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TRANSCRIPT OF PROCEEDINGS

NASA/JPL CERCLA RPM MEETING

THURSDAY, APRIL 28, 2005

FOOTHILL MUNICIPAL WATER DISTRICT

4536 HAMPTON ROAD

LA CANADA FLINTRIDGE, CALIFORNIA

1 APPEARANCES:

- 2 KEITH FIELDS – NASA/BATTELLE
- 3 STEVE SLATEN - NASA
- 4 NICK AMINI – NASA/BATTELLE
- 5 LORI GARNER – NASA/BATTELLE
- 6 GARY TAKARA - PASADENA WATER AND POWER
- 7 ALAN SORSHER - CALIFORNIA DEPT. OF HEALTH SERVICES (CA DHS)
- 8 JEFF O'KEEFE - CA DHS
- 9 MARK RIPPERDA - US EPA
- 10 MOHAMMAD ZAIDI - Los Angeles Regional Water Quality Control Board
- 11 ROBERT HAYWARD - LINCOLN AVENUE WATER COMPANY
- 12 BILL PESCI – FOOTHILL MUNICIPAL WATER DISTRICT
- 13 MYRNA GUTTIERREZ – NASA/BATTELLE
- 14 JOHN LOPEZ - LAS FLORES WATER COMPANY
- 15 KAREN ARTEAGA - GEOSYNTEC
- 16 JAMES KO – CA DHS
- 17 MARK VELASQUEZ – Raymond Basin Management Board
- 18 JUDY NOVELLY - JPL
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1 La Cañada, California, Thursday, April 28, 2005

2 10:00 a.m.

3

4 MR. SLATEN: All right. Alan had asked, maybe,
5 that we move the groundwater monitoring update up, and
6 we can -- I think we can probably do that.

7 The other thing is I'm hoping that it doesn't
8 take the full time that we've allotted today. I have
9 another meeting back at plant site at 1:30 that people
10 are wanting me for; that if I can make that, that would
11 be nice, but if we could even finish before lunch.

12 Usually, this crowd has been okay with going
13 ahead and working straight through, if we can, and
14 getting finished instead of breaking for lunch and
15 coming back.

16 Is that still kind of a consensus?

17 MR. RIPPERDA: If there is a chance that we can be
18 done by 1:00 or a little after, I'd like that better.

19 MR. SLATEN: Okay. All right. So let's just see
20 how it goes, and we'll talk about it. If we start
21 running a little later, we'll talk about whether people
22 need to eat or whether we just finish up.

23 So with that said, then do we need to do --
24 does everybody know everybody pretty much?

25 I don't know -- there's a couple of new people

1 I may point out here specifically.

2 MR. FIELDS: We need to go around so we can get it
3 for the court reporter.

4 MR. SLATEN: All right. We'll do that for the
5 court reporter.

6 But first, I want to make sure people knew the
7 people that are working now closely with me.

8 Nick Amini, engineer with Battelle, and he's in
9 my office full time out here working for Keith, so I've
10 got somebody locally here. He's been working pretty
11 much full time on getting the OU-1 treatment plant up
12 and running, and now he's going to be working on the
13 off-site treatment plant closely with the City of
14 Pasadena. It's probably going to take up most of his
15 time.

16 Lori Garner, I don't know if everybody has met
17 her or not, but she also works for Battelle, works right
18 in my office. Most of her time she spends supporting
19 Merrilee, so that's the major part of the work that she
20 does.

21 So for the court reporter, I will just start:

22 Steve Slaten, NASA, JPL.

23 MR. AMINI: Nick Amini, Battelle.

24 MS. GARNER: Lori Garner, Battelle.

25 MR. TAKARA: Gary Takara, Pasadena.

1 MR. SORSHER: Alan Sorsher, DHS.
2 MR. O'KEEFE: Jeff O'Keefe, DHS.
3 MR. RIPPERDA: Mark Ripperda, U.S. EPA.
4 MR. ZAIDI: Mohammad Zaidi, Regional Water Quality
5 Control Board, Los Angeles.
6 MR. HAYWARD: Bob Hayward, Lincoln Avenue Water Company.
7 MR. PESCI: Bill Pesci, Foothill Municipal Water
8 District.
9 MS. GUTIERREZ: Myrna Gutierrez, consultant to
10 NASA, Battelle.
11 MR. LOPEZ: John Lopez, Las Flores Water Company.
12 MS. ARTEAGA: Karen Arteaga, Geosyntec consultant.
13 MR. KO: James Ko, DHS.
14 MR. VELASQUEZ: Mark Velasquez, Raymond Basin
15 Management Board.
16 MS. NOVELLY: Judy Novelty, JPL.
17 MR. SLATEN: Okay. On the agenda -- I'm looking
18 for an agenda.
19 Bob -- Keith, do you have one?
20 MR. FIELDS: Just have --
21 MR. HAYWARD: I know it by heart.
22 MR. SORSHER: Keith, one other thing. Is there
23 going to be a sign-up sheet?
24 MR. RIPPERDA: Keith signed it already.
25 MR. FIELDS: I'll start one.

1 MR. SORSHER: Because I would like to get
2 everybody's phone numbers because I'm looking for some
3 phone numbers.

4 MR. SLATEN: Okay. All right.

5 Speaking of, Lori, why don't we do -- for
6 everybody that is here today, and then maybe we'll add
7 some others -- let's get phone numbers and e-mails,
8 electronically, and we'll e-mail that out to everybody.

9 Okay. We always start with the public
10 involvement update.

11 Merrilee is in the bottom of the Grand Canyon
12 this week and next, so she won't be speaking to us. But
13 I'll just go ahead and let Lori do the update on public
14 involvement.

15 MS. GARNER: Well, I mean, as probably a lot of
16 you -- most of you get sent the JPL -- I mean the
17 water cleanup newsletter -- those were out in March,
18 and then a lot of you also were there for the Community
19 Involvement Session where we had -- it was more
20 interactive than a lot of the other public meetings. We
21 had displays, and people could go around and talk to the
22 people -- the technical people on the project to answer
23 their questions.

24 And overall, we got pretty good feedback from
25 everybody that went. There were about 70 or so public

1 attendees, not counting the staff people, people

2 staffing it.

3 And the next public meeting will be sometime in
4 either September or October, so you can note that.

5 And just the next kind of thing that we have
6 going on is for the open house, the JPL Open House,
7 which is a pretty big event -- lots of people coming
8 through there -- and we'll have displays and the same
9 handouts like we did at the Community Involvement
10 Session, so continuing to try to get people informed and
11 answer questions.

12 MR. RIPPERDA: Is that a JPL-wide open house?

13 MS. GARNER: Yeah.

14 MR. RIPPERDA: You're going to have a booth there?

15 MS. GARNER: We'll have a booth -- yeah. There's
16 probably -- I think they expect 20,000 people to come
17 through.

18 MR. SORSHER: When is that going to be?

19 MS. GARNER: It's the 14th and 15th of May.

20 MR. SLATEN: That's a good time.

21 MS. GARNER: Yeah. And anyone is welcome to come
22 to that on Saturday or Sunday. Obviously, it's not
23 just, you know, having to do with our project or even
24 NASA. It's JPL-wide. Every -- there's going to be tons
25 of --

1 MR. SLATEN: It's a big deal. Everybody has --
2 there's lots of booths out. Little giveaway things, you
3 know, with planets or stars or whatever. It's an
4 interesting time to come and visit. It's the only time
5 that JPL is really open to the public without having to
6 get badges and go through all that to get in. It's a
7 good time to come and look and see what JPL does.

8 I'll be manning a booth part of the day
9 Saturday and part Sunday, I think, and Merrilee and
10 others will be helping out so that I don't have to work
11 on it all weekend.

12 So come on by, if you ever wonder what JPL
13 looks like or what they do, besides what I do.

14 Okay. Next. Lincoln Avenue system -- oh, I'm
15 sorry.

16 MR. RIPPERDA: Just a quick question.

17 Do either Keith or Lori have any interest in
18 Merrilee's question about Section 508 compliance, or is
19 that Merrilee's thing?

20 MS. GARNER: Yes, I do.

21 MR. RIPPERDA: So Merrilee had sent me an e-mail
22 weeks ago asking about Section 508 compliance, which is
23 a federal law that says that any government website has
24 to be completely accessible to everybody, including
25 blind people, deaf people, people with various

1 disabilities. And NASA's headquarters had noticed that
2 the JPL website (inaudible) website wasn't in compliance with Section 508.

3 So the quick answer -- and Merrilee's question
4 was, "Geez, this looks hard. Does EPA do this?"

5 And, yeah, EPA, our web people say absolutely.
6 It's a law. Everybody has to comply. And we can talk
7 about that more later, if you want.

8 I sent Merrilee an e-mail, but with her out, it
9 probably didn't get forwarded to you. But there are
10 some simple things. It's not as hard as Merrilee
11 thought it would be.

12 MS. GARNER: Okay.

13 MR. SLATEN: Lori, if I didn't forward the e-mail,
14 just remind me when I get back to the office.

15 You copied me on it. I believe I've got it.

16 MR. FIELDS: The difficult part that we were asking
17 about was the PDF files that have been scanned --

18 MR. RIPPERDA: Right.

19 MR. FIELDS: -- and whether those PDF files -- and
20 Merrilee had some thoughts on whether that alters them
21 by making them accessible, interpret them in some way --

22 MR. RIPPERDA: Right.

23 MR. FIELDS: -- changes their legal definition.

24 MR. RIPPERDA: So our web page people said that the
25 optical character recognition software does a mediocre

1 job at interpreting PDFs and that our headquarters has
2 made the call that if you have a little -- I don't know
3 how this works, but you can put a little tag at the
4 beginning of it that reads out some kind of contact
5 information --

6 MR. FIELDS: Uh-huh.

7 MR. RIPPERDA: -- so that that person can then call
8 or some other way contact Merrilee or -- and so every
9 PDF scanned file doesn't have to be processed through
10 the optical character recognition. You just have to
11 have a little tag at the beginning of it.

12 They also said, you know, every agency has had
13 to deal with this. I know that's EPA's policy call, but
14 that you should check with your own NASA headquarters.
15 You must have other NASA agencies that have already
16 figured this all out.

17 MR. SLATEN: Trying to find out about that.

18 MR. RIPPERDA: Yeah.

19 But she said no, that we deal with lots of
20 scanned PDFs. That's just -- EPA decided no, they're
21 not going to make each of those individually accessible,
22 you know, except that little tag at the beginning.

23 MS. GARNER: Oh, wait. So they don't have to
24 send them -- does every PDF have to have that software
25 put on it?

1 MR. RIPPERDA: No.

2 MS. GARNER: No.

3 MR. RIPPERDA: So the overview answer is "yes," you
4 have to comply with Section 508 with everything, but
5 that, putting a tag at the beginning of a scanned PDF
6 file is complying. So that tag just has to have some
7 accessibility thing to provide a contact so that person
8 can call you or otherwise contact you to get specific
9 help with the file they want.

10 MS. GARNER: Because we definitely -- we're going
11 to do, like, the main documents, but there are some in
12 there, you know, so how many hundreds of thousands of
13 pages is that would have to be scanned in.

14 MR. SLATEN: All right.

15 MR. RIPPERDA: And I can give you a name at EPA, if
16 you want to call that person. I think they might be
17 more help than your own NASA people.

18 MR. SLATEN: Okay. Then moving on to Lincoln
19 Avenue system. Been working well since last summer.
20 It's pumped something like 2,500 acre feet total now. I
21 forget the exact number.

22 But the only issue that I would ask to talk
23 about here is to make sure that Bob's on schedule to
24 get -- to have the water rights he needs to keep the
25 system pumping. So the City of Pasadena was talking

1 about another thousand.

2 Where are we with that, Gary, do you know?

3 MR. TAKARA: Actually, I was going to mention
4 Bob -- Bob, do you notice that in the last couple of
5 months -- or I should say in the beginning of the year,
6 the rate in which we've been getting water from Lincoln
7 at our Calaveras -- or I should say Calaveras in the
8 upper area has been very low. I mean, you're talking
9 about probably no more than a couple hundred, 2-, 250
10 GPM at most.

11 MR. HAYWARD: Which -- which period are you
12 referring to?

13 MR. TAKARA: This is in the January, February,
14 March.

15 MR. HAYWARD: Okay. You know, we're in the end of
16 April, going into May now. And for the past couple of
17 RPM meetings, we've been talking about upgrading the
18 interconnect, and I think that flow is up to 650 gallons
19 a minute as of last month.

20 MR. TAKARA: Okay. We'll check into that.

21 MR. SLATEN: How about -- where are you -- do you
22 know where you are on --

23 MR. HAYWARD: We've -- we've only started
24 preliminary discussions about amending the current
25 lease. You know, we have -- the water that we're

1 producing right now is under an amendment to the
2 original water lease, the thousand acre feet. We
3 amended the lease to renew the thousand with an
4 additional thousand.

5 And then we got a preliminary discussion -- I
6 had with Shan as to amending the agreement again to
7 allow for a lease of an additional 1000-acre feet. And
8 he was very open to that, and he understands what's
9 going on.

10 And I personally don't think that we're going
11 to have a problem with having Pasadena assist us in
12 treatment and plume containment, as long as they're
13 still in the negotiation and startup -- and construction
14 and startup of their treatment plant. I think then and
15 only then where there may be -- the water may not be
16 available, but I expect that water at least to be
17 available up until then.

