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TRANSCRIPT OF PROCEEDINGS

NASA-JPL CERCLA RPM MEETING

Held at:

Foothill Municipal Water District

Thursday, October 7, 2004

4536 Hampton Road

La Cañada Flintridge, California

## 1 APPEARANCES

2 STEVE SLATEN, NASA Remedial Project Manager

3 MERRILEE FELLOWS, Head of Outreach for NASA

4 MYRNA GUTIERREZ, Consultant for Multicultural Outreach  
5 for NASA

6 MATTI VIGIL, Battelle Administrative Support

7 KEITH FIELDS, Battelle

8 MOHAMMED ZAIDI, Los Angeles RWQCB

9 MICHEL ISKAROVS, DTSC

10 ALAN SORSHER, California DHS

11 JEFF O'KEEFE, California DHS

12 MARK RIPPERDA, U.S. EPA

13 GARY TAKARA, City of Pasadena Water and Power

14 DAVID CLEXTON, Battelle

15 HEATHER COLLINS, California DHS

16 JOHN SCHUMACHER, Rubio Cañon Land and Water

17 LINDA THOMAS, Municipal Water District

18 BRAD BOMAN, City of Pasadena Water and Power

19 CATHY CHANG, City of Pasadena Water and Power

20 CAROLYN O'HART, Battelle

21 MARK VELAZQUEZ, Raymond Basin Management Board

22 JAMES KO, California DHS

23 BOB HAYWARD, Lincoln Avenue Water Company

24 BILL PECSI, Foothill Municipal Water District

25

1 LA CAÑADA FLINTRIDGE, CALIFORNIA

2 THURSDAY, OCTOBER 7, 2004

3 10:17 A.M.

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5  
6 MR. FIELDS: So let's go ahead and start kicking  
7 it off.

8 On the agenda today, we have Merrilee's stuff on  
9 first, so she's going to go first and talk about what's  
10 going on with public outreach.

11 MS. FELLOWS: Some of this you already know, but  
12 I thought I would just update since we were last all  
13 together, and because I took a couple weeks to go on  
14 vacation, it was planned deliberately to avoid all the  
15 rushes, but, of course, it came on top of everything that  
16 was due. So everybody else, all the consultants and all  
17 of you guys helped get everything out on time, so this is  
18 interspersed. This is my summer vacation, and what's  
19 happened since I was gone.

20 And while I was gone, a lot got done. I was  
21 in Tanzania, by the way. That's where that is.

22 MR. SORSHER: That's not the Arroyo, is it?

23 MS. FELLOWS: Well, let's see. The first thing  
24 we did was set up an e-mail address that was sort of a  
25 generic one, for one thing, partly because I was on

1 vacation, I didn't want to have my E-mail at work that  
2 would be responding to everybody saying, "Oh, I'm on  
3 vacation for two weeks, come and steal everything from my  
4 house" because I wasn't sure how much public comment we  
5 were going to get, so I was a little leery, and it made  
6 sense to set up one, anyway.

7           So I had Matti and Myrna and Burt Peretsky, who  
8 is with Focus Group, also receiving any e-mails that came  
9 to water cleanup so they would know that they should  
10 respond to the public immediately. So we had a protocol  
11 for how they would get together and decide what an answer  
12 would be. But we're going to keep that now for all time,  
13 so if I ever leave, we can keep that on. We don't have  
14 to change the files and documents. We can just keep  
15 using that, and then it will just be assigned to the new  
16 person. I'm not planning on leaving.

17           Let's see. We also had the Lincoln Avenue open  
18 house, which we talked about before, but we posted an  
19 article on the web that summarized it and had a picture,  
20 and also put an article in NASA's in-house publication  
21 Vision, which is shown on the next page. Nice little  
22 document. Bob Hayward has an actual copy here, a hard  
23 copy here. But it came out very nicely, and that went  
24 out to all of NASA's internal -- what? -- four to five  
25 thousand, 5,000 employees or something like that. So

1 that was pretty nice coverage.

2 This is me. Every time I'd look at an animal.  
3 I'd think, "Gosh, I hope everything is going okay."

4 So, next. Yes, the action memo was published.  
5 And it was made available on the web.

6 Next slide. We also published both Spanish and  
7 English summaries of it that were lay person friendly,  
8 and had those available for anybody, as well as on the  
9 web, and distributed them kind of infrequently around  
10 when the need arose.

11 Next. We also did the public notice calling for  
12 public comment, and this was a quarter page ad in the  
13 Star News on August 25th, and we also used this same  
14 thing, because this is sort of an eight and a half by 11,  
15 nice file, we put that up with our documents that we  
16 distributed around town trying to highlight the fact that  
17 we don't just have a newsletter, but we're also asking  
18 for public comment, also.

19 This is the newsletter, the first page anyway,  
20 and I have copies here, hard copies, for anybody that  
21 wants them. And it was a bilingual newspaper, and you  
22 can see sort of -- maybe it's easier to show you on here,  
23 but there's sort of some shaded areas in each of the  
24 documents -- each of the articles and those were the  
25 Spanish ones, and this came in handy in a way I will tell

1 you in a minute.

2 UNIDENTIFIED MALE SPEAKER: (Unintelligible.)

3 MS. FELLOWS: Yeah, there's little summaries of  
4 the articles, not mini articles.

5 UNIDENTIFIED MALE SPEAKER: (Unintelligible.)

6 MS. FELLOWS: We put those in all the four major  
7 information repositories, also in the Pasadena Senior  
8 Center, the Altadena Community Center, and the Pasadena  
9 Community Department of Health.

