me that is
7 absolutely what he is going to agree to, no, I
8 can't. But I will work toward that goal.
9 Absolutely.

10 BISHOP: I want to bring it all the way around.
11 Now, the sampling is supposed to happen in
12 October.

13 BURIL: You mean the start of field work.

14 BISHOP: Field work, yes.

15 BURIL: At this point in time that's not going
16 to happen.

17 BISHOP: Why is that, since we have about a
18 month's worth of field work that's got to go on to
19 drill the borings for the soil vapor work wells?

20 BURIL: Because I haven't been able to go
21 through the contractual requirements part of this
22 because the scope reopened and I did not have
23 definitive scope with which to be able to bid.

24 When we hit June 18th was the date that we
25 were supposed to begin our definitization with the

1 contractors and lay everything out, that date
2 passed, and we were somewhat late. We felt we could
3 make up the couple of weeks that we were late.

4 We then got our comments from DTSC. That
5 reopened the issue of scope. That created a
6 situation where we could not go to bid for the
7 borings, for the analyses or any of the other things
8 that we have been talking about now for the last few
9 weeks.

10 As a result, we have to still go out and
11 get these contractual things in place.

12 BISHOP: So now we're talking about, from my
13 estimate, March. Right?

14 BURIL: For?

15 BISHOP: We're three months later than when you
16 said we needed to be.

17 BURIL: We can move the entire schedule back and
18 forth. We do not need to follow strict quarters in
19 the year. We can make it in February. We can make
20 it in March. We can make it any time we want and
21 follow quarterly schedule from there.

22 BISHOP: No. But what I'm saying is that you
23 needed this by June 18th. We are now talking about
24 September 18th before you have an idea on what the
25 schedule is. So we're talking about a three-month

1 shift. So that's October, November, December,
2 January sometime.

3 BURIL: At best, I'm figuring the end of
4 November right now.

5 LOWE: Well, since the whole schedule is being
6 held up on this I think it would be wise for all of
7 the agencies, you know, to focus on this and respond
8 quickly. And I think DTSC has said they're going to
9 do that. They're going to have a letter to us
10 within a week. It would be nice to see JPL make
11 that same kind of commitment.

12 BURIL: We will make the very best effort we
13 can.

14 BISHOP: How about, if we're demanding them a
15 week, you return in a week?

16 BURIL: What's being expected in a week? I
17 guess this is one of the things I want to be sure I
18 understand.

19 LOWE: A response to DTSC's letter about
20 additional borings.

21 CHRISTMANN: There were two issues. The
22 additional borings and the tributyl tin analyses on
23 Monitoring Wells 12 and 13.

24 BURIL: If those are all we're talking about,
25 then, yes, I believe we can do that.

1 Now, as far as obtaining modified addenda
2 and so forth in that time frame, I would say no,
3 that won't happen. But we will be able to respond
4 to you regarding what our thoughts are regarding
5 this and we can take it from there.

6 Without having had opportunity to sit with
7 Peter and discuss this, I can't tell you what that
8 response will be at this point.

9 AMIR: This is surprising, because I thought we
10 kind of agreed on the issues. That's why we were
11 going to write it.

12 RENZI: You wanted it in writing.

13 BURIL: We want it in writing to know that we do
14 have agreement.

15 LOWE: I thought you wanted it in writing so
16 that you fully understood what --

17 BURIL: It's both.

18 LOWE: -- DTSC was looking for, not that you
19 agreed with it.

20 BURIL: As soon as we have it, we know it's
21 there, then we can agree to it.

22 Until we do know what's there, I don't
23 have any way of being able to say that we agree to
24 it here at this point in time. We need to see it in
25 writing so that we can evaluate it and then go from

1 there.

2 LOWE: Okay. So, for example, with the tributyl
3 tin in the groundwater wells, JPL is thinking, well,
4 if DTSC can put it in writing that they're really
5 only looking for us to sample in those two wells and
6 for two rounds, and if that is negative for all of
7 that, then we don't need to sample for it anymore,
8 then JPL is ready to commit and say we'll do that?

9 BURIL: Correct.

10 BISHOP: No. Let's -- so you are saying that
11 now, that if --

12 BURIL: If I misspoke in the past, then I'm not
13 sure where we're coming from here.

14 BISHOP: My understanding was you were willing
15 to consider it once you got it in writing.

16 BURIL: Okay. If you want to pin me down that
17 tightly, I'll say, yes, we will consider it.

18 The man that sat here, Peter, is the only
19 one that can say, "Yes, I'll spend the money." I
20 don't have that authority.

21 I'm telling you that we will do what we
22 can to get this taken care of as rapidly as
23 possible. But we need to have everything in writing
24 as to what the agencies are requesting so that it
25 can be considered and ultimately proposed upon, and

1 go from there.

2 LOWE: Okay.

3 Any other questions?

4 BURIL: Just one real quickly. Going back to
5 the same questions that we were looking at before.

6 Debbie, you gave us some information on a
7 tributyl tin analysis. Do any of the agencies have
8 a, quote, approved analysis that they would prefer
9 to see used for that particular constituent?

10 RENZI: Did you talk to HML?

11 NAKASHIMA: I talked to HML instead of getting
12 them --

13 BURIL: HML is?

14 NAKASHIMA: Our laboratory. I'm still waiting
15 for the information.

16 BURIL: Okay. As soon as you have it, it will
17 help us a great deal to be able to scope things out
18 and know what we have to do.

19 I think we've answered all the other
20 questions on here as far as we can. So I guess we
21 pass the NASA questions on.

22 LOWE: Does anyone think it will be worthwhile
23 to go through one more time what will be the content
24 of the DTSC letter, what will be the content of the
25 Water Board letter and what the other action items

1 are now?

2 AMIR: I think we know by now.

3 CHRISTMANN: I wrote them down, Debbie.

4 BURIL: I think we know. They will be in the
5 minutes, too, and you get those. You can verify
6 those.

7 LOWE: I will take a shot at trying to put
8 together action items before the 14th, if Craig will
9 give me his notes.

10 BURIL: Thank you all very much.

11 Real quickly before we close the record,
12 we have updated tables that include organic and
13 inorganic analyses that deal with also the QA work
14 that we have thus far. So if you'd like updated
15 tables, I'll have them back here. Just grab a copy
16 as you go by.

17 BISHOP: Real quickly, I just forgot to ask.
18 What is the status of the validation on the offsite
19 groundwater?

20 BURIL: It's going out the door, hopefully, next
21 week.

22 LOWE: Going out the door to us?

23 BURIL: No. Going out the door to the
24 validation organization, where we had that
25 contractual problem we told you about. We've got

1 that settled. It's now going out the door.

2 LOWE: How long will it take them to validate
3 the data?

4 BURIL: It's only 10 percent as opposed to 100
5 percent validation on previous things, so we
6 anticipate it will be much less time this time
7 around. I can't give you an exact schedule because
8 I haven't talked to them yet. But it should be much
9 less.

10 NOVELLY: Usually takes a couple weeks to a
11 month.

12 (The proceedings adjourned at 3:54 P.M.)

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