18 And when we ask the parties involved "When is
19 then?" sometime in the future; a year, 18 months, we
20 don't know.

21 So I'm not -- I'm not concerned about it. I'm
22 almost sure that they will be very cooperative assisting
23 us.

24 MR. SLATEN: Okay. And the technical memorandum is
25 the one that --

1 I'm sorry. Bob, did you have more?

2 MR. HAYWARD: Yeah. I just want to go ahead and
3 share some information with the group today.

4 What I did, just for informational purposes, I
5 just charted the perchlorate and the carbon tet levels,
6 the wellhead levels that we have been experiencing since
7 the startup of the system, which was July of last year.
8 I just want to give everybody a feel as to where --
9 what's happening with the plume, really, and you might
10 just take one and pass it around. I have got 15 of each --
11 there's one each, one sheet of each.

12 MR. FIELDS: Okay.

13 MR. HAYWARD: But what we've noticed -- and I think
14 I've shared this with the RPM attendees in the past --
15 in that we've noticed that carbon tet has become a lead
16 VOC as far as detection is concerned. And the -- and
17 the carbon tet is really what's driving the carbon
18 changeout at the VOC plant to the point where it's
19 beginning to become a little frustrating with the MCL
20 being so small and the concentrations being so high.

21 But we have applicable treatment for it. It's
22 just a matter of taking the system out of service,
23 vessels out of service and changing out the carbon and
24 putting it back online.

25 I want everyone to know also that we have our

1 first resin changeout scheduled for next week. We were
2 able to run the system for, like, nine -- nine months
3 with the original bed of resin. The lead vessel is
4 scheduled for resin changeout sometime next week.
5 And we will lower the new bed of resin and then convert
6 what is now the lag vessel to the lead vessel and
7 continue operation.

8 So we are very pleased with the life span of
9 the original bed of Rohm and Haas resin and performs to
10 expectation. Lincoln is satisfied, the manufacturer is
11 satisfied, and so is U.S. Filter.

12 There was a -- there was a question -- I think
13 Steve posed it to U.S. Filter, and it was part of the
14 CERCLA requirement, and that is the chain of custody and
15 the disposal of the resin. And I think U.S. Filter was
16 able to satisfy Steve's concern that -- of the
17 certification of the disposal site for the resin
18 someplace in the Midwest or something like that.

19 And I think Keith had been working with staff,
20 my staff, and -- with the conclusion of whatever stage
21 we are in in 97-005, and I think my staff was able to
22 get you all of that information that you needed in a
23 timely manner so --

24 MR. FIELDS: Absolutely.

25 MR. HAYWARD: -- we're okay there.

1 MR. FIELDS: It was very helpful.

2 And then, as Steve mentioned, this technical
3 memorandum we'll send out next week. I sent that to Anne
4 earlier this week, and she reviewed it and said it --

5 MR. HAYWARD: Yes.

6 MR. FIELDS: -- was okay.

7 MR. HAYWARD: I reviewed it also.

8 MR. FIELDS: Okay. So we're going to finalize that
9 and send it out to the whole group.

10 MR. HAYWARD: Okay. And just to share with you, as
11 everyone knows, if you're in this area, you know the
12 perchlorate -- the ion exchange plant has been getting a lot of
13 attention since it went on line in July of last year.

14 And as far as I know, it is still the -- still
15 the only system that has been permitted for operation by
16 DHS from your region. And --

17 MR. O'KEEFE: From our region?

18 MR. HAYWARD: Yes.

19 MR. O'KEEFE: I believe there is a similar system
20 in Riverside.

21 MR. HAYWARD: In Riverside. In the Los --

22 MR. O'KEEFE: For our region, yes, that's the only
23 one.

24 MR. HAYWARD: So we've been getting a lot of
25 attention to the point that we have been entertaining a

1 lot of visitors. We've been doing a lot of tours of the
2 system.

3 And, of course, you know we're more than
4 willing to share whatever knowledge that we have with
5 anyone that's referred to us by DHS, but I just wanted
6 to know that -- I think it's the 10th of May, I have a
7 group -- government officials from the country of
8 Israel coming through to tour the Lincoln system and
9 gather information regarding perchlorate treatment and
10 ground water for that country so...

11 MR. RIPPERDA: Maybe you should charge admission.

12 MR. HAYWARD: I was thinking about that, you know.

13 MR. O'KEEFE: Bob, I have a comment about your
14 resin change.

15 MR. HAYWARD: Uh-huh.

16 MR. O'KEEFE: I'm not saying for sure, but I'm
17 saying DHS might have an interest in going to your
18 facility after changeout --

19 MR. HAYWARD: Okay.

20 MR. O'KEEFE: -- to collect another round of
21 samples for nitrosamine analysis --

22 MR. HAYWARD: Okay.

23 MR. O'KEEFE: -- to be done by our laboratory.

24 MR. HAYWARD: Okay.

25 MR. O'KEEFE: So I'll let James and

1 Stefan Cajina coordinate that with you if we decide to
2 do it.

3 MR. HAYWARD: Okay. Well, you let me know because
4 next week, you know --

5 MR. O'KEEFE: Don't let it hold you up, but we'll
6 contact you.

7 MR. HAYWARD: Okay. We're going to download the
8 existing resin. We're going to drain the system, go in
9 and inspect the internal components. We want to look at
10 the filters inside of the vessels and make sure
11 everything is working okay before we disinfect, and then
12 load the new resin and then disinfect and put it back
13 on-line. So I don't want to miss that window that you
14 need to get in there.

15 MR. O'KEEFE: Well, we're still trying to develop
16 some consistency about our policies for nitrosamine
17 analysis. So I'll let the highers up make decisions
18 about it if and when we want to do that.

19 We're aware of your schedule, and we'll try to
20 coordinate to -- if we decide to do it, to do it
21 probably within -- it's preferable to do it within the
22 first 30 minutes of operation, so that will take a lot
23 of coordination. So we'll just contact you and try to
24 make arrangements.

25 MR. SORSHER: Do you know what day the changeout is

1 going to occur?

2 MR. HAYWARD: No. All I know is that it's
3 scheduled for next week.

4 MR. SORSHER: Can I ask you how long a run are you
5 getting on your activated carbon beds?

6 MR. HAYWARD: Traditionally, we would get a
7 three-month run, but what the carbon tet -- as I pointed
8 out starting out, because of the MCL and the
9 concentration at the wellhead, that run has been as slow
10 as four weeks or one month.

11 But, you know, we're allowed to use a regenerated
12 carbon in the system. And what I've done -- I think
13 because we have been doing that -- that has shortened
14 the run time.

15 So we're going to insist on a going out basis
16 that the supplier provides us with virgin carbon from
17 here on out to try to prolong the life of the carbon
18 before we experience the CTC breakthrough.

19 MR. O'KEEFE: Have you always used the same
20 products?

21 MR. HAYWARD: Yes.

22 MR. O'KEEFE: So there are some -- lots of
23 different variations in those carbons.

24 And supplied through U.S. Filter?

25 MR. HAYWARD: U.S. Filter, West State. And, you

1 know, it started out as our version, and when we
2 deload -- and it goes back for regeneration, it is our
3 carbon that we get back. The carbon is restricted to
4 our application, so it's not mixed with anybody else's.

5 MR. O'KEEFE: No. But I'm just curious if you were
6 entertaining the idea of using maybe some more what they
7 call turbo carbons. You know, they have some more
8 expensive products that may have better performance, but
9 I don't know.

10 Have you ever discussed that with U.S. Filter?

11 MR. HAYWARD: No. No, I have not. Although, you
12 know, I have read about the new carbon that's right
13 now -- that's currently in R&D, that's on the horizon.
14 But no, we haven't talked in those terms because we are
15 working within a budget that has been established and
16 agreed to by those guys; got to stay there.

17 MR. LOPEZ: Question for Jeff.

18 MR. O'KEEFE: Yes.

19 MR. LOPEZ: When you say "turbo carbons," is it
20 duration or longevity, or are you talking about
21 efficiency?

22 MR. O'KEEFE: Well, I know like when you originally
23 put that system in you were targeting more the TCE,
24 PCE. Now that you have the CTC and quick higher
25 concentrations, quicker breakthrough, they might

1 recommend a different product for you to extend the run
2 time. But I'm no expert.

3 MR. LOPEZ: Also --

4 MR. O'KEEFE: And, you know, also like MTBE behaves
5 a lot differently so there would be a different product
6 for MTBE versus one of these CTC, PCE, TCE.

7 MR. SLATEN: Bob, we'll take the action, and I'll
8 have Keith look into some of those products, get us some
9 information about that.

10 MR. HAYWARD: Okay. Thank you.

11 MR. TAKARA: Bob, on your perchlorate chart --

12 MR. HAYWARD: Yes.

13 MR. TAKARA: -- for your well No. 3 --

14 MR. HAYWARD: Yes.

15 MR. TAKARA: -- you have it dated back to July '04?

16 MR. HAYWARD: Yes.

17 MR. TAKARA: The prior 6 to 12 months prior to
18 that, can you kind of give me an indication what kind of
19 trend it was?

20 Was it constantly around the 10?

21 MR. HAYWARD: Okay. I'll tell you the timeline,
22 Gary. You know that when we -- okay. This is July of
23 '04. When we -- when we ended our production -- well
24 production season in November of '03, well 3 was still
25 running consistently around four parts per billion.

1 Back then, we were still arguing over the
2 action level and all those types of levels, but we felt
3 very, very safe where it was at four parts.

4 So you recall in May of '05 when we anticipated
5 starting up the new pumping season, our start-up sample
6 jumped from four -- it was up to 15 parts. So that's
7 when the -- when the alarm light came on.

8 MR. TAKARA: That was May '04?

9 MR. HAYWARD: Yeah.

10 So we shut it down then, and then we started
11 the treatment installation process.

12 MR. SLATEN: Okay. We actually have some
13 information that will augment what we've been talking
14 about so far, so let's go to the next slide.

15 Just to remind people where Lincoln Avenue's
16 wells are and their treatment plant.

17 Next.

18 And this is the system diagram, if people
19 hadn't seen it before. Without belaboring it, the
20 yellow is the newer bag filters that were added for
21 sediment to protect -- keep sediment out of the ion
22 exchange, then it goes to the carbon --

23 MR. FIELDS: Bob, when did those bag filters go
24 online, again, the date?

25 MR. HAYWARD: Those bag filters had been online

1 three months.

2 MR. SORSHER: And any change in the operation of
3 the bag filters?

4 MR. HAYWARD: The only change in the operation of
5 the bag filters, the first filters that we installed,
6 they were 10-micron filters. And we realized from that
7 that it was a little -- little too dense.

8 So we realized that we can accomplish our
9 objectives as far as sediment containment with 25 micron
10 filters, so that's what we're running now. So that's
11 about the only adjustment we made.

12 MR. SORSHER: Are you having to clean them on the
13 same frequency or change them? Do you change them or
14 just clean them?

15 MR. HAYWARD: We change them.

16 MR. SORSHER: And how -- is there any change --

17 MR. HAYWARD: We get about a six-week run on a
18 filter.

19 MR. SLATEN: By the way, we have the exact same
20 system on our OU-1 treatment plant to keep --

21 MR. HAYWARD: Do you know, Steve, what the micron
22 you're running on your filters over there?

23 MR. FIELDS: Twenty-five.

24 MR. PESCI: Have you experienced the same sort of a
25 run time?

1 MR. SLATEN: Well, initially, when we first turned
2 the wells on, we would change them out fairly often
3 because they were brand new wells. And now it's evened
4 out, and we get quite a bit of time between changeouts;
5 weeks.

6 MR. FIELDS: Months.

7 MR. SLATEN: Next.

8 To sum up the Lincoln Avenue operation,
9 312,000,000 gallons of water from Lincoln Avenue 3;
10 172,000,000 for Lincoln Avenue 5; total mass of
11 perchlorate taken out of -- by this new system,
12 67 pounds, carbon tet, 7.3 pounds, and TCE, 15 pounds.

13 MR. HAYWARD: Is that acceptable?

14 MR. SLATEN: It's doing its job.

15 MR. HAYWARD: Okay.

16 MR. RIPPERDA: I want to see a hundred pounds next
17 time. Do better, Bob.

18 MR. HAYWARD: Okay.

19 MR. SLATEN: Next.

20 We tried to also plot some of the analytical
21 results out of Lincoln Avenue. Going back, we went back
22 to '95 here with the perchlorate carbon tet and TCE in
23 well No. 3.

24 And you can see some trends -- not much else to
25 say about that except the perchlorate has been higher in

1 the last couple of years.

2 Anything else you want to say about that,

3 Keith?

4 MR. FIELDS: Just the correlation, like Bob pointed
5 out, that we're seeing the highest levels of perchlorate
6 and carbon tet we've seen since '95, at least.

7 But you do notice back in '97 you did have
8 perchlorate and carbon tet. There has always been that
9 correlation between the detection of carbon tet and
10 perchlorate.

11 MR. SLATEN: Next.

12 And for Lincoln Avenue well No. 5, similar.
13 However, you see a couple of trends there with the TCE
14 coming down over the years, mostly, and maybe a
15 perchlorate trend downward recently.

16 Correct, Keith?

17 MR. FIELDS: Most recently, you -- since you
18 started up, the perchlorate five has dropped down.

19 MR. HAYWARD: Yes.

20 So that's telling us well No. 3, we're doing a
21 pretty good job of keeping it --

22 MR. SLATEN: So it looks like good news.

23 The -- our monitoring well MW-17, which is only
24 a thousand feet or so upgradient of their well No. 3.

25 And we also -- looks like we see a -- screen 3

1 is where we see most of the perchlorate, and it looks
2 like a downward trend in the recent samplings.

3 MR. FIELDS: In previous discussions with DHS, we
4 have indicated MW-17 was an important well as sort of an
5 early indication of results in Lincoln Avenue 3 and 5.

6 And just since our peak in '03 of 209 in that
7 one screen, we have seen a decreasing trend since then,
8 with the most recent results around 70 parts per billion
9 in that screen.