10 At the same time, we distributed an e-mail to  
11 JPL personnel, and that's more than 5,000 employees and  
12 contractors, and walking around the lab, occasionally  
13 people would yell at me and wave and say, "Thanks a lot.  
14 This is the first time we've ever really felt included in  
15 what was going on." And it was kind of nice to get that  
16 sort of feedback, and also to realize that people read  
17 it. And even now I'll be somewhere, you know, months  
18 away from that and somebody will say, well, I really  
19 liked your e-mail, and I'm thinking, "What e-mail, you  
20 know, and who are you?" And so it's still -- you know,  
21 people actually opened it up and looked at it.

22 And from JPL we got about five comments, all of  
23 which were "This doesn't work on this kind of browser,"  
24 "You misspelled this." You know, it was actually they  
25 didn't say misspelled, they had pretty substantive

1        comments, but nothing about the substance of what we do,  
2        just more about how it appeared on the web or something  
3        like that.

4                    And we had one question, I think, because the  
5        person I think knew my name and said, "I'm a new  
6        employee, and is their faucet water here safe to drink?"  
7        And we gave him an answer and never heard from him again.

8                    But we've had meetings with employees. These  
9        guys contacted us because you see that corner office  
10       there is actually the section manager, and he's one wall  
11       of our site. The chain link fence comes up to his office  
12       and it starts after his window again. And so they bore a  
13       lot of the brunt, but were actually kind of a friendly  
14       group. Had a lot of questions, a few health questions,  
15       but just kind of "What's going on here?"

16                    And when you stand there and feel the vibrations  
17       from the compactor, you could see why.

18                    And let's go to the next one. A few questions  
19       received from the public and JPL, and this woman says,  
20       "Do you have any date for completion of this project?  
21       The noise is really impossible to be around. I've had to  
22       take work home already due to the resonating shaking and  
23       noise through my cubicle or go completely nuts."

24                    So I went over and talked to her, really, really  
25       nice woman, really shaky office, but the problem was a

1 generator or a compressor above their offices that had  
2 nothing to do with our project. And so the bad news was,  
3 "Your noise isn't going to go away." Some of the compacting  
4 shaking is going to go away, and she's on vacation this  
5 week, and by the time she gets it back, it will be gone.  
6 But JPL's still got - they've still got a PR problem, but  
7 we don't.

8           But, again, you know, I went and talked to her,  
9 and she was just really nice, and this was a whole new  
10 group whose office is just a little further from OU-1  
11 than the ones we've been to visit, and we will be going  
12 to visit them shortly.

13           We participated in the Pasadena Museum of History  
14 exhibit, and this is a really nice exhibit. I think some  
15 of you have already seen our input here. They gave us  
16 two eight-and-a-half-by-11 spaces for this museum.

17           Go on to the next one. And these are what we  
18 came up with because we were so limited in size, you  
19 know, something this size, to try to get our whole  
20 project across.

21           Next one. And this is how it looks in the  
22 museum, and even the curator wrote me afterwards and  
23 said, "I'm really sorry. I didn't realize how tiny it  
24 was going to look." And they had their pictures around  
25 it, and they were embarrassed about their own, as well,

1 and said they would get me new dimensions to increase the  
2 size. But so far, they haven't. I actually saw the guy  
3 last night in a meeting last night, and he didn't mention  
4 it again. So maybe they're going to live with this. But  
5 it's been getting a lot of play throughout town. Have  
6 you guys been over to it? It's worth going over to.  
7 It's a five buck donation to get in, and it's basically a  
8 history of environmental use and the people and the  
9 development that's gone on in the whole San Gabriel  
10 Valley region, but mostly the Pasadena area. And some  
11 fantastic maps that have never been made available  
12 before. And it's really bringing the issue to the fore;  
13 not us, necessarily, but just water in general and the  
14 problems.

15           And Tim Brick gave a talk at the museum as sort  
16 of a kickoff, and in there he mentioned NASA and said --  
17 you know, he had a picture of von Karman and the guys in the  
18 Arroyo developing the rockets and said, "This is very  
19 important to the war effort, and they should be  
20 recognized, but they left a legacy of problems that NASA  
21 is now stepping up to the plate and cleaning up." And  
22 then he went on. So it was, you know, a fair treatment,  
23 but he also faced the fact that there's problems with all  
24 that good stuff.

25           So this is just another picture to show you kind

1 of how the room is set up.

2 And I was still worrying.

3 Next. And the "Dear Neighbor" letters were  
4 letters that Dave Clexton actually initiated and we  
5 helped draft. There was one in Spanish. It was  
6 back-to-back; right? And David and another contractor  
7 for Battelle walked around to the neighbors in the  
8 immediate area where we're going to drill the new  
9 monitoring well and talked to the neighbors.

10 Let's go to the next page so you can sort of see  
11 it there. I think the little blue circle thing is where  
12 the well is. And so the first day of installation, we,  
13 David and I, went around and just kind of hung out in the  
14 neighborhood with our badges on and carried some few  
15 things.

16 Let's go to the next page. Would you press that  
17 little sound thing on the right there. Do you have sound  
18 on your computer?

19 MR. FIELDS: Maybe not.

20 MS. FELLOWS: All right. Well, it makes a drill  
21 little sound so --

22 MR. FIELDS: Sorry.

23 Ms Fellows: "Vvrrrrrrmmm, vvrrrrrrmmm,  
24 vvrrrrrrmmm, vvrrrrrrmmm, vvrrrrrrmmm."

25 MR. SORSHER: You may have the speaker turned

1 off.