10 MR. O'KEEFE: Okay. So that's newer than this
11 first quarter report.

12 MR. FIELDS: That includes up to the first quarter
13 report. That's all the data we have. We're doing the
14 second quarter sampling right now.

15 MR. SORSHER: One down from 1.3 to 76.

16 MR. TAKARA: Did you happen to do 1, 2, 3, TCP
17 there recently?

18 MR. FIELDS: No.

19 MR. SLATEN: This is Bob's ion exchange system, and
20 this is showing the ion exchange influent levels.

21 Jumping around somewhat, I suspect that it's well No. 3 and No. 5
22 coming on and off, although we haven't done an exact
23 correlation there, but that's the logical explanation
24 for some of the bumps. So we are getting in a
25 reasonable concentration, and it's all coming out.

1 MR. FIELDS: What levels have you seen recently
2 with perchlorate? Is it just starting to get some
3 detection? Is that why we're changing out,
4 perchlorate --

5 MR. HAYWARD: What --

6 MR. FIELDS: -- out of the lead vessel?

7 MR. HAYWARD: Yeah. Based on the formula, as Jeff
8 put together, is a very involved formula as to what
9 would generate changeout. But in the end result, we
10 could not exchange 6 percent. We are at 4 percent. So
11 we decided we would go ahead and change it out. If you
12 can read that formula that he put together --

13 MR. O'KEEFE: Well, I'll give Alan credit.

14 MR. SORSHER: He modified it, as I recall.

15 MR. O'KEEFE: Sure I did. I modify everything.

16 MR. SORSHER: We had big meetings over that.

17 MR. SLATEN: Looking at nitrate and sulfate
18 breakthrough, evaluating that, it had -- this just shows
19 that it happened about the time we thought it would
20 happen. There wasn't a big slug -- what is the word you
21 would use?

22 MR. FIELDS: Peaking. We don't -- the vendor said
23 there wouldn't be peaking, and we didn't see it.

24 MR. HAYWARD: Question: You're getting this data
25 directly from the vendor?

1 MR. FIELDS: I got that directly from Anne.

2 MR. HAYWARD: When did she give you that? She has
3 all that too?

4 MR. FIELDS: It was just -- what she gave me was
5 just the lab reports, and then we put it together and
6 calculated the gallons per cubic foot of resin.

7 MR. HAYWARD: Okay.

8 MR. SLATEN: Next.

9 Okay. That's what I had on talking about that.

10 MR. FIELDS: All that and more will be --

11 MR. HAYWARD: Any more questions about Lincoln?
12 Because I'm going to have to cut out a little early,
13 Steve.

14 MR. SLATEN: I'll send in a technical report with
15 all this in it next week to everybody.

16 MR. O'KEEFE: Well, Steve, should I talk about
17 what -- the conversation we had after our last meeting?
18 You had asked about DHS permitting issues with Lincoln
19 Avenue --

20 MR. SLATEN: It's all part of the 97-005. Was
21 this -- I'm trying to remember --

22 MR. O'KEEFE: After we had our phone call, you
23 called back, and you had a few questions about Lincoln
24 Avenue permits.

25 MR. SLATEN: Yeah. Right.

1 MR. O'KEEFE: Namely, you know, we had imposed
2 deadlines per completion of 97-005 of May '05, and you
3 were questioning whether that would terminate that
4 Lincoln Avenue permit, you know, in May.

5 And I said, no, that's not a temporary permit.
6 That's a permit that can last forever. But as part of
7 the 97-005 process, we can revisit the permit and see if
8 it's good as-is, or maybe we want to require stronger
9 blending requirements or more additional monitoring
10 requirements and revise it as necessary. But as it is,
11 it's their current operating permit, and it stands until
12 we make that evaluation.

13 MR. SLATEN: Okay. Good.

14 MR. O'KEEFE: Because the blending, Bob, I think
15 you're aware, that's an issue we never really wrapped up
16 with that permit. So that will be an issue that we will
17 revisit.

18 MR. HAYWARD: Anytime soon or we don't know or --

19 MR. O'KEEFE: It's up to the district engineer that
20 oversees your system, not me.

21 MR. ZAIDI: Bob, this [MWP?] -- no. This (inaudible)
22 that has some carbon tet increasing --

23 MR. HAYWARD: Uh-huh. Yes.

24 MR. ZAIDI: -- slightly, did you measure the -- or
25 anybody else measure the groundwater concentrations

1 around in the monitoring wells?

2 MR. HAYWARD: The water levels?

3 MR. ZAIDI: No, not the water levels.

4 MR. HAYWARD: The what?

5 MR. ZAIDI: Concentrations.

6 MR. HAYWARD: No. I only have access to data from

7 my wells. Keith might have more expanded data from

8 other wells.

9 MR. SLATEN: We monitor all of our monitoring wells

10 out in that area every quarter.

11 MR. ZAIDI: What's your closest well, maybe in the

12 capture zone of this well?

13 MR. FIELDS: It's 17. Actually, in this tech memo,

14 we will have a graph for carbon tet for MW-17, and

15 they've been elevated in the 10-to-15 range in that

16 screen 3 where we saw the highest levels of perchlorate

17 too in that well.

18 MR. ZAIDI: So it's possible that that well,

19 whatever pump rate -- what was the pump rate on that

20 well?

21 MR. HAYWARD: Thousand gallons a minute.

22 MR. ZAIDI: Thousand gallons.

23 That may be drawing from MW-17, maybe?

24 MR. FIELDS: That's our belief.

25 MR. ZAIDI: Yeah.

1 MR. SLATEN: What it also means is that is our line
2 of defense. That is where we are capturing perchlorate
3 and carbon tet now in the off-site.

4 MR. ZAIDI: MW-17?

5 MR. SLATEN: Well, his well just downgradient.

6 MR. ZAIDI: Yeah. Okay. So that's basically --
7 yeah. Okay. Fine. Treatment and -- that's fine.
8 Yeah.

9 Because this -- maybe between your well and
10 this MW-17, which is within the capture zone, and it's
11 withdrawing from there, if this can be decreased or
12 something like that.

13 MR. SLATEN: Decreased?

14 MR. ZAIDI: This concentration, maybe, so that the
15 groundwater flow is not toward that direction.

16 MR. HAYWARD: Can you do something to divert that
17 flow away from well No. 3?

18 MR. SLATEN: No. As a matter of fact, we wanted to
19 go to well No. 3 because, otherwise, it would get away
20 from us. So this is a good thing that we're capturing
21 it here.

22 I think we have to look at the -- sit down with
23 the bigger picture of the groundwater map to get even
24 more specific.

25 MR. O'KEEFE: Crawl around.

1 MR. ZAIDI: If MW-17 is part of the plume, then
2 this well is, yeah, withdrawing the concentration from
3 there, which is a good thing.

4 MR. SLATEN: Yes.

5 MR. ZAIDI: But if this is the main part of the
6 plume and this is MW-17 here, and this is their well,
7 then the cone of detection is now here. But then this
8 plume is probably also moving, so it might detect higher
9 concentrations later on.

10 MR. SLATEN: I understand what you're saying, but
11 from all the information we have, I believe the main
12 part of the plume is already squarely in Bob's
13 neighborhood and not upgradient from it. But I
14 understand what you're saying, but until --

15 MR. ZAIDI: If we start extracting here in the main
16 core of the plume, maybe we can start extracting more.

17 MR. SLATEN: Okay.

18 MR. ZAIDI: Divert this back into this.

19 MR. SLATEN: Yeah.

20 As we get to OU-1, I think you'll see we are
21 starting to have some success in the -- in the source
22 area.

23 MR. ZAIDI: Okay.

24 MR. FIELDS: And that's exactly what we want to do,
25 is treat the source area where the majority of the

1 perchlorate mass is located so that it doesn't get down to
2 Bob's system in the future.

3 MR. SLATEN: Okay. On the agenda next was talking
4 about the City of Pasadena system.

5 We are -- I think we've made a lot of progress
6 talking to Pasadena about amending the Devil's Gate
7 agreement. I think we're going to call it the Monk Hill
8 treatment agreement now. And once we have it signed,
9 we'll have the legal agreement whereby we fund the
10 treatment -- the complete treatment system for both VOCs
11 and perchlorate.

12 In the meantime, since we're making such good
13 progress towards the legal agreement, I've turned
14 Battelle back on to start working again on the technical
15 aspects of the agreement so we can get a head start on
16 that.

17 So we met with Pasadena yesterday to talk about
18 vendor selection and technical aspects, start planning
19 out the entire -- what I would call the project
20 management plan for this of what happens when and who
21 has which activity and how long they take. So we're
22 back to working on that. Try to get a head start and
23 get everything moving ahead as quickly as possible.

24 MR. RIPPERDA: Can you talk more about how the
25 City's permitting, the building department, zoning

1 department, kind of stuff is going to go?

2 MR. SLATEN: We started talking a little bit about
3 that yesterday. In the couple of hours that we had, we
4 couldn't get into all the details of that. We were
5 really -- the first thing we started talking about was
6 the details about what was happening very soon with
7 vendor selection and all the intricacies of that, and
8 the rest of the schedule, which includes these City
9 permitting reviews. We haven't gotten back into the
10 details of those yet.

11 I asked the City to look at the schedule and
12 think about what those were, so the next time we meet,
13 we can talk through more of those.

14 MR. O'KEEFE: At what time -- what point are you
15 going to initiate the CEQA process? After you have the
16 plans finalized?

17 MR. TAKARA: As part of -- as part of the City's
18 requirements, which is going to require a conditional
19 use permit, it's also going to include a -- my
20 understanding, it's going to require an environmental
21 assessment.

22 And as part of the environmental assessment,
23 I'm assuming at that point a CEQA for the City is going
24 to be required. So then it's going to -- so that should
25 also suffice for the DHS' requirements of the CEQA

1 review.

2 MR. SORSHER: You're talking now -- when you're
3 saying "the Monk Hill system," you're talking about the
4 four northern wells, the Arroyo --

5 MR. TAKARA: Ventura and Windsor.

6 MR. SORSHER: And Windsor.

7 MR. TAKARA: Correct.

8 MR. SLATEN: To kind of answer your question, I
9 think that by next month, after the City of Pasadena has
10 had a chance to look at our project management schedule
11 and offer any update, that we can probably share that
12 with everybody. So you can -- CEQA will be in there and
13 how long it will take and how it fits in with relation
14 to everything else.

15 MR. O'KEEFE: I mean, everyone is aware it's a
16 requirement for our program, so...

17 MR. FIELDS: But the City will take the lead.

18 MR. SLATEN: So just to remind people, this is the
19 City's system. The City will enter into the lease on
20 the system. NASA will give all the support that we can
21 to get everything going. NASA will fund all the lease
22 costs of the system and all Pasadena's costs associated
23 with the system.

24 NASA is going to pay for upgrading the wells so
25 that they're able to again supply the 7,000 GPM. And

1 NASA is going to prepare the site for the lease system
2 to be installed, such as infrastructure pad and so
3 forth.

4 And along those lines, what we've been thinking
5 about -- this gets to the FFA schedule.

6 Mark needs to have a new federal facilities
7 compliance act schedule for our agreement that he can
8 have for his enforceable milestones, and we haven't had
9 one for a while. And so along those lines, we've been
10 working on it, updating it, and we now have come, I
11 think, to the final decision, about ready to send it in
12 as final, that we will use the interim record of
13 decision approach.

14 What that does for us, instead of going on with
15 studies, proposed plans, feasibility studies, it helps
16 us to more quickly get to a record of decision where our
17 CERCLA documentation supports what we know we need to do
18 with the City of Pasadena, which is to get the system in
19 and operating.

20 So for those that are interested kind of in the
21 CERCLA process, we will have a new -- I've sent it out
22 last week to the RPMs and a few others that kind of
23 describes the process we want to take, but we get
24 relatively quickly to an interim record of decision on
25 the Pasadena system. It's in less than two years.

1 MR. FIELDS: We're actually, at least on the FFA
2 schedule, looking into the final, near the end of the
3 year. Final interim ROD.

4 MR. SLATEN: Okay. What's next?

5 MR. RIPPERDA: How is the 97-005 and DHS permit
6 timing with the City of Pasadena?

7 MR. O'KEEFE: Is that a question for me?

8 MR. SLATEN: With respect to the ROD or --

9 MR. RIPPERDA: No, not with the ROD. You know,
10 backing up, it looks like you're on track with your
11 negotiations with the City. But before your system can
12 go, I guess is the question for DHS.

13 MR. SORSHER: What's your start-up plan date for
14 this target now?

15 MR. SLATEN: Next month.

16 Oh, that was Bob's system. Sorry. Thanks,
17 Bob.

18 As soon as possible. Now, we're putting
19 together, of course, the detailed project management
20 chart, which shows all the thousand things that need to
21 be done between now and startup, but --

22 MR. SORSHER: Construction and everything, we're
23 talking at least a year?

24 MR. SLATEN: Yes. Granted.

25 MR. SORSHER: So we should have the 97-005 done

1 well before then.

2 MR. O'KEEFE: We think we need at least a month to
3 finish what Alan has recently started with his review.
4 And we've been pow-wowing and going through a lot of the
5 tables, and so far there's no red flags. But we had
6 hoped to get a little further by this meeting, but we
7 need at least another month, and that doesn't
8 necessarily include our headquarters' review of the risk
9 assessment. That's less critical, I think, at this
10 point.

11 MR. FIELDS: One thing on the risk assessment is
12 the City, in their most recent comments we got at the
13 end of February, which aren't in the version that you --

14 MR. O'KEEFE: We have a January version.

15 MR. SORSHER: We got it -- the link was put up in
16 January. It's actually dated November.

17 MR. FIELDS: It's still -- that's the January. I
18 mean, that's the January updates.

19 MR. SORSHER: I want to make sure I'm looking at
20 the latest one.

21 MR. FIELDS: It incorporates the City's last -- you
22 know, their first round of comments, and then we
23 responded to that.

24 MR. SORSHER: The October comments.

25 MR. FIELDS: Yes.

1 MR. SORSHER: I got those.

2 MR. FIELDS: But we --

3 MR. O'KEEFE: And their consultant?

4 MR. FIELDS: Yes, and Geosyntec. But they did

5 request some changes to the risk assessment, which we

6 said we will do so --

7 MR. O'KEEFE: But they haven't been done yet.

8 MR. FIELDS: I mean, we were holding off until we

9 got your comments, but we want to go ahead and move on

10 that.

11 MR. SORSHER: Can I get their comments?

12 MR. FIELDS: I think that they were sent to you.

13 MR. O'KEEFE: Were they part of the whole --

14 MR. TAKARA: CC'd to you.

15 MR. O'KEEFE: Okay. So they were part of those

16 October comments, or were they separate?

17 MR. SORSHER: After.

18 MR. TAKARA: You know how many responses we did

19 since that October? Two, at least?

20 MR. FIELDS: At least two.

21 You know, what I'll do is I'll send out our

22 final response table.

23 MR. SORSHER: 'Cause it'll have your response --

24 MR. FIELDS: It will have our proposed response to

25 that comment.

1 MR. O'KEEFE: What should we advise them, to
2 incorporate Pasadena comments?

3 MR. SORSHER: Sure.

4 MR. O'KEEFE: That would be my advice. I don't
5 want to hold you up.

6 Can you explain to me something you mentioned
7 earlier with Bob about 97-005 for Lincoln Avenue? What
8 were you referring to?

9 Early in the meeting you had mentioned some
10 exchange of comments. Did I hear wrong?

11 MR. SLATEN: I don't remember anything about that.
12 You know, we've been supporting the 97-005 for the Monk
13 Hill, and I don't remember saying anything about it with
14 respect to Bob -- you're the one that brought up just
15 kind of the issue of Bob's permit continuing to be good
16 until you reviewed and considered.

17 MR. SORSHER: Just to recap, I think -- remember
18 that the 97-005 document now was expanded to cover the
19 entire Monk Hill subbasin.

20 MR. O'KEEFE: Including Las Flores and Rubio.

21 MR. SLATEN: Has been for some time. We've turned
22 in the 97-005 that's logical for that area.

23 MR. SORSHER: So Keith, when would you -- do you
24 have those responses to Gary's comments done already?

25 MR. FIELDS: Yes. Well, we did the responses, sent

1 them back to Gary to make sure that our responses were
2 okay, so that's where we're at right now.

3 MR. SORSHER: So can I get them from you?

4 MR. SLATEN: Yeah. I'll send them to you when I
5 get back to the office. And by "responses," are they
6 incorporated into the document, or they're just --

7 MR. FIELDS: It's more of saying this is what we'll
8 do.

9 MR. SORSHER: A table like this. This is what they
10 did for the October --

11 MR. O'KEEFE: Yes. Okay.

12 MR. TAKARA: Is there anything that we need to be
13 aware of prior to you actually starting to -- going back
14 and reviewing the 97-005 in relationship to us moving
15 forward with a vendor, procuring a vendor on this
16 system?

17 MR. SORSHER: Well, as far as the ion exchange, I
18 don't see any issue because, you know, through the
19 permitting with Bob's system, you know, the vendor
20 assured us that it could treat up to 200 parts per
21 billion of perchlorate reliably, so that doesn't appear
22 to be an issue.

23 The issue might have to do with the air
24 stripper and carbon aspects of the design and whether we
25 think that that is -- it sounds like a very good

1 proposal to me. But whether we think that that's

2 accurate for all identified -- so which vendor are you

3 talking about?

4 MR. TAKARA: Well, you're making reference to U.S.

5 Filter. We haven't selected any yet.

6 MR. SORSHER: Okay. What's your time frame to move

7 forward? What's the --

8 MR. TAKARA: If the NASA, Pasadena agreement --

9 settlement agreement is signed, that provides us the

10 funding source. Immediately we can go with a proposal.

11 We're talking a very short window.

12 MR. O'KEEFE: You've already gotten bids from

13 various vendors.

14 MR. TAKARA: Well, that was more for information.

15 MR. SLATEN: That was a preliminary request for

16 information. It wasn't a formal bid process.

17 MR. TAKARA: It was released by NASA. It wasn't

18 the City's document.

19 MR. O'KEEFE: So you have a (inaudible) based on

20 the design parameters in Section 4 of the 97-005 that's

21 going out.

22 MR. SORSHER: Is that the preliminary design that

23 you're going to go with, that is in Section 5?

24 MR. TAKARA: Pretty much. Ion exchange.

25 MR. SORSHER: And sizing, everything --

1 MR. TAKARA: Sizing is based on their analysis for
2 the 97-005.

3 MR. SORSHER: Yeah. We were looking at that
4 yesterday, and you were looking at an influent
5 concentration of about 20.

6 MR. FIELDS: For perchlorate?

7 MR. SORSHER: Yeah.

8 MR. FIELDS: Between 20 -- maybe we revised it. To
9 50, 60.

10 MR. TAKARA: It has been revised.

11 MR. SORSHER: I don't have that one.

12 MR. FIELDS: That's the most recent one.

13 MR. SORSHER: Oh, okay.

14 MR. O'KEEFE: That would have been our comment,
15 that it was not conservative enough.

16 MR. FIELDS: I think we have 60, 59.

17 MR. TAKARA: Somewhere around there. I don't
18 recall the number.

19 MR. O'KEEFE: About .3.

20 Anything else?

21 MR. SORSHER: Well, you know, we should get you
22 comments at least on, you know, the first few sections
23 fairly soon. So don't -- don't sign any concrete
24 inflexible contracts.

25 MR. O'KEEFE: I guess the question I need to ask is

1 when is that spec going out to the bid? Because --

2 MR. SLATEN: Could be within a few weeks.

3 MR. O'KEEFE: Could be within a few weeks.

4 So it would be key that we are at least aware

5 of what are the design parameters in that spec,

6 especially if we don't have the same numbers in this

7 document.

8 MR. SLATEN: Well, we -- don't we already have -- I

9 mean, its volume and concentration, flow rate?

10 MR. O'KEEFE: Can we look at it?

11 MR. TAKARA: Okay. Yeah. No problem. We'll

12 forward that proposal to you. Go ahead and take a look

13 at it.

14 MR. O'KEEFE: And we'll work with you on your

15 schedule.

16 MR. TAKARA: And those numbers reflect the figures

17 that I received from Keith -- from Nick yesterday, which

18 reflects some of the comments we had regarding 97-005 in

19 the January, February, December time frame --

20 MR. SORSHER: What perchlorate concentration did

21 you use for that preliminary estimate that you got from

22 the vendors?

23 MR. FIELDS: Twenty.

24 MR. SORSHER: And I'm just wondering if you're

25 going up to 50, 60, is your design number, if that's

1 going to change their proposals very much.

2 MR. O'KEEFE: I doubt it.

3 MR. FIELDS: My understanding is that it wouldn't.

4 And more importantly, when we're evaluating vendors,

5 what's important is that they're all providing --

6 quoting on the same numbers. Not necessarily that it's

7 20 or 50, but that they have the same numbers.

8 And also some of the other competing ions and

9 TDS do have an effect on their performance, the resin

10 performance. So those are important that they all have

11 the same numbers in there too.

12 MR. TAKARA: All I ask is if I could provide the

13 proposal to you, that it's not released prior to --

14 MR. FIELDS: Okay.

15 MR. O'KEEFE: We have no reason to release it.

16 MR. FIELDS: So, Gary, you're going to send the

17 RFP?

18 MR. TAKARA: Same one I gave you. I'll just --

19 MR. O'KEEFE: Why don't you mark your copy to me

20 "Draft and Confidential." That way, I don't have to

21 file it. I can dispose of it when I'm through.

22 MR. SLATEN: If we're ready to move on, then, to

23 talk about the additional investigations.

24 This is -- the map shows the location of MW-25,

25 the one that -- in the City of Pasadena yard that was

1 completed last year, and MW-26, which we finished
2 drilling a couple of weeks ago and we're developing
3 right now and will be available for our next round of
4 sampling.

5 MR. SORSHER: You did get the location?

6 MR. SLATEN: Yes. The MW-26 location is in the
7 student parking lot behind Muir High School. And we did
8 get an access agreement with the school, finally, after
9 working on --

10 MR. SORSHER: Congratulations.

11 MR. SLATEN: So next.

12 So the interesting study is the isotope study
13 that we're going to begin collecting samples in May. We
14 will be coordinating that with our second quarter
15 monitoring event. And for that, we'll be collecting
16 some large volume samples, bringing them back to plant
17 site, and we'll be concentrating the perchlorate out of
18 that so we can send the perchlorate out for this isotope
19 analysis.

20 MR. FIELDS: One thing that I would like to mention
21 on that is in the work plan, we identify particular
22 wells that we wanted to sample. For example, we said
23 MW-21, which is sort of the southern portion of the
24 facility. And historically, we had some detections of
25 perchlorate in that well.

1 But sampling that just was done this week with
2 the quick turnaround on the perchlorate showed nondetect
3 of perchlorate from those wells -- from those screens.
4 So we need perchlorate in order to concentrate it enough
5 to get some perchlorate to analyze.

6 So just to say that there's going to be some
7 flexibility in the wells that we run the perchlorate
8 isotopes on.

9 MR. SLATEN: When we talked to John Schumacher
10 yesterday, he said that they haven't seen perchlorate in
11 this well for a while, and it would be a waste -- this
12 sampling is not to identify a level of perchlorate or
13 whether there is not perchlorate. This sampling is to
14 take where we know there's perchlorate and fingerprint
15 it.

16 So we would waste our time and money if we went
17 to a well that didn't have perchlorate in it right now.
18 So there's going to be some flexibility in that sampling
19 plan.

20 MR. RIPPERDA: What about some of the other oxygen
21 isotopes just for water-type characterization?

22 MR. FIELDS: Those will be done at all the wells
23 that we indicated.

24 MR. SLATEN: But we just wouldn't need to take that
25 large sample for perchlorate concentrate --

1 MR. RIPPERDA: Yeah.

2 MR. SORSHER: I have to admit, I haven't really
3 scrutinized the work plan for the isotopic analysis.

4 Are you -- are you going to get any samples
5 from further upgradient in the Verdugo basin, the Valley
6 County wells, or the La Canada irrigation district?

7 MR. SLATEN: What have we got?

8 MR. FIELDS: We've identified that we would like to
9 take a sample from Valley Water Company. We still have
10 to work out to get at least a verbal agreement with them
11 to do that.

12 MR. SLATEN: What I'm working on with the water
13 companies is since it's a fairly simple -- just to drive
14 a tank truck on, fill it up with 2,000 gallons of water
15 and drive it away, just a simple verbal agreement to do
16 that. Nothing more complicated, I hope.

17 MR. O'KEEFE: Those wells, I believe, are ASR
18 wells, Valley Water Company?

19 MR. FIELDS: Meaning they inject and extract?

20 MR. O'KEEFE: So it would seasonally vary.

21 MR. SLATEN: Yes. And it could be that all we
22 would get might be injected water, depending on the
23 time. So we'd have to consider whether that's
24 appropriate or not.

25 Might be a good place to get a sample of mixed

1 Met water.

2 MR. O'KEEFE: Yeah.

3 MR. SLATEN: But it might be a more straightforward
4 way of getting that. But we still have -- we need some
5 operational flexibility as we get closer to sampling,
6 exactly which -- where we sample.

7 MR. O'KEEFE: Well, I think they pump them
8 typically until May, so I think we're right around that
9 time where they switch from pumping to injecting, if
10 that can work with your schedule.

11 MR. PESCI: Just as an FYI on the ASR operation,
12 plenty of water on the state system this year, and so
13 injection water will probably continue. So we'll
14 probably be putting water in the ground as long as we
15 can. As long as it's available, we'll put -- we'll
16 replenish the water in the ground, and have been doing
17 so since December to the tune of about 180 acre feet per
18 month. So there's a lot of injection water around the
19 wells right now. We've been using both wells, 2 and 3.

20 MR. SLATEN: So it may be difficult for us to get a
21 good upgradient background groundwater sample.

22 MR. PESCI: From those wells, yes.

23 MR. FIELDS: We have identified both 19 and 21,
24 which are wells that are kind of south of the facility,
25 which are more in the flow path from the groundwater

1 from the northwest.

2 MR. SLATEN: In which case we're probably getting
3 some mixture of water injected up here and negative
4 water flowing naturally.

5 Okay. To talk about our -- the MW-26 that we
6 drilled recently, we encountered bedrock at 250 feet
7 below ground surface, which was a good -- apparently
8 100 feet or better higher than we -- than was expected
9 by some modeling that's been done or the modeling that
10 was done by the Raymond Basin Management Board.

11 So remodelers, we're evaluating that right now.
12 We're not ready to talk about what that might mean as
13 far as the flow out of the Raymond Basin.

14 MR. SORSHER: What depth was that?

15 MR. SLATEN: 250 feet below ground surface we hit
16 bedrock, which we were surprised how shallow it was.
17 And that means there's only about a hundred feet of
18 saturated interval above the bedrock. So it may have
19 some indications about the ability to flow south out of
20 the Monk Hill into the rest of the Raymond Basin.

21 MR. ZAIDI: It's also recreating a topographic
22 height --

23 MR. SLATEN: There obviously is a -- some kind of
24 mound or ridge.

25 Now, we know the Monk Hill further off to the

1 east is definitely a big granite outcropping, so just we
2 need to evaluate that, and we just haven't had the time
3 to do that yet.