2 MS. FELLOWS: It's not really that important.

3 So we walked around to the neighbors, and I went  
4 there for about the first three days of the drilling and  
5 said, "This is only going to last this many days." And  
6 because they had all been contacted before, they were all  
7 like -- the last day I drove through, they were all  
8 waving at me as I drove by, you know, kind of happy.

9 And so I went to my car and got this newsletter  
10 and talked about the monitoring well on here, and then I  
11 pointed to the fact that we had a little Spanish summary.  
12 And one of the other neighbors came up, and the woman I  
13 had been talking to spoke English, but she points to the  
14 Spanish version, you know, she's looking at it, and it  
15 just made me really proud that we had gone to that extra  
16 effort because, obviously, it paid off, and people  
17 appreciated it. And we'll keep doing that on any of the  
18 new activities we have.

19 Next. Other things we've done, Battelle revised  
20 the website. NASA has a protocol so that all their web  
21 sites throughout the nation look the same, and they don't  
22 all yet look the same because not everybody has been as  
23 quick as Battelle to help us make ours consistent, but  
24 ours is.

25 And another thing we've added, in addition, you

1 can see the section in "Español" down below, but we also  
2 added the fact that Dr. Mack, who talked at the community  
3 meeting on health, I had promised to get each of the  
4 libraries to carry the book, and he actually contributed  
5 one to the Pasadena Public Library, and since Matti had  
6 been working with the library, she found out about that  
7 right away, where they put it in the reference area. So  
8 I just wanted to put that on the web so if anybody wanted  
9 it, they would know where to find it.

10 And the comment period that we had started with --  
11 the kick off of all the action memo public comment  
12 requests -- was that no comments were received, not even a  
13 single one. One woman, as I mentioned before, called me  
14 and said her water tasted like chlorine, and she's got a  
15 call in to you to ask about that. But that didn't have  
16 anything to do with the comment period. So I'll put on  
17 the web next to the action memo that we didn't receive  
18 any comments. And if anybody does comment, and I don't  
19 think there's any hard and fast rule about the end date,  
20 we'll respond to them, too.

21 We are updating the information repositories,  
22 and any of you who have been to the libraries know  
23 that -- well, in Altadena, it's this huge set of binders  
24 so high up that you can't even reach it, and if you pull  
25 the binder down, you'll probably kill yourself. They all

1 have different ways of placing it in their libraries, and  
2 it's just getting huge. This is a lot of years of  
3 quarterly monitoring reports and data. So what we've  
4 done is we're going to CDs for the appendices, but we'll  
5 still have hard copies of the executive summaries and the  
6 first pages, the basic readable documents. But it's  
7 saving us a lot of space, so we're being -- actually,  
8 Matti's working with Altadena to move the binders down  
9 from the top shelf. We've got a central file so people  
10 can actually go in and access everything.

11 One problem: Altadena and Pasadena were both  
12 fine with the CDs coupled with the hard copies. But La  
13 Cañada was a little afraid of viruses being introduced by  
14 our CDs and wanted to have, on their computers there, a  
15 little button for every CD, and we have, like, a couple  
16 hundred CDs at this point. So that wasn't going to work.  
17 So what we're going to do at La Cañada is just have a  
18 sign that says, "If you want the rest of this  
19 information, go to the web, and it's right over there on  
20 the computer nearby." And they will have a link there  
21 that will take them directly to the web page. So, I  
22 mean, it's virtually the same thing as a CD anyway, so --  
23 and then also offers to provide hard copies for anybody  
24 who's afraid of computers. We won't say "If you're  
25 afraid," but, "If you want a hard copy, come talk to us

1 or we'll help you get it."

2 Let's see. At JPL, also, they were sort of in a  
3 random order, and we are moving that to new shelf space.  
4 And, gradually, we'd like to transition to an entirely  
5 web-based record, which it is anyway, because they're  
6 identical, but I'm sure the libraries will be happy to do  
7 that. But I want to make sure the public doesn't think  
8 that we are trying to make it harder for them, so I want  
9 to give them a few more years of getting them used to the  
10 fact that this is the computer age.

11 Upcoming events, let's see. Know that the  
12 construction at Sunset, the monitoring well, already  
13 started. It's finished now, almost finished.

14 UNIDENTIFIED MALE SPEAKER: The well is drilled;  
15 they're conditioning the well for sampling.

16 MS. FELLOWS: We know that the comment period  
17 ended. We noted the meeting. We're -- sometime in the  
18 next month, we're going to be starting the monitoring  
19 well at Woodbury, and the other guys will talk about  
20 that.

21 As I mentioned, we'll be meeting with employees  
22 on November the 3rd.

23 Next page. Somewhere in November/December,  
24 we're expecting the National Academies publication to  
25 come out, which isn't really going to affect us at all

1       except for us, in terms of media response, just being  
2       ready to say there is no change for us probably.

3               UNIDENTIFIED FEMALE SPEAKER:  Is that still an  
4       accurate date?

5               MS. FELLOWS:  What?

6               UNIDENTIFIED FEMALE SPEAKER:  I was just  
7       wondering if that was still an accurate timeframe  
8       because what I'd heard.

9               MS. FELLOWS:  The newest thing I heard was mid  
10       November, actually; but, you know, we are all skeptical  
11       of that.  And I'm actually not sure how long ahead of  
12       time the sponsors get to see it before it gets out.  I  
13       suspect only a day or two because they would want to be  
14       certain we didn't put pressure back on them to change the  
15       conclusion, so -- but I haven't heard anything and I  
16       think, Mark, you haven't heard anything.

17              MR. RIPPERDA:  No.

18              MS FELLOWS:  We're going to complete the  
19       fluidized bed construction up on the lab at JPL and start  
20       operations sometime -- we're saying this winter just  
21       because we've learned not to overpromise, and then, at  
22       the same time, we'll have a media notice of that, and,  
23       hopefully, we'll do some sort of grand opening.  At a  
24       minimum, I want to have something for the employees to  
25       thank them for their professional conduct in putting up

1 with everything. Yeah, it's a little tricky because  
2 we're not allowed to buy food, and so what's a grand  
3 opening without food? But we'll figure out a way to do  
4 something there to thank them.

5           Then we're going to move forward with the  
6 Windsor well and action memo, and I have, at this point,  
7 no idea when an action memo would be -- we will probably  
8 publish a newsletter. I was kind of hoping to have a  
9 public meeting on the action memo or something in the  
10 January period to keep going to the public fairly  
11 frequently, but since we have public meetings coming up  
12 later with the -- as you'll see on the next page -- with  
13 the CUP and the CUP and the DHS hearings and other  
14 things, I don't want to end up bunched up. So we may  
15 have one in January just to kind of update, especially  
16 with OU-1 commencing, and some things like that.

17           So we'll have a newsletter for that, and those  
18 are basically ones I just mentioned.

19           Let's see. Next. And then the next one. Okay.

20           So any -- oh, I have here some examples, I  
21 mentioned this before, what we call our simple Spanish  
22 flyer, which we put at the Department of Health in  
23 Pasadena and other places just as a basic backup, and I'm  
24 making sure people know who they can call. And then I  
25 have some newsletters here, so --

1           MR. FIELDS: How far away were you from this  
2 lion?

3           MS. FELLOWS: That lion -- actually, it was kind  
4 of interesting. There was a pride away about as far away  
5 as Mark, maybe twice that far, and some Cape Buffalo came  
6 through. I mean, this is huge. We're talking a huge  
7 area. And the Cape Buffalo came through, and it was on  
8 kind of on a clear trajectory to the lions, and the  
9 lions -- Cape Buffalo are known to be like one of the  
10 meanest creatures on the face of the globe, and so finally  
11 as it got close, the lions sort of went "aaahhh" and  
12 wandered off like, "We were planning to move, anyway."  
13 And they wandered off to our truck, because there was  
14 shade there, and they actually put their heads right on  
15 our running board. So they were pretty close at that  
16 point. And we were kind of leaning out the windows  
17 taking pictures, and then after the Cape Buffalo went by,  
18 they kind of stretched and wandered back out again. So  
19 pretty close.

20           MR. SLATEN: Well, as far as the community  
21 involvement, just think about the difference between  
22 today and one year ago.

23           MS. FELLOWS: That's true.

24           MR. SLATEN: It's a big difference. Night and  
25 day.

1 MS. FELLOWS: I never even heard of this project  
2 before.

3 MR. SLATEN: No, I didn't --

4 MR. RIPPERDA: You mean you hadn't heard of  
5 this, Steve, a couple of years ago in Colorado?

6 MR. SLATEN: Nope.

7 MR. RIPPERDA: The news wasn't getting to you  
8 there?

9 MR. SLATEN: Nope. It's about that time,  
10 probably about a year ago, when I first heard about the  
11 job, probably.

12 MR. FIELDS: Okay. Moving on. Let's talk about  
13 OU-1.

14 MR. SLATEN: Okay. So we do have, on the  
15 agenda, OU-1 and OU-3 the additional investigation  
16 provided in the OU-3 treatment systems. Let's talk about  
17 and go through OU-1 first.

18 A lot of work going on out there. There's David  
19 there with his hands on his hips inspecting the work of  
20 getting ready to build the -- you can see the big shoring  
21 that was around the backhoe down in there, and we had to  
22 go down really deep, dig down, put in shoring,  
23 compaction, just a lot of site preparation work going on.

24 So that sump on the bottom right is the  
25 completed sump.

1           Next. More recent work getting the pad ready  
2 until -- there's just lots of compaction, lots of -- they  
3 sort out the rocks, top right, lots of compaction going  
4 on, and lifts, bottom left. And bottom right is getting  
5 ready -- the foundation -- getting ready to pour the  
6 foundation starting maybe tomorrow?

7           MR. FIELDS: Yeah.

8           MR. RIPPERDA: Yeah.

9           MS. FELLOWS: That's a recent picture.

10          MR. FIELDS: It's yesterday.

11          MS. FELLOWS: Okay.

12          MR. SLATEN: This has been, in my mind, just an  
13 amazing amount of site -- of preparation work for the  
14 subsurface to get ready to pour the foundation. I never  
15 dreamed there was that much work to do. I've never been  
16 at a site or facility -- of course, I've never worked in  
17 California, in earthquake country; I've never worked on  
18 JPL before, but we're going to have a site that should  
19 last 10,000 years here once we get it all built.

20          MS. FELLOWS: True sustainability.

21          MR. SLATEN: I don't want to be the one that has  
22 to take it out.

23                 Okay. So some schedule work. The real  
24 important point, if you get down starting with the end in  
25 mind, is before Christmas, where, let's see --

1 MR. FIELDS: Somewhere --

2 MR. SLATEN: Yeah, before Christmas, the thing  
3 should be on. Are we -- I'm having trouble seeing that  
4 with my eye, but --

5 MR. FIELDS: So start up and inoculation.

6 MR. SLATEN: Here it is. Yeah. Start up and  
7 inoculation.

8 MR. FIELDS: And then operation and optimization.

9 MR. SLATEN: Turning the thing on before  
10 Christmas is the goal. Details in between.

11 MS. FELLOWS: What does it mean that it ends  
12 October 30th, 2004? Oh, that's phase one. I see.

13 MR. FIELDS: Yeah, it was somewhat arbitrary.

14 MS. FELLOWS: Just so they could enter it right.

15 MR. SLATEN: So still got some work to do, you  
16 know, putting it together, bringing in the rest of the  
17 pieces, hooking it up, wiring it in, start getting water  
18 into it.