4 MR. ZAIDI: That might be dividing the groundwater
5 basins.

6 MR. SLATEN: Definitely does, and it has been known
7 to do it. It's just it may divide it more than we
8 thought.

9 We need to look at all the other data that's
10 around there. There are other borings, there are other
11 data that the other modelings have been based on and
12 just to see if that changes any of our ideas about --

13 MR. ZAIDI: You can make -- construct a depth to
14 bedrock map.

15 MR. SLATEN: Yes. There are -- they have been
16 constructed, but now, with this additional information,
17 we have to consider whether further refinement is
18 appropriate.

19 MR. SORSHER: Are there geophysical methods that
20 can be used to get that information?

21 MR. SLATEN: We're thinking about that as well.

22 MR. ZAIDI: Gravity would help. Gravity, I think,
23 is a good candidate for that.

24 MR. SLATEN: In my -- I'm not sure it works on the
25 scale we need to, but we're considering it.

1 MR. ZAIDI: Yeah. It may be used on a very large
2 scale, not small scale. Right.

3 MR. SLATEN: Okay. So in that well, we're only
4 putting in two multi-port sampling intervals, because we
5 only have 100 feet or so of saturated interval. And
6 we'll start sampling that in our next sampling round in
7 May.

8 MW-25, we submitted the well construction
9 report on March 30th, and we do have initial results out
10 of that well that we talked about.

11 So the initial results, a little bit
12 interesting here; five screens results for carbon tet,
13 TCE, PCE, perchlorate.

14 Perchlorate, according to the EPA method and
15 the LCMS method. There obviously is perchlorate
16 somewhere in the screens. There is the -- as you can
17 see, the detections don't line up exactly, so it makes
18 us wonder if there was some mislabeling either in the
19 field or the laboratory of the results, or whether this
20 is real and it's just that sometimes you see perchlorate
21 in one method and not in another. I don't think we'll
22 ever know the answer to that.

23 We will go back out, though, on our next round
24 of sampling and sample all these again for both -- and
25 use both methods to see if we can get correlation of

1 where -- exactly where it's located.

2 Anything else to say about that, Keith?

3 MR. FIELDS: The data that was reported in that
4 construction report, which was still preliminary, did
5 see perchlorate at screens 2, 3, and 4. So we just --
6 we need more data to understand exactly whether or not
7 it's in screen 2 or not.

8 MR. SLATEN: And the longer the well sits there
9 also, the better the natural groundwater flow flushes
10 out any cross-flushing of water that happened during the
11 drilling. So the longer -- we expect better results
12 next round of sampling.

13 MR. ZAIDI: Is there a reason why the screen
14 interval 4 and 5 were not analyzed? They were not --

15 MR. SLATEN: They were all analyzed.

16 MR. FIELDS: With the LCMS methods, we just took
17 select samples to confirm results from the 314 method.
18 Those were the two screens that we had selected.

19 MR. SLATEN: But next time we will analyze for
20 every screen with both methods.

21 MR. ZAIDI: Yeah. Because there is a significant
22 difference between the second screen, between the EPA
23 314 method and the LCMS MS method.

24 MR. SLATEN: Yes.

25 The piper plot for this well, for the water

1 types, you see water type 1, 2, 3 -- I'm sorry -- screen

2 1, 2, 3, 4, 5, and the water types.

3 Keith, you're better on explaining this. Do

4 you want to --

5 MR. FIELDS: Yeah. Historically, we've identified

6 three types of water. One is water that we see beneath

7 the JPL facility, and it's locally originating water,

8 similar to what we see coming out of the San Gabriel

9 Mountains; has low TDS and higher -- lower sulfate and

10 chloride concentrations.

11 Type 2 is what we've seen historically in very

12 deep portions of the aquifer, and it's -- I think it has

13 higher -- whatever it is. It has a little bit different

14 water quality.

15 And then the type 3 is what we've seen in the

16 RI was associated with a mixture of Type 1 water and

17 Met Water, Metropolitan Water District from the

18 Colorado River.

19 So these water types, we've looked at those a

20 lot in the past, and so we plotted out the tip -- you

21 know, where all of our other data has fallen. And then

22 the screen intervals -- the water quality that we

23 identified in monitoring well 25.

24 And so what you see is the top screen looks

25 very similar to type 3 water, which makes sense that if

1 there was some Met water injected or infiltrated down,
2 you would see that in the uppermost screen.

3 Three and four look close to Type 1, Screen 5,
4 which is the deepest screen; looks very close to Type 2,
5 which makes a lot of sense.

6 And then in the second screen interval -- this
7 is probably the most interesting -- it looks to be
8 closest to just pure Met Water.

9 MR. SLATEN: Virgin Met Water.

10 MR. FIELDS: Which we haven't quite figured out yet
11 how that would be. But that's what the water quality
12 looks like.

13 And if you look -- all the screens look to be
14 kind of shifted up towards the Screen 2.

15 And what we think is that it's still
16 fibrillating. And those -- when we did the first
17 sampling, all of the samples were -- all the screens
18 were hit like right here. You know, all the water
19 qualities are exactly the same because it had been all
20 mixed up.

21 And so now that it's kind of (inaudible) out,
22 and we're starting to get true formation of water.
23 They're moving back to where we expect them to be along
24 the lines originating from that point.

25 So that's why I think these are skewed up a

1 little bit. And we expect, as we continue to sample for
2 these -- these screens, the water quality to be moving
3 more towards along this line that we see with every
4 other -- all of our other water quality.

5 But what is interesting is screen 2, and its
6 water quality is significantly different from Type 2, 3,
7 or 1 that we've seen historically.

8 MR. SORSHER: And this is -- this well is quite
9 close to Bangham, Copelin, and Sunset wells, which I
10 don't know when the last time Met Water was injected
11 into any of them.

12 MR. TAKARA: Probably back around '94.

13 MR. FIELDS: There's plenty of other sources where
14 water from Metropolitan Water District could get into
15 this area. I mean, there's --

16 MR. SLATEN: Some major feeder line that runs --

17 MR. FIELDS: Feeder line that runs up there.

18 MR. SLATEN: -- right upgradient.

19 MR. FIELDS: There's the 4 percent -- 2 to
20 4 percent of the City's water is used by the golf course
21 there. It's not too far away.

22 You have leaking underground -- or you have
23 water distribution lines that can leak 10 percent.

24 I mean, so there's plenty of ways that water
25 that's used in the distribution system could get to the

1 groundwater; people irrigating their lawns, things like
2 that.

3 MR. O'KEEFE: You say the Met feeder might be
4 leaking?

5 MR. SLATEN: No.

6 MR. O'KEEFE: You're not saying that? Okay.

7 MR. SLATEN: What size is the Met feeder there?
8 It's probably big enough to drive a car through?

9 MR. TAKARA: Yes. It's a very large line --

10 MR. PESCI: I think it's about eight foot.

11 MR. SLATEN: Okay. There's a very large Met feeder
12 runs right through there. I have no other information
13 about it except it's a Met feeder, and apparently it
14 does have water in it.

15 MR. O'KEEFE: Okay.

16 MR. SORSHER: Leaked to some degree.

17 MR. FIELDS: But more to come on this.

18 MR. SLATEN: I think we talked about 97-005
19 completely thoroughly earlier, didn't we?

20 MR. PESCI: I have a question on the Met Water.

21 With the variation that we've seen -- because that's

22 water coming -- it's a blend, and sometimes it's

23 Colorado River water, sometimes it's State water, and a

24 lot of time it's any combination between.

25 So how do you distinguish between those two

1 traces of Met Water? There should be two different
2 signatures altogether, the State water versus Colorado
3 water.

4 MR. SLATEN: I don't know.

5 Keith.

6 MR. FIELDS: What we really are looking at is water
7 that's not a year old or two years old or three years
8 old. We're looking at water that may be 10 years old,
9 15 years old, where historically much more of the
10 Colorado River water was used in this area. You know,
11 since '41, when they made the connection, it was almost
12 exclusively, from my understanding, the Colorado River.

13 So what we're looking at is really trying to
14 say -- we're saying Met Water associated with Colorado
15 River water.

16 And also if we're seeing -- if we see that
17 water quality and, you know, everything else leads us to
18 believe it's Metropolitan water and it has perchlorate
19 in it, then we're -- then that is further indication
20 that it's Colorado River, because their State water
21 project doesn't have --

22 MS. ARTEAGA: So where was the sample taken as
23 indicated on as (inaudible) being Met water?

24 MR. FIELDS: Those two X's?

25 MS. ARTEAGA: Yes.

1 MR. FIELDS: Those were from -- data from the
2 Colorado River.

3 MS. ARTEAGA: So that should not be what he's
4 saying is a combination of the two sources?

5 MR. FIELDS: No. That would be straight when we
6 say -- we should say MWD Colorado River.

7 MR. O'KEEFE: And MWD varies their percentages as
8 State water project and Colorado River.

9 Do you -- have you looked into that? It may
10 not have been historically Colorado River water used
11 locally. It may have been varying percentages of State
12 and Colorado River water.

13 MR. FIELDS: It's our understanding that most of it
14 has been Colorado River, up until recently when
15 perchlorate became an issue.

16 MR. O'KEEFE: I wouldn't know. I'm just raising
17 the question.

18 MR. LOPEZ: Aren't there any (inaudible) --

19 MR. PESCI: Yeah. I think he indicated they were
20 looking at water that was ten years past. So
21 back then it should have been no more than 25 percent,
22 John. Because recently within the last '93, '94,
23 beyond, you're seeing blends up to 50, up to a hundred
24 percent State water. So if it was ten years plus, fits
25 that time frame, so very possibly you have 50/50 State,

1 Colorado.

2 MR. SLATEN: Let's scroll down.

3 I think we talked through these issues on the
4 97-005 already.

5 Then we had on the agenda --

6 MR. O'KEEFE: We haven't talked Sunset.

7 MR. SLATEN: Right.

8 So, Gary, do you want to give us an update on
9 what's new with Sunset --

10 MR. TAKARA: I thought it was rather interesting to
11 see Bob's chart. I don't have any charts to share with
12 you, and I apologize. But just for -- just to give you
13 guys a big picture of the Sunset, we have -- again, for
14 some of you who might not be familiar with our Sunset
15 systems, we have five wells that blend into a single
16 reservoir. That's how -- that's why we give it the name
17 Sunset Reservoir wells.

18 Between February 2003 and December 2004, three
19 of those five Sunset wells had been trending upwards.
20 This is all strictly perchlorate. These three wells
21 include Sunset, Copelin, and Bangham well.

22 For Sunset, February 2003, we had around 12
23 parts per billion; Copelin around 11; and Bangham we had
24 about four parts per billion.

25 Between February 2003 and November slash

1 December 2004 -- again, very similar to Bob's chart --
2 Sunset had been trending upwards from 12 to 32 parts per
3 billion; Copelin went from 11 to 25 parts per billion;
4 and Bangham went from 4 parts to 17 parts per billion.

5 Now --

6 MR. O'KEEFE: (Inaudible) CTC?

7 MR. TAKARA: No. I'm just referring to
8 perchlorate. I didn't bring any of that --

9 MR. FIELDS: They haven't detected from the data --
10 we have detected carbon tet in those wells.

11 MR. TAKARA: Let's see. Bob's chart.

12 MR. O'KEEFE: So the perchlorate trend is similar
13 to the Lincoln Avenue, but it's not the same CTC trend?

14 MR. FIELDS: There's never been CTC levels.

15 MR. TAKARA: Now, let's see. November, December
16 2004.

17 Okay. Now, between -- around January 2005 and
18 April 2005, similar to Bob's chart, the trends have been
19 trending downwards. This is now for all four wells it's
20 been trending downwards, with the exception of one well,
21 Copelin.

22 Now, for Sunset it went from 32 parts back to
23 12 parts per billion. Copelin went from 25 parts, and
24 it stayed -- remained at 25 parts per billion. And
25 Bangham went from 17 parts in late '04 back to 5 parts

1 per billion.

2 So I thought that was kind of ironic to see
3 Bob's chart showing the similar trend downwards,
4 although we're pumping from totally two different
5 aquifers -- sub-aquifers, I should say.

6 Now, let me add just the last two wells,
7 Garfield well and Villa well.

8 MR. ZAIDI: You have a map showing all these wells?

9 MR. TAKARA: Not on me. Is there any --

10 MR. FIELDS: What was your question? I'm sorry.

11 MR. ZAIDI: A map showing all these wells.

12 MR. FIELDS: Where they're at?

13 MR. ZAIDI: Yeah.

14 MR. SLATEN: We may not show all of them, but
15 there's the one that showed our MW-26.

16 MR. ZAIDI: Yeah. Something to help.

17 MR. TAKARA: There you go.

18 MR. FIELDS: Three of them -- yeah, these are the
19 three that Gary was just talking about, and the other
20 two are in this area, maybe, Gary?

21 MR. SLATEN: A little off the map.

22 MR. TAKARA: Yeah. Almost due east of that, about
23 maybe half a mile, a mile, somewhere around there.

24 MR. SLATEN: Somewhere just off the -- almost off
25 the map.

1 MR. TAKARA: That would be the Garfield and Villa
2 well.

3 For Garfield well, I looked back at the trend,
4 all the way back to 2001. Between April 2001 and July
5 2004, Garfield well has remained relatively constant.
6 Pretty much nondetectable, five parts per billion.

7 Around the August 2004 time frame to February
8 2005, it started to show a trend upwards; went from four
9 parts to around ten parts per billion.

10 And again, like all the other wells, in the
11 last two months, March and April, it started trending
12 back from ten back to four parts per billion.

13 For Villa well, again, beginning back in April
14 2001, it averaged around six parts per billion, and it
15 remained there pretty constant all the way to July 2004
16 where we had -- a significant amount of data showed
17 around four parts to nondetect. And the only data that
18 we have since then is August 2004. It went from a four
19 nondetect -- four slash nondetect to eight parts per
20 billion. And we haven't taken any samples from that
21 because of some well problems.