19 Any questions about the schedule?

20 MR. ZAIDI: How about the injection water coming  
21 down.

22 MR. SLATEN: Two extractions; two injections.  
23 Again, this is the phase one.

24 MS. FELLOWS: Yeah, that's what you saw.

25 MR. SLATEN: Okay. Next. We're jumping now to

1 the OU-3 additional investigation. I'm going to start at  
2 the bottom of the page here with the paperwork. Looking  
3 this morning, I noticed I was sending out -- tried to  
4 send out to everybody the draft final work plan, but  
5 apparently instead of going to Mohammed, it went to  
6 somebody named Moulse, and -- Theresa Moulse.

7 MS. FELLOWS: Oh, good.

8 MR. SLATEN: Anyway, I realized it didn't go to  
9 everybody. It got to some people, but I re-sent it to  
10 anybody here, everybody on the RPM meeting distribution  
11 list. That's the draft final with response to comments,  
12 and it's a link. So I apologize, not everybody saw it a  
13 few weeks ago when I thought they -- thought it went out.

14 MR. FIELDS: We received comments from EPA, DHS,  
15 PWP, and GeoSyntec, so each response to comments is a  
16 separate link on that website. You'll see.

17 MR. SORSHER: So since it's on the web site, it  
18 hasn't been e-mailed to us?

19 MR. SLATEN: The link has been e-mailed to  
20 y'all, all you have to do is just click on it and you'll  
21 get there. It's just we've got such big documents going,  
22 we can't e-mail the whole entire document.

23 MS. FELLOWS: And that's an internal site;  
24 right?

25 MR. FIELDS: Yes, that's a Battelle site.

1           MR. SLATEN:  OU-3 additional investigation, I  
2    think everybody knows we need to figure out the full  
3    extent of the chemicals from JPL, and help to understand  
4    what's going on toward the Sunset area now.

5           So as you saw, we're drilling the first well,  
6    and we'll be moving on to drill what's called Location  
7    One, which will be our next well that we move on to.

8           We superimposed our wells on the information we  
9    got from the Raymond Basin modeling study, which we  
10   haven't verified all of the details of what went into the  
11   model, but, you know, conceptually, we understand that  
12   there's -- that it's -- it's got good information in it,  
13   and details notwithstanding, we do know that there is a  
14   flow direction towards the Sunset wells from up in the --  
15   what I call the upper Raymond Basin, which happens to  
16   include JPL.  And so we -- the purpose of this is that we  
17   agree that they are probably -- the wells that we are  
18   drilling are probably located -- the best located in the  
19   flow path to help us determine what's going on between  
20   here and the Sunset wells.

21          MR. ZAIDI:  These are the flow paths, they're  
22   not the particle lines?

23          MR. SLATEN:  This is a particle tracking model.

24          MR. ZAIDI:  Particle tracking model.

25          MR. SLATEN:  But it tells you a lot about the, you

1 what's going on with the flow path.

2 MR. ZAIDI: Right.

3 MR. HAYWARD: So these are saying that you used the  
4 most recent particle tracking flow model that was  
5 provided to you by GeoSyntec and not your wells, your  
6 future wells --

7 MR. SLATEN: No, actually, we had already  
8 decided on these locations for wells. What we're doing  
9 is superimposing the later information from GeoSyntec to  
10 say it does support our decision to put the wells here  
11 because it also shows. So it looks like all the  
12 information is agreeing that this is the right place to  
13 put these wells. We did not use their data to put our --  
14 to locate the locations for our wells, but it happens  
15 that it agrees.

16 MR. HAYWARD: And you are going to put the  
17 times, what you're doing, the progress you're making, and  
18 continue to correlate the data that we are out there  
19 finding?

20 MR. SLATEN: We're continuing to interact with  
21 GeoSyntec. We're asking them for some more information  
22 because we want to understand how they put together this  
23 model, and then whatever data we have, we share back with  
24 them. So I would say it's going to be an open flow of  
25 information, as much as they want.

1           MR. FIELDS: Bob, over the past year I think  
2 we've given them a lot of data, basically all the  
3 modeling data we have, to GeoSyntec. They've provided us  
4 with a lot of data. We're trying to correlate these  
5 models, you know, the NASA models and the GeoSyntec  
6 Raymond Basin model, as best we can.

7           We got this report maybe a month ago, and we  
8 did -- we had some questions and some comments on it, and  
9 we're going to send those out to -- presumably the right  
10 person is Tony Zampiello, to send those comments to?

11           MR. HAYWARD: Yes, Tony can direct them to the  
12 proper source at GeoSyntec.

13           But that was my concern, that if you're running  
14 into any inconsistencies between the data they're  
15 providing and the data that you have, then you're trying  
16 to correlate them to make sure we stay on the same page.

17           MR. FIELDS: Yeah, that's exactly what we're  
18 trying to do, right.

19           MR. HAYWARD: Great.

20           MR. SLATEN: With respect to the different  
21 models, what we need to be able to do is understand them  
22 both, all the inputs and how they were built, understand  
23 them both to either know that they generally agree or  
24 that if they don't, we know why they don't. I mean,  
25 there's science behind these and input parameters, and so

1 once we know enough of the details, we'll know that  
2 either they generally agree, or, in places where they  
3 don't, we'll understand why they don't and there can be  
4 professional differences of opinion.