22 MR. SORSHER: July '04 to August of '04. Okay.

23 MR. TAKARA: Okay. That went from four slash
24 nondetect to eight parts per billion.

25 So it was really interesting to see Bob's

1 chart, and it's almost the same time period where his
2 really started to spike upward, and it was the same
3 thing for most of our Sunset. It was around that
4 February 2003, and it just started spiking upwards to
5 the end of 2004.

6 And then, all of a sudden, like clockwork all
7 four wells starting trending down almost back to its
8 historical levels. It was a dramatic change.

9 MR. SORSHER: You haven't been pumping these wells
10 continuously?

11 MR. TAKARA: With the exception of Garfield. We've
12 been blending that water with Met water, but that's the
13 only one.

14 And between these time periods with Villa, we
15 intermittently had it turned on when Met had switched
16 100 percent State water to project water.

17 So we took advantage of that lower perchlorate,
18 and we were able to blend it with some Villa -- some
19 water from Villa and Garfield. But now, since it's back
20 to a 60/40 split, we've been operating on the Garfield
21 well.

22 MR. SORSHER: So Garfield is the only one --

23 MR. TAKARA: Garfield is the only one that remains
24 on. All the others have been shut off.

25 MR. SORSHER: Were they on previously in the

1 February '03, December '04 time period?

2 MR. TAKARA: Yeah. I think so. Sunset, Copelin --
3 yeah, I think we did. We did because, again, it was for
4 the same reason. Met gives us a hundred percent State
5 water project.

6 MR. O'KEEFE: But over time, I know you've switched
7 (inaudible) based on your ability to blend --

8 MR. TAKARA: Right. Garfield is the one that's
9 been continuously. All the others were pretty short.
10 When we were a hundred percent and immediately shut it
11 off.

12 MR. LOPEZ: I don't know if Pasadena was aware, but
13 Las Flores, when I first came on, was -- at that time
14 had their wells shut down just prior to my (inaudible)
15 in the summer of '02. And we had (inaudible) project
16 that I completed.

17 And we came back on right at the end of March
18 when you said those numbers dropped again, and we
19 started pumping around March -- actually, March 30th,
20 31st, and April. That may shed a thin light on that.
21 Maybe you can -- when you say a mile east, we're just
22 above you there at Mountain View, by Fair Oaks. And so
23 we started pumping, and we're pumping ever since.

24 MR. TAKARA: March '05?

25 MR. O'KEEFE: No. We started around March '03.

1 That would be March and fully in April. We'll be doing
2 some tests the last couple of days of the month to get
3 our samples back and start pumping fully again.

4 In April we (inaudible) PCEs and blend out
5 perchlorate.

6 So it's funny that you said at that time they
7 dropped back down about March '03.

8 MR. TAKARA: No, no, no. I'm referring -- if
9 you're talking about the -- most of the wells started
10 dropping around January '05.

11 MR. O'KEEFE: Oh, you're talking about '05. I'm
12 sorry. I'm sorry.

13 MR. TAKARA: Yeah, differentials.

14 MR. FIELDS: You think it's --

15 MR. O'KEEFE: Recharge.

16 MR. FIELDS: -- recharge, rainwater?

17 MR. TAKARA: Not sure. Because when you think
18 about the summer of '04, it was fairly dry, even -- it
19 wasn't until October or November '04 when we really had
20 any rain.

21 MR. FIELDS: And your levels were higher before
22 that point; right?

23 MR. TAKARA: Yeah.

24 MR. FIELDS: And then they've dropped since we've
25 had the rain?

1 MR. TAKARA: Right.
2 So it might have been because of that recharge,
3 (inaudible) recharge?
4 MR. TAKARA: Not sure.
5 MR. FIELDS: (Inaudible) Pollution, or something.
6 MR. TAKARA: Could be. Although I think in the
7 basin modeling, it doesn't show a significant rise in
8 the groundwater table from those wells.
9 MR. FIELDS: It's hard to --
10 MR. TAKARA: It's really hard to say what's going
11 on.
12 MR. SORSHER: That's from the Raymond Basin report
13 (inaudible). I have the CD.
14 MR. O'KEEFE: It's in color.
15 MR. SORSHER: Yeah.
16 MR. SLATEN: Okay? We're through with the --
17 MR. TAKARA: Oh, I'm sorry. Just quickly, I just
18 want to update you on the east side wells.
19 East side wells, we have five wells on the east
20 side -- I'm sorry -- six wells on the east side.
21 If you recall, back in the summer of '04, July
22 '04, we had a very large spike in the perchlorate from
23 our Monte Vista well. That went from around four and a
24 half parts all the way up to seven and a half parts.
25 That was -- also coincides with the increases

1 we had in the five Sunset wells. So that was alarming
2 to us, and that's the reason why we shut the Monte Vista
3 well off for that reason.

4 MR. SORSHER: Summer of '04?

5 MR. TAKARA: Summer -- July, August of 2004, Monte
6 Vista well.

7 Since then, we were able to -- just within the
8 last month or so or -- about the last month, we were
9 able to turn back the Monte Vista well back into
10 operations, and now we're back to levels of barely four,
11 maybe nondetect, from that well.

12 When it comes to the other five wells, it's
13 pretty much either nondetect or around four and a half
14 parts. We had one occasion of five parts from one well
15 and that was -- the next month, it just dropped right
16 back to four parts.

17 So it's been relatively flat on the east side
18 with the exception of the late fall '04, just slightly
19 started to spike upwards. But immediately in the last
20 couple of months they started all trending back down.

21 MR. FIELDS: In the fall of '04 is when you saw the
22 spikes at all the wells we've just talked about, at
23 Sunset and at the east side wells?

24 MR. TAKARA: Yeah. That would be pretty much the
25 peak. The Sunset side, that was pretty much the peak in

1 the November, December time frame '04, and since then,
2 it started to trend downwards.

3 On the east side wells, at the same time,
4 beginning November, December, it started to spike
5 slightly upward for about a few months, and then right
6 back down again, back down to nondetect.

7 MR. SORSHER: Do you see any CTC in those east side
8 wells?

9 MR. TAKARA: I don't have that data.

10 MR. SORSHER: I don't think you do.

11 MR. ZAIDI: Gary, you may compare the increase with
12 rainfall.

13 MR. TAKARA: Okay. What?

14 MR. ZAIDI: You may correlate the increase in the
15 concentration with the rainfall.

16 MR. TAKARA: Did I?

17 MR. ZAIDI: No. You may --

18 MR. TAKARA: Oh, I see what you're saying.

19 MR. ZAIDI: -- try to analyze that. Maybe because
20 of like Keith was saying, maybe because of the recharge
21 because of the rain, it got lower.

22 MR. TAKARA: Well, that's a possibility. I mean,
23 but I'm just not sure exactly how much of that water
24 gets back into the ground.

25 MR. SORSHER: You know, I was looking at the

1 Raymond Basin's baseline groundwater assessment report
2 that these gentlemen provided me about a year ago --
3 it's on a CD --

4 MR. TAKARA: Yes.

5 MR. SORSHER: -- and it's got some really good
6 maps, interesting maps.

7 There's a bunch of other injection wells on the
8 east side of Pasadena as well. And so what you may be
9 seeing on the east side wells may be some low levels of
10 perchlorate from those injection wells, you know, sort
11 of on a regional type basis. And they haven't been
12 spiked -- you know, they haven't been -- you know, you
13 haven't been getting the 10, 20, 30 type numbers.

14 MR. TAKARA: Injection from which agencies?

15 Are you talking about from the Raymond Basin?

16 MR. SORSHER: Yeah.

17 MR. TAKARA: Okay.

18 MR. SORSHER: Aren't there some -- I thought I saw
19 some injection wells on the --

20 MR. TAKARA: Most of the -- a lot of the new wells
21 that we install are both injection wells and extraction,
22 but we haven't exercised any of those --

23 MR. SORSHER: What about farther north?

24 MR. TAKARA: That would be Kinneloa but --

25 MR. SORSHER: I thought I saw one of the -- one of

1 the --

2 UNIDENTIFIED SPEAKER: Valley is (inaudible).

3 UNIDENTIFIED SPEAKER: Valley --

4 MR. SORSHER: Valley is the one I know of.

5 You don't have any injection further east?

6 MR. O'KEEFE: No.

7 MR. TAKARA: Like I say, there might be injection

8 wells, but whether or not the --

9 MR. SORSHER: Were there any prior ones? I could

10 have sworn I saw some.

11 MR. O'KEEFE: You said "La Cañada."

12 MR. SORSHER: No. That's over here, the other

13 site.

14 MR. O'KEEFE: That's not for us to figure out how

15 it moves.

16 MR. SORSHER: But --

17 MR. FIELDS: Gary, yesterday you had indicated that

18 you still sample -- take a sample from the Sunset well?

19 MR. TAKARA: All five of the -- well, actually

20 four. Villa well, we had some mechanical problems with,

21 so we're still trying to address that well.

22 MR. FIELDS: I'm wondering if we couldn't get in

23 and take -- do some -- and that would be an important

24 place to get the perchlorate isotopes in. You think we

25 could maybe write up a short PSB to bring a truck in and

1 fill up 2,000 gallons from Sunset well and Garfield
2 maybe?
3 MR. TAKARA: That shouldn't be a problem. Have to
4 work that over with the operations.
5 MR. FIELDS: We'll start working on that with you
6 right away.
7 MR. O'KEEFE: Gary, were you going to give any
8 update on your plans to (inaudible) treatment and was
9 there any information about that?
10 MR. TAKARA: This is referring to our Sunset
11 perchlorate treatment plants. We brought in Stetson
12 engineers around March -- around March '05 -- February,
13 March '05, and we met with them. We're in the very
14 early stages of the planning. They had sent out their
15 surveyors to do some surveying. They met with
16 (inaudible) to go over some of the water quality issues.
17 They've been asking -- it was more of a
18 research. They're strictly in the research phase right
19 now; gathering piping and existing plans for the Sunset
20 reservoir wells. So nothing really had developed in
21 regards to the preliminary plans.
22 MR. O'KEEFE: Okay. 'Cause the -- it's
23 interrelated to your isotope study because we were
24 hoping to have some better understanding of the results
25 of your study before we could really proceed with the

1 Sunset well treatment proposal.

2 So is that going to work? Are you six months
3 away from reaching any conclusions from your study or --

4 MR. SLATEN: At least.

5 MR. FIELDS: At least.

6 MR. SLATEN: It'll take -- I mean, because a lot of
7 these analyses are done by university labs, it's not
8 like we get ten-day turnaround. It's going to be ten
9 weeks, three months, four months.

10 MR. SLATEN: Also, be aware that this study may not
11 get definitive answers.

12 MR. O'KEEFE: I understand.

13 MR. SLATEN: We can hope that they would give us
14 some definitive answers, but we can't guarantee that.

15 MR. SORSHER: The relative time frames for those
16 two treatment projects, the Monk Hill four wells in the
17 north and the Sunset treatment further south, it sounds
18 like the Monk Hill is moving -- going to happen sooner
19 than the Sunset treatment. Is that --

20 MR. TAKARA: It is --

21 MR. SORSHER: I'm just trying to get a --

22 MR. FIELDS: It will be a neck-and-neck race,
23 probably.

24 MR. SORSHER: Yeah. Regarding the time schedules,
25 we're looking at probably about close to the same

1 startup, if everything goes well.

2 MR. O'KEEFE: Not ideal --

3 MR. SLATEN: Why don't we take a short break for
4 just a few minutes.

5 (A recess was taken.)

6 MR. SLATEN: I think we got most people back in,
7 and as I indicated, people didn't want to get out before
8 going to lunch today.

9 So the next thing on the agenda was the OU-1
10 update. This is --

11 MR. SORSHER: Do we need to talk about this
12 groundwater monitoring update?

13 MR. SLATEN: Didn't we move that up, Keith?

14 MR. FIELDS: I mean, we talked about we could move
15 it up, if we wanted to.

16 MR. SLATEN: Do you want to -- let's see.

17 MR. FIELDS: We don't have a whole lot to say about
18 it.

19 MR. SLATEN: No. We'll be into it in five minutes.

20 UNIDENTIFIED SPEAKER: Okay. Go ahead and go to
21 it.

22 MR. SLATEN: OU-1 treatment plant, my new baby
23 on-site has been operating and pumping water for quite a
24 few weeks now. We submitted the first quarter progress
25 report.

1 We made one discharge to the sanitary sewer
2 from the clarifier of 12,000 gallons, which is still a
3 lot less than what we've added to the system from
4 rainwater and washwater and everything. So we're in a
5 positive as far as water balance and how much water we
6 take out and reinject.

7 Do we have any other details about -- yeah, we
8 do. I'll just go ahead.

9 We also want, on the CERCLA approach for this,
10 to add this to the interim record of decision, to kind
11 of move this towards a ROD so that's part of the new FFA
12 schedule as well.

13 Next.

14 So total volume, 4.75 million gallons
15 extracted, treated, and reinjected. Actually, a hair
16 more than that reinjected because of all the rain that
17 we had fall into the pad, which gets captured, treated,
18 and reinjected.

19 Seventy-eight pounds of perchlorate removed
20 already, 1.37 pounds of carbon tet, and a third pound of
21 TCE removed by the new system.

22 Next.

23 The average perchlorate from the extraction
24 well 1 is about 2000, from extraction well 2 is about
25 1500, so we're getting a good concentration of

1 perchlorate into the system.

2 We're getting -- also getting reasonable
3 concentration of carbon tet into the system, all of it
4 being removed.

5 We're at about 150 gallons per minute. We may
6 be gradually moving and see how it behaves up to about
7 200 gallons per minute soon.