5 MR. HAYWARD: I agree, Steve. But just to make  
6 a point that GeoSyntec, in their modeling of a  
7 presentation some time ago, strongly suggested that a  
8 tracking map that we're looking at right now, that possibly  
9 the contaminants from the lab site may be flowing toward  
10 the Sunset well field, and even farther southeast of  
11 that. So we're on the same page here.

12 MR. SLATEN: We're pretty much on the same page.  
13 There are details to work out that will be important to  
14 us in the future.

15 MR. HAYWARD: Yes.

16 MR. SLATEN: But, generally, we're on the same  
17 page.

18 MR. ZAIDI: Steve, the steep contouring here  
19 which are indicated by the very dense zones, they are  
20 steep contours because of some irregularities or  
21 something like that, or sudden change in hydraulic  
22 gradient?

23 MR. SLATEN: You mean why are the lines spaced  
24 closely together?

25 MR. ZAIDI: Yeah.

1 MR. SLATEN: Is that the question?

2 MR. ZAIDI: Yeah.

3 MR. FIELDS: David, you can correct me if I state  
4 this incorrectly, but this very tight spacing of flow  
5 lines of these particle tracking is most likely a result  
6 of this Monk Hill. The Monk Hill is a bedrock formation  
7 that comes up through the groundwater, you know, so --  
8 and also bedrock on this side, on the west side of that  
9 channel, and so you have kind of a narrowing in the  
10 bedrock or a channel that forms between the Monk Hill and  
11 that other side, and so you get a higher -- more flow  
12 through the tighter space, and it's higher velocity.

13 MR. ZAIDI: So these could be the channels  
14 formed or maybe some detection of some leak zones or  
15 something like that?

16 MR. SLATEN: I just believe most of the flow  
17 probably does follow those dense lines. I don't entirely  
18 believe everything here. If I were to have hand drawn  
19 this, I would have shown a little more influence from the  
20 sides and things. But I believe it's generally true that  
21 most of the flow probably follows those dense lines.

22 MR. ZAIDI: Like you were saying before, I think  
23 it needs a very good interpretation also because there  
24 may be a few things which are hidden there and a good  
25 interpretation will bring them out.

1 MR. SLATEN: Right.

2 MR. FIELDS: Another point is that we do not  
3 have much data between the Sunset wells and the wells,  
4 you know, the furthest NASA monitoring well is MW-20,  
5 which is pretty close to the Rubio Canyon. So this area  
6 in here doesn't have a lot of data. So, hopefully, our  
7 wells that we're putting in now will enhance our  
8 understanding within that region, as well.

9 MR. ZAIDI: So they are going backward from the  
10 wells, the wells are assumed to be pumping, and then  
11 these contours are like capture zones going backward?

12 MR. FIELDS: Right.

13 MR. ZAIDI: Okay.

14 MR. SLATEN: But some day, if we do talk about  
15 the bigger picture in the Raymond Basin, and the  
16 occurrences of perchlorate that are way off to the right  
17 here, I'll make the argument that it's very, very, very  
18 unlikely that there's any impact from JPL way over to the  
19 right side.

20 MR. ZAIDI: Yeah, you're right. I agree because  
21 these dense zones, dense green zones, are probably the  
22 main pathways.

23 MR. SLATEN: Right.

24 MR. ZAIDI: Whatever the reason may be.

25 MR. SLATEN: And we can talk more. Today we're

1 not really prepared to talk details about this. This was  
2 just sort of a big picture showing you why, for our next  
3 investigations, we have our locations in what appears to  
4 directly be flow pathways.

5 MR. ZAIDI: Can I have a copy of this map?

6 MS. FELLOWS: Maybe you should ask Raymond  
7 Basin.

8 MR. ZAIDI: Just for my understanding, nothing  
9 official.

10 MR. SLATEN: Yeah, Raymond Basin shared it with  
11 us, so however --

12 UNIDENTIFIED: If I could get your card.

13 MR. ZAIDI: Sure. It will be safe in our hands.

14 MR. SORSHER: Steve, Steve.

15 MR. SLATEN: Yeah.

16 MR. SORSHER: I was just wondering, again, I'm  
17 not a hydrogeologist by any means, so more of as a  
18 layman, it kind of looks, if those flow lines are going to  
19 turn out to be accurate, that it does seem to be the  
20 pathway from the north down to the Sunset wells, and so  
21 your new monitoring wells will help confirm that or  
22 disprove that, I guess.

23 MR. SLATEN: Yeah, that's absolutely why we're  
24 spending big bucks, you know, millions of dollars, to do  
25 this. We're putting in these monitoring wells with

1 multiple sampling ports at different levels to try to  
2 prove or disprove -- try to find out how far chemicals  
3 have traveled and whether chemicals that we see at the  
4 Sunset wells are attributable to our source or not.

5 MR. O'KEEFE: Just to elaborate on that point,  
6 this map shows that it's not likely that there would be  
7 any other source for perchlorate in the Sunset well  
8 field.

9 MR. SLATEN: I wouldn't draw that conclusion.  
10 This map doesn't tell you anything about potential  
11 sources; it's the generalized particle tracking.

12 MR. HAYWARD: Right. And, Steve, you point out,  
13 it's not contamination tracking.

14 MR. SLATEN: It's a particle of water or  
15 anything. This is not chemicals that are drawn here,  
16 it's just a hypothetical particle. It could be a  
17 molecule of water; it could be a molecule of salt; it  
18 could be anything, and it's hypothetical.

19 And what they do is they start at, and they kind  
20 of work backwards. They say, "Well, we know that there's  
21 a certain amount of pumping that goes on here and here,  
22 and then where does that water come from?" And with all  
23 the water level data and everything, computer back tracks  
24 where it probably came from.

25 So a lot of water starts up in the what I'll

1 call the upper Raymond Basin by La Cañada, it makes its  
2 way through sort of a constriction which is almost under  
3 our feet right here, and then spills over into the rest  
4 of the Monk Hill, and then later spills out of the Monk  
5 Hill down into the main Raymond Basin, and some day it  
6 spills over down into the -- further down into the San  
7 Gabriel Basin. So you can't draw too much inference  
8 about --

9 MR. O'KEEFE: Well, I was just trying to relate  
10 this to the suspicion that perhaps the golf course is  
11 where --

12 MR. SLATEN: This does not show any flow path  
13 from the golf course towards those wells.

14 And as I said earlier, if I had drawn this by  
15 hand just using geological intuition, I would have drawn  
16 some minor lines kind of splaying out going -- because I  
17 don't believe it's quite as much a freight train as that,  
18 that there's -- because wells will draw from all around  
19 them, and I believe the Sunset wells probably draw from  
20 over towards the golf course a little bit more, but  
21 that's just my professional guess. The model didn't show  
22 that.

23 MR. FIELDS: The other -- to evaluate this, this  
24 does correlate well with what we've seen in our models.  
25 I think there's some differences in the input parameters

1 as far as how quickly the particles are traveling.

2 But JPL is up in this area here, and what our  
3 model shows and what this one shows is that when these  
4 wells in the Monk Hill are pumping, particles are  
5 captured by those wells, and it's in the water that's  
6 coming from -- is sort of -- is -- when these wells are  
7 pumping, it travels south and is below JPL facility.

8 So, you know, these particles, most of these  
9 particles are going south of the facility, and that's  
10 consistent with what we've seen. But it all -- you know,  
11 this is with the assumption all these wells are pumping  
12 all the time. And that's why a particle from JPL to  
13 here, if it made its way through these over the years,  
14 would take a lot longer because there's -- if I'm saying  
15 it right -- there's some slow zones in there as its kind  
16 of working -- a particle works its way through different  
17 flow regimes of these extraction wells in the Monk Hill.

18 So looking at this, Battelle's impression,  
19 generally this looks like it agrees with what our  
20 assumptions are in our model, it's just a couple of the  
21 details with as far as hydraulic conductivity, maybe  
22 hydraulic gradient, it would differ to understand how  
23 quickly those particles travel in between here and here.

24 MR. RIPPERDA: Are you talking to talk about  
25 stable isotope analysis at all?

1 MR. FIELDS: Yep.

2 MR. RIPPERDA: Okay.

3 MR. FIELDS: That's coming up.

4 MR. SORSHER: Just one other comment on that. I  
5 think -- I haven't talked to Jeff about it, but to us  
6 it's very interesting that the wide range that this is  
7 covering, because we're, you know, involved with the  
8 water systems in the San Gabriel Basin and the south and  
9 the east and west, and it's just an interesting picture  
10 to me, personally.

11 MR. ZAIDI: Actually, as we go along, now we  
12 are -- we developed this map first and then we are  
13 imposing the locations; right?

14 MR. FIELDS: Uh-huh.

15 MR. ZAIDI: I think we're discussing that  
16 whether to prove or disprove whether these are really the  
17 preferred pathways, that will be very good information to  
18 have because we can direct our further location of any  
19 wells, if needed, based on these pathways, if they prove  
20 to be correct.

21 MR. FIELDS: Yeah. And, again, like Steve said,  
22 we did modeling that showed similar things, and we  
23 located wells with that and other data. And so what this  
24 picture is basically showing is that an independent group  
25 from NASA came up with the same results, and our wells

1 continue to look like we have appropriate locations,  
2 given the information we have.

3 MR. SLATEN: Okay. Next. Location Two. This  
4 is the one that we've been drilling on now, and the  
5 drilling is finished, and we're working on the final  
6 development.

7 So Interstate 210 is right here, Hammond Street  
8 is here, most of the Sunset wells are somewhere down  
9 here, a thousand or so, a thousand, 1,500 feet, from the  
10 well locations. So it seems to be a good place to get  
11 close, but up gradient, from the Sunset draw down. It  
12 was a good location because it was within -- under the  
13 control of the Pasadena Water and Power, and a nice  
14 parking lot with nice security fences all around right up  
15 underneath the freeway, almost.

16 The citizens that Merrilee was talking to are  
17 up here along Hammond Street, and they already have a lot  
18 of freeway noise, so --

19 MS. FELLOWS: And a lot of trucks, jeez.

20 MR. SLATEN: When I went down there and just  
21 kind of sat on the street corner, I could barely hear the  
22 rig for all the just freeway noise going on. So I wish  
23 we always had such a good convenient location to work in.

24 MR. TAKARA: Steve.

25 MR. SLATEN: Yes.

1           MR. TAKARA: The last "R" on the word reservoir,  
2 that's our location of our Bangham well.

3           MR. SLATEN: That may be a thousand feet, maybe  
4 at least 800 or so.

5           MR. TAKARA: Yeah, it's a quite a distance away.

6           MR. SLATEN: It gives us a little separation  
7 from the immediate pumping influence and gets up  
8 upgradient, hopefully, clearly upgradient, from the  
9 pumping so we can see the impact of what's in the water  
10 coming from the north.

11           Next. So drilling that went on there. What a  
12 nice, beautiful pad to work on, already paved over.

13           MR. FIELDS: Smog-free day.

14           MR. SLATEN: Yeah, nice clear day.

15           MR. FIELDS: This rig is no longer on the site.  
16 There's a -- they call it a development rig is on the  
17 site now, it's much smaller, and they're working on  
18 developing the five separate screened intervals within  
19 that monitoring well.

20           MR. SLATEN: So at this location, we had  
21 security. We had to come around and drive through the  
22 front gate all the time, right. So there was security  
23 here. It's an industrial yard. It's just a really nice  
24 place to do work.

25           MR. ZAIDI: Have you done any geophysical logging of

1 the well?

2 MR. SLATEN: Oh, sure.

3 MR. ZAIDI: And also the flow meter, wide line  
4 flow meter.

5 MR. SLATEN: David, do you want to talk just a  
6 little bit about what you have done and where you are.

7 MR. CLEXTON: They did a resistivity log. They  
8 did not do spinner logging.

9 MR. ZAIDI: That would be useful because that  
10 can tell you the flow to each zone.

11 MR. CLEXTON: During development, we'll be doing  
12 some pumping in each zone and taking some  
13 measurements during pumping, and we did not plan on doing  
14 spinner log in this well. We'll have some once the West  
15 Bay equipment is in, we'll be able to do some pressure  
16 profiling and get some of that data from there.

17 MR. ZAIDI: When you're pumping how many spin  
18 zones are there in there?

19 MR. CLEXTON: Five over about a 400-foot  
20 topography.

21 MR. ZAIDI: So you'll be backing each zone?

22 MR. CLEXTON: Yeah.

23 MR. SLATEN: Next.

24 MR. ZAIDI: How about some individual single  
25 well pumping test? That may be useful information for

1 local hydraulic conductivity activity and all that stuff.

2 MR. CLEXTON: We will be doing some testing.

3 MR. ZAIDI: Okay, that will be good because  
4 you'll be pumping anyhow, so why not do a single valve  
5 test?

6 MR. CLEXTON: I can talk to you off-line about  
7 that some more.

8 MR. FIELDS: We can also look at, if a well is  
9 pumping in the general area, looking at the pressure  
10 readings in this well. And that may be better -- you  
11 know, if they're pumping at a thousand or 2,000 GPM, that  
12 may be a better number than a single well.

13 MR. ZAIDI: That would be great. You can have  
14 transducers in the adjoining well somewhere to see how it  
15 is all relating.

16 MR. CLEXTON: Right.

17 MR. SLATEN: Okay. For the next location, more  
18 northern location, the location closer to our known  
19 existing chemicals, which are somewhere up here, our  
20 nearest monitoring well is somewhere up on the north.  
21 There's Woodbury Avenue and Interstate 210, and we had  
22 been talking -- there's school district property all  
23 along --

24 MS. FELLOWS: In that whole shaded area.

25 MR. SLATEN: Yeah, along here. That's Muir High

1 School. And so we were talking to the school district  
2 about getting -- there was actually a parking lot down  
3 here which looked unused and looked like just the perfect  
4 place, so we've been talking to the school.

5 But recently the school said they don't have  
6 time to deal with us right now, so we're talking about  
7 getting into this street that's kind of within inside the  
8 school property, but it's a City of Pasadena street, I  
9 guess, which gives us the ability to work more quickly on  
10 getting access to it.

11 It's kind of a street through the school, it's  
12 not a public street, really, and it doesn't pass all the  
13 way through. Is there a fence along here? Is it a  
14 public street?

15 MR. CLEXTON: It's a public street.

16 MR. SLATEN: So people will no longer be able to  
17 drive from here to here while we're in here.

18 MR. CLEXTON: Only during the construction.

19 MS. FELLOWS: But don't they have a gate on that  
20 street?

21 MR. CLEXTON: No, it's actually on Casitas,  
22 which is the west/eastern line there.

23 MS. FELLOWS: Right, but you can drive through  
24 half the street.

25 MR. FIELDS: But the gate on Casitas is right

1       there.

2               MR. CLEXTON:  Yeah, the gate is on Casitas, so  
3       you can enter from the north on Casitas down Woodbury,  
4       but you have to either turn left or right on Montana  
5       Street there.

6               MR. SLATEN:  Okay.  So when are we going to be  
7       shutting off the entire street?

8               MR. CLEXTON:  Well, we're currently working with  
9       the City of Pasadena to get all the permitting approvals  
10      to drill, and once that's set, which should be in about  
11      two weeks, probably we will have the street shut down for  
12      three to five weeks.

13              MR. SLATEN:  Okay.  So we'll put up fencing, our  
14      own gate, on each end or something, and we'll be working  
15      in this rectangle here.

16              MR. TAKARA:  Steve.

17              MR. SLATEN:  Yeah.

18              MR. TAKARA:  What's that property adjacent to  
19      the 210?  Is that Windsor Avenue?

20              MR. SLATEN:  This over here?

21              MR. TAKARA:  Yeah.  What property is that?

22              UNIDENTIFIED MALE SPEAKER:  That's CalTrans.

23              MR. SLATEN:  Right up is the CHPs, the  
24      California Highway Patrol, and they go from somewhere  
25      along here, and then it's CalTrans over here.  And we

1 just haven't pushed on -- we haven't been asking over  
2 there. But we thought we had a pretty good thing going  
3 here with the school. And then now, you know, I think it  
4 would be relatively quick to go in here, and I guess it