8 And the first LGAC is still working well, no
9 breakthrough VOCs in the first LGAC. And we're
10 measuring the nitrate and perchlorate by field
11 instruments often and by laboratory analysis at least
12 weekly right now.

13 MR. ARTEAGA: What kind of field instruments are
14 you using?

15 MR. AMINI: Field instrument, I think it's the
16 Dionex probe that we use for measuring perchlorate. It
17 can go down to about -- I think the standard deviation
18 is about point one (inaudible), so you have to confirm
19 that with the laboratory test. We take samples on a
20 weekly basis and send it to the state certified lab to
21 get the more detailed concentration.

22 MR. FIELDS: They get down to a hundred --

23 UNIDENTIFIED SPEAKER: Parts per billion.

24 MR. FIELDS: -- PPB. Below that, it's outside its
25 calibration range.

1 MR. O'KEEFE: I know that Dionex does have units
2 that go much lower than that.

3 MR. FIELDS: Which are several hundred thousand
4 dollars.

5 MR. O'KEEFE: Yes. Very expensive.

6 MR. SLATEN: And our laboratory analyses have come
7 up nondetect consistently.

8 Next.

9 MR. ZAIDI: What -- the (inaudible) selected probe
10 that is used as a feed instrument, does its detect
11 levels, like I said, like .1 milligram, which is hundred
12 microgram per liter?

13 MR. SLATEN: Correct.

14 MR. ZAIDI: And when you send it to the lab, it
15 comes out to be less than 2.7.

16 MR. SLATEN: Correct.

17 MR. ZAIDI: They're collected only weekly;
18 right?

19 MR. SLATEN: Correct.

20 MR. ZAIDI: But this is a constant instrument?

21 MR. AMEDI: It's happening on a daily basis, yes.

22 MR. FIELDS: We use that more as an indication of
23 performance. You know, just to say okay, we have this
24 much perchlorate load coming in. Yes, it looks like we
25 have -- you know, it's being removed within the FBR.

1 But we're not using it to say this is the level.

2 They're just field measurements, like any field
3 measurements.

4 MR. ZAIDI: It's kind of semi-qualitative.

5 MR. AMINI: Right. We have been doing this over
6 several weeks to establish a correlation between what we
7 are reading in the field. We can read like .07
8 milligrams per liter, but it doesn't say anything because
9 your standard deviation is .1; right? So we kind of
10 confirm that by sending it to the lab.

11 And every time you see this .07, you kind of
12 know there is nothing over there, but we have to prove
13 that. That's why we do weekly sampling and send it to
14 the lab.

15 But on a daily basis, it has a reading below .1.
16 So we kind of know it's nondetect, but we just try to
17 establish a correlation by weekly sampling over several
18 weeks.

19 MR. SORSHER: You know that your bugs are still
20 alive.

21 MR. AMINI: Oh, yeah.

22 MR. SLATEN: If there's an upset, there's
23 other things will tell us quickly that there
24 is something going on.

25 MR. AMINI: Yeah. They're probably referring to

1 monitor nitrates, sulfate, all oxygen (inaudible).

2 They're all basically showing that that perchlorate has
3 been constantly removed.

4 MR. SLATEN: So we are learning how to operate the
5 system. It's been a good learning curve for us. And so
6 we're going to have experience in a system like this. I
7 think we will probably end up writing lessons learned
8 about it one of these days to share with the world.

9 This OU nitrate removal does -- is interesting
10 in itself. It shows that the effluent of nitrate is --
11 since about the third week in March -- went down to zero
12 once we had the system up, running, and balanced the
13 acetic acid dosage.

14 And it also shows the -- that there was some
15 removal between the two top -- the two top lines show
16 some removal I guess in the GAC of nitrate at first.

17 Let's go to the next one.

18 So this shows the field data for nitrate
19 removal as well, which does correlate. And perchlorate
20 removal between the FBR line on the bottom and the plant
21 influent on the top shows the removal by the LGAC until
22 breakthrough.

23 Anything else on that? That's all.

24 MR. FIELDS: I mean, all the weekly sampling we've
25 taken from the effluent have been nondetect.

1 MR. SLATEN: Okay.

2 MR. ZAIDI: One thing that -- giving tables is
3 good, but I would like to see maps. If we can put the
4 groundwater (inaudible) map, elevation (inaudible) map
5 for all the wells, and also probably the production
6 wells too. So we can correlate whether in this period
7 groundwater elevations here and whether downward
8 elevations here in the collection wells, similar to
9 concentrations of only the significant contaminants,
10 like perchlorate and organics, and maybe one
11 (inaudible), also, if possible.

12 If you may put these (inaudible) iso
13 concentration maps together and that way (inaudible)
14 recorded (Inaudible) every quarter.

15 MR. FIELDS: (Inaudible) progress, but we can put
16 that (inaudible) --

17 MR. SLATEN: The quarterly report sets the type of
18 data that we will report, the max.

19 MR. ZAIDI: Yeah. Because that's very easy to look
20 at and also just defines where we have what
21 concentrations.

22 I am going through the tables. It will save a
23 lot of a time.

24 MR. SLATEN: This graph is the perchlorate removal.
25 It shows that on our effluent we've consistently been

1 taking off the perchlorate.

2 And on the FBR influent went up with
3 breakthrough through the GAC of the perchlorate. And
4 it's a pretty picture.

5 MR. O'KEEFE: Do you get many visitors?

6 MR. SLATEN: Yeah. We've had -- we've had a few
7 visitors. It's a nice place to take people on a tour.
8 I'm glad, of course, to have anybody over to look at it.

9 Who have we had so far?

10 The acting NASA administrator came by a couple
11 of weeks ago and spent a few hours with us here, so that
12 was kind of an important day for us.

13 MR. O'KEEFE: But any other public water utilities?

14 MR. SLATEN: No. Who's -- who's told me they would
15 like to come by and look at it? I mean, I hear from
16 people that would like to come by, but they --

17 MS. GARNER: Bob Hayward.

18 MR. SLATEN: Bob came. But haven't had -- no.

19 MR. O'KEEFE: I don't want to invite them, but I
20 just want to know if they come. So I want a heads-up.

21 MR. SLATEN: Okay. Specifically, like other water
22 utilities or --

23 MR. RIPPERDA: He wants to know what purveyors are
24 thinking about using biological.

25 MR. SLATEN: Talk about using. I don't know of

1 anybody who's thinking about using, but Bob did this
2 morning leave me a -- let me see if I can -- Bob wants
3 me to take -- to set up a time to get his, Tony and the
4 Water Quality Control Committee -- I guess the Raymond
5 Basin Management Board -- to come by and take a look.

6 Okay. Moving right on to the OU-2 soil vapor
7 extraction. This goes all the way back to the
8 beginning, and you can see that we have diminishing
9 returns these days, especially the last time we moved
10 back to VE-01.

11 MR. FIELDS: Yes. The --

12 MR. SLATEN: Do we have another one on this, or do
13 I need to talk?

14 Okay. This really shows diminishing returns
15 back at VE-01. When we moved it back in late December,
16 turned it back on, we got a little bit of return when we
17 first turned it on, and then it went asymptotic pretty
18 quickly.

19 So in March we took it and reset it up -- just
20 the stuff on screen A -- which is where you can see back
21 in December where we got all our -- almost all our
22 return, and it didn't show us getting anymore return,
23 just concentrating on screen A. So it's about time to
24 think about moving it to the next location.

25 Is there anymore on --

1 MR. SORSHER: Are these screens intersecting any
2 significant clay layers? Because the clay would hold
3 the solvents tighter than the sand or --

4 MR. FIELDS: We wouldn't know that, necessarily.
5 Certainly, that's the theory on the rebound, because
6 then, you know, you'll see nothing and then you'll see
7 the concentration rebound. And it's theorized that it's
8 trapped in these lower permeability layers (inaudible)
9 and when you're operating it, you don't see it so it
10 could have rebound. But we do see some rebound. It
11 certainly diminishes over time.

12 MR. SLATEN: But the mass that you see that we've
13 gotten this time around -- it was 2.5 pounds -- was that
14 the total mass?

15 MR. FIELDS: That's the total per carbon tet.

16 MR. SLATEN: Okay. In the last few months. And
17 that all happened within the first couple of weeks,
18 almost.

19 MR. FIELDS: Uh-huh.

20 MR. SLATEN: Anything else on the SVE, or is this
21 it?

22 MR. FIELDS: Yes. I think we had a couple more
23 bullets, but as far as what we plan to do...

24 MR. SLATEN: For the OU-2, the SVE, we're going to
25 move to VE-03 next and focus on one screen at a time and

1 just see what the recovery looks like there so we can
2 analyze each individual screen.
3 But we're getting pretty close to the point
4 where we're going to propose shutting down the system
5 probably, and just taking care of VOCs as part of the
6 groundwater remedy. I expect that we would like to do
7 that this year.

8 The groundwater monitoring, we submitted the
9 first quarter 2005 tech memo April 21st. We still see
10 our highest levels of perchlorate near the source.
11 That's not unusual, although those levels are lower than
12 some we've seen in the past.

13 And that MW-20, it's been less than four parts
14 per billion. That's out in the -- we don't have a map
15 that shows that right here, do we?

16 That kind of bounds the southern end of our
17 off-site plume. And we haven't seen any perchlorate
18 there for a couple years. So we're starting a second
19 quarter sampling now.

20 And as I mentioned earlier, we want to process
21 our purge water at the OU-1 treatment plant. I sent out
22 a memo last week to the RPMs and to Tony and a couple of
23 others saying that the purge water that we get when we
24 take our samples, to purge the wells, we're going to
25 bring it back to the OU-1 treatment plant, put it in the

1 influent, take out any chemicals that are in it and just
2 pump it back into the ground as clean water.

3 MR. SORSHER: How much purge water are you talking
4 about?

5 MR. SLATEN: Historically, it's been, what, 6,000
6 gallons per year?

7 UNIDENTIFIED SPEAKER: 6,000 gallons a year.

8 MR. SLATEN: That would be a little bit more on
9 this next round of sampling because we're doing the
10 isotopic analysis, where we have (inaudible) and larger
11 samples, so it will be more than that.

12 So compared to the millions of gallons a year
13 that we process through that plant, it won't even be
14 noticeable.

15 MR. ZAIDI: Is it purge water or the water which is
16 from the knock-out drums from the SVE system?

17 MR. SLATEN: It's mostly purge water. We propose
18 also that little bit that comes from the SVE system, the
19 soil vapor moisture, that we do the same thing with it.

20 I say purge water because that's almost all of
21 it, but there is a little bit also from the SVE
22 system.

23 MR. ZAIDI: So it's purged water from the --

24 MR. SLATEN: Soil vapor extraction.

25 MR. SORSHER: It's condensate.

1 MR. SLATEN: Yes. Did I say purge water?
2 MR. ZAIDI: Yeah, you said purge water.
3 MR. SLATEN: I'm sorry.
4 MR. SORSHER: Sounded like it.
5 MR. SLATEN: Condensate.
6 MR. ZAIDI: Okay.
7 MR. SORSHER: What kind of (inaudible) levels do
8 you get in that condensate?
9 MR. FIELDS: We sample it every time before it's
10 been hauled off-site but I think -- I don't have the
11 data in front me, but I think they were comparable to
12 what we see in water.
13 MR. ZAIDI: That's within the treatment capability
14 of the plant?
15 MR. FIELDS: Absolutely.
16 MR. SLATEN: Oh, yeah.
17 MR. AMINI: We mix it with the rest of the purge
18 water, and then we introduce it gradually to the plant.
19 We have capacity to hold it and introduce it gradually.
20 MR. SLATEN: Even so, its levels of VOCS are going
21 to be less than what are being pulled up in the
22 groundwater right there because it's been airstripped
23 somewhat.
24 MR. ZAIDI: So you're going to mix it with the
25 influent through the system, right?

1 MR. SLATEN: Correct.

2 MR. ZAIDI: GAC system and the --

3 MR. SLATEN: Process it through the entire system.

4 MR. ZAIDI: I asked my (inaudible) yesterday and

5 they don't have any problem (inaudible) the effluent

6 meets the drinking water standards of DHS.

7 MR. SLATEN: That's what the plant is designed to

8 do.

9 MR. ZAIDI: So we don't have any --

10 MR. SLATEN: We still have all the standards that

11 are applicable to the effluent plant before we reinject.

12 MR. ZAIDI: If DHS doesn't have any problem, we

13 don't have any problem.

14 MR. RIPPERDA: DHS doesn't regulate that --

15 MR. SORSHER: We don't really regulate it. If you

16 just want to use our numbers, you're free to use our

17 numbers.

18 MR. ZAIDI: No, no. We use your numbers. We use

19 MCLs.

20 MR. SORSHER: Yeah. I know.

21 MR. ZAIDI: That's what we expect -- we require

22 that the effluent from the system meets those MCLs.

23 MR. O'KEEFE: Right. But not the perchlorate.

24 MR. ZAIDI: Perchlorate action levels.

25 MR. O'KEEFE: Perchlorate is a little higher than

1 that.

2 MR. SLATEN: No. This plan is achieving nondetect
3 and --

4 MR. O'KEEFE: I thought I saw 20, 30.

5 MR. RIPPERDA: That was in between the GAC and the
6 biological.

7 MR. SLATEN: The effluent, it's consistently been
8 nondetect even with the laboratory samples, which I
9 believe the detection limit is 2.

10 MR. O'KEEFE: Great. Then I have no problem.

11 MR. SORSHER: I have no problem.

12 MR. ZAIDI: We have no problem. As this meeting
13 goes so --

14 MR. SLATEN: That's fine. Okay. Good. Then we'll
15 probably start that soon.

16 MR. ZAIDI: Actually, the (inaudible) that you sent
17 by e-mail doesn't have a signature for it to be
18 official. Sent me --

19 MR. SLATEN: I will send you a PDF with a
20 signature.

21 Lori, make sure I do that.

22 MR. ZAIDI: Then we can respond in writing and send
23 you a signed letter.

24 MR. SORSHER: I have just one comment on -- two
25 comments on the groundwater monitoring report.

1 One thing that I did myself, and it's up to
2 you -- you just might want to consider it -- just to
3 make it easier for me to kind of visualize what's
4 happening, what the numbers are, I mean, because we get
5 this huge table results.

6 What I did is I categorized the wells. I broke
7 it into four groups of wells. And one category is the
8 on-site highly contaminated wells that -- they kind of
9 cluster around the center, north center area: MW-7,
10 MW-13, MW-16, and MW-24. So I kind of have them
11 together.

12 The second group is other wells on site that
13 are moderate or low contamination. And I listed them
14 arranged from east to west: MW-11, MW-8, MW-23,
15 MW-22, and MW-6.

16 And the third group was the wells that are
17 pretty much on the perimeter of JPL; MW-1, 15, 9, 12. I
18 put in 3, because that's just off the perimeter in the
19 Arroyo. MW-4, 5, 10, 14, and 2.

20 And if you look at them, what they do is it
21 goes around clockwise from the northeast corner of the
22 property around. So you can see in sequence what the
23 numbers are as you move in that pattern.

24 And then the fourth group, of course, is the
25 off-site wells, also arranged kind of from the MW-18,

1 coming down and then swinging around to the west: MW-18,
2 17, 20, 19, 25, and 21.

3 So I was just wondering, you know, if people
4 think it would be helpful, you might want to present the
5 data in that kind of a grouping, and it might --

6 MR. O'KEEFE: The numbers are kind of -- the
7 numbers are meaningless.

8 MR. SLATEN: Okay. We have -- we are going to look
9 into trying to map this stuff, and of course it's
10 complicated by the extra dimension of depth because
11 these are different --

12 MR. SORSHER: Right.

13 MR. SLATEN: -- it's a different screen.

14 MR. SORSHER: Right.

15 MR. SLATEN: We'll look into that.

16 But as far as just regrouping them a little
17 more logically as to their area, we'll look into that
18 for the next quarterly report.

19 MR. FIELDS: We had looked -- I mean, as far as the
20 quarterly report, with inspections with EPA, we decided
21 just to make it a text memo because we were generating a
22 lot of figures and graphs and text and tables and things
23 that I don't think were really being used or evaluated.

24 So what we tried to do here is just present the
25 information, what people will want to know. So if

1 there's extra things that people want to know, we can
2 incorporate that in.

3 MR. ZAIDI: Actually, it's very routine that when
4 we require groundwater monitoring reports, we always
5 require groundwater elevation (inaudible) maps, and also
6 iso concentration maps. So these are a requirement. We
7 don't -- we consider the report deficient without that.

8 So we like to have that -- those maps with it.
9 Because that gives you a very quick snapshot of what's
10 going on; how the concentration levels are varying below
11 the basin and how the groundwater levels are changing.

12 And since there are several different screen
13 intervals, maybe you can correlate with the screen of
14 the monitoring wells, with the screen of the production
15 wells, and then get that data, incorporate that data
16 with the monitoring wells -- iso concentration map.

17 MR. FIELDS: Okay.

18 MR. SORSHER: The other comment I had, and it was
19 we'd really like to see low level one, two, three, PCP
20 being looked for. I thought that was going to be done,
21 but I didn't see it. I know that they did the high
22 level as part of the VOC scan, but that doesn't really
23 tell us anything.

24 MR. SLATEN: Okay. I'll talk to Keith about that.
25 See what he can do.

1 MR. ZAIDI: Another idea, which was to be presented
2 before, is the idea of physical (inaudible) map,
3 mapping, of the whole basin. Whatever method you
4 choose, I think it would be very useful to characterize
5 what highs are there, and based on that, Steve knows,
6 that we can divide -- we can divide the basin into
7 subbasins, what -- they'll be hydraulic divides.

8 So that will be very easy to interpret why the
9 concentration is -- what it is here, and why it's not
10 going across. There are faults. There are all these
11 subsurface heights. So they have a lot of effect on
12 that.

13 So we can concentrate probably more after we
14 have that map on those wells which are -- really have a
15 (inaudible) from the source area to the downgradient
16 part of the basin.

17 And we know those wells which are across those
18 highs because there is no use of monitoring those, maybe
19 yearly monitoring or something like that.

20 MR. SLATEN: Okay.

21 Did I forget to talk about the OU-1 expansion
22 next year? Was that on the previous --

23 MR. FIELDS: We could have mentioned that.

24 MR. SLATEN: Anywhere, I guess, I could mention it.

25 You know, the OU-1 is on now with the two

1 extraction wells that are -- there is one deep, one
2 shallower, and two injection wells that are a few
3 hundred feet apart.

4 This next year, at least, we're looking into
5 then expanding that system to install at least a couple
6 of more extraction wells. And just in the same general
7 area, just extend our footprint a little bit so...

8 MR. ZAIDI: I think that's an extremely good idea,
9 very good idea.

10 MR. SLATEN: Yeah. We have a plant that's capable
11 of doing greater volume so we will be upgrading it this
12 next year.

13 MR. ZAIDI: That can contain the plume much better.

14 MR. SLATEN: Hopefully, we will get the source area
15 and get it under control and start reducing the source.

16 I am heartened by our recovery already, you
17 know, by now some hundred pounds, probably, of
18 perchlorate, which is a significant percentage of what
19 we think is a perchlorate that's in situ right now.

20 MR. ZAIDI: But if we install the appropriate
21 number of these extraction wells, add the spacing which
22 is not allowing any leakage between the wells, that
23 should be our ultimate goal.

24 MR. SLATEN: That's the plan.

25 Want to jump back down.

1 MR. TAKARA: Steve, do you know what that plan of
2 expanding the OU-1 by adding a couple of more --

3 MR. SLATEN: Yes.

4 MR. TAKARA: We're probably looking at adding an
5 additional capacity of 250, 300 GPM. Sounds about
6 reasonable?

7 MR. SLATEN: Yes.

8 MR. TAKARA: Is that going to be -- is that going
9 to do you any good? I'm just wondering once the OU-3 is
10 up and running at 7,000 GPM.

11 MR. SLATEN: The idea is we contain and start
12 removing the source so it's not a further contribution
13 to the off-site low level plume. So yeah, they're
14 working in concert.

15 MR. RIPPERDA: The goal there would be that he gets
16 to turn off the Arroyo treatment system in whatever, 20
17 years instead of 30 years.

18 MR. SLATEN: There's enough continuing source here
19 that if we don't contain, control and remove it, it
20 could be a continuing source of low level progress
21 hundreds of years to off-site. So it is -- this is an
22 important first step, and I'm glad we have it on.

23 MR. O'KEEFE: And we're glad you have it on.

24 MR. TAKARA: It's removing quite a bit of
25 perchlorate so far.

1 MR. SLATEN: Yeah. That's good. You know, 78
2 pounds of perchlorate will make almost 10,000-acre feet
3 of water above the aquifer.

4 MR. RIPPERDA: That's the same mass that Bob
5 removed.

6 You removed the same mass in a short quarter
7 than Bob did in a year.

8 MR. SLATEN: Yeah. Because our levels are a
9 thousand times as high in the source area.

10 MR. FIELDS: At 150 GPM rather than 2,000.

11 MR. RIPPERDA: Right.

12 MS. GUTIERREZ: You said 78 pounds removal when
13 they collect 10,000?

14 MR. SLATEN: I did say that. In fact, it's
15 probably more like 8,000 is the true number, if I were
16 to do the math.

17 MR. O'KEEFE: Acre feet.

18 MR. SLATEN: 8,000 acre feet, which is millions of
19 gallons.

20 One interesting number that I heard -- I got a
21 call from a guy who had done road flare, and then he
22 sent me a study. One road flare is enough to
23 contaminate to above six parts per billion -- 1.6-acre
24 feet, I believe. Was that the number that I share?
25 That's like how many million -- a few million gallons.

1 Over a million gallons.

2 Okay. We talked about the FFA schedule
3 already. Is there anything else?

4 MR. FIELDS: That was just January data from the
5 perchlorate from our monitoring wells.

6 MR. SLATEN: It does kind of sum up, though, what's
7 kind of been said here, is if you look at our results
8 for monitoring wells and kind of combine that with
9 depth, you get the 3-D picture. It's pretty.

10 MR. TAKARA: Steve, I'm wondering, you know, since
11 there have been so many studies done in this area by
12 NASA, do you have on your website a catalog of all these
13 reports that someone could easily go back to? I mean,
14 do you have a breakdown as to what these reports would
15 contain in -- besides just the title, I mean, what's in
16 the report, something generalized (inaudible) report
17 that's cataloged? Because I'm wondering if some of
18 these sites might be used for Mohammad or --

19 MR. SLATEN: Well, it's all there.

20 Lori, how accessible --

21 MS. GARNER: Well, every single document that has
22 ever been produced is online. That's what we were
23 talking about earlier, that we have to do that so -- I
24 mean, right? I mean, how many documents did we say it
25 was?

1 MR. FIELDS: 300 or 400 separate documents.
2 MS. GARNER: Yeah.
3 MR. SLATEN: But I think somebody -- especially
4 somebody who understands our project --
5 MS. GARNER: Yeah.
6 MR. SLATEN: -- can probably go in and look at
7 titles and get an idea of whether or not they want to
8 open that document.
9 MS. GARNER: Yeah. You can do a keyword search and
10 it'll come up with different titles of different
11 documents that you can look at.
12 MR. AMINI: (Inaudible) table of contents to
13 (inaudible) to the section.
14 MR. ZAIDI: The website, which website?
15 MR. SLATEN: JPL Water dot NASA dot gov.
16 MR. RIPPERDA: Http dot www, right?
17 MS. GARNER: Either way, it works.
18 MR. RIPPERDA: Okay.
19 MR. ZAIDI: JPL Water dot net?
20 MR. SLATEN: Dot NASA dot gov.
21 MR. ZAIDI: Oh, dot gov again. JPL Water dot net
22 dot --
23 MR. SLATEN: It's on all of our business cards too.
24 MR. SORSHER: Yeah. Those are links that you sent
25 us, right?

1 UNIDENTIFIED SPEAKER: All but the well --

2 MR. O'KEEFE: Is that the same path?

3 MR. SLATEN: No. Because usually, when I send you

4 a link, it's fresh on Battelle's server because it's new

5 and it has -- it takes us a little bit of time to get it

6 on the --

7 MR. RIPPERDA: And all the drafts are on Battelle's

8 server until it goes through the process. Once it's

9 final, Lori gets it.

10 MS. GARNER: Yeah. Although there are some drafts;

11 right?

12 MR. FIELDS: There would be some drafts in the

13 administration record.

14 MR. O'KEEFE: There is no dot. JPL water. Still

15 writing it down.

16 MS. GARNER: And it's -- I mean, the whole set of

17 documents is called the administrative record.

18 MR. RIPPERDA: Right. So once you get to that

19 page --

20 MR. SORSHER: I think I've been there. I'm sure

21 I've been there, yeah. I don't know if I bookmarked it.

22 MR. TAKARA: Steve, on this one Powerpoint slide

23 that you did for us, especially for this meeting here,

24 had a lot of useful information and tables. Is there

25 any way that we could get a copy of that Powerpoint or

1 send that out to the --

2 MR. SLATEN: This, today?

3 MR. TAKARA: What Keith presented today, this

4 presentation report.

5 MR. FIELDS: Sure.

6 MR. SLATEN: You mean all of this?

7 MR. TAKARA: Yeah.

8 MR. SLATEN: Well, look quickly, if you have a

9 photographic memory.

10 MR. SORSHER: Photographic memory.

11 MR. SLATEN: I don't think there's anything on here

12 we mind sending out at all.

13 MR. FIELDS: I'll send it to you.

14 MR. TAKARA: Great. Thank you.

15 MR. SLATEN: Anybody else want it?

16 Will it gum up anybody's system if I just hit

17 everybody I invited to this meeting?

18 MR. O'KEEFE: Yeah. Actually, it would be good if

19 you send one to one of us at DHS for James' supervisor's

20 benefit.

21 MR. RIPPERDA: So I think you can send it to the

22 list, and we can delete it if we don't want it.

23 UNIDENTIFIED SPEAKER: You can send it to me.

24 MR. SLATEN: Okay. Lori or Keith, just send it out

25 to the list that's on the RPM list, all 30 or 40.

1 MR. O'KEEFE: Are you done with your agenda items?

2 MR. SLATEN: Yes.

3 MR. O'KEEFE: I just wanted to briefly mention
4 about the DHS perchlorate MCL development.

5 MR. SLATEN: Okay.

6 MR. O'KEEFE: I think around the time of the last
7 public meeting, there was still some concern about
8 (inaudible) revisiting the PHG, which was at six parts per
9 billion.

10 Since that time, I think everybody's aware,
11 through Merrilee distributing that information, they
12 decided that there would be no revision to that six part
13 per billion PHG.

14 Subsequent to that, DHS moved their reg package
15 to the first step, which is we submit the draft
16 regulation to the state office of regulations. Once it
17 gets through that step, then it will come out for public
18 review and comment.

19 So we're probably a month or two away from that
20 public review period. Nobody's saying what the number
21 is, but I think we can all guess. It's not that 20
22 (inaudible). Okay.

23 MR. FIELDS: So we could have an MCL in a year?

24 MR. O'KEEFE: Yeah. Could.

25 MR. SLATEN: Good.

1 Does anybody else have anything they want
2 before we close?

3 Well, thanks, everybody, for coming.

4 (At 12:13 p.m., the proceedings
5 were concluded.)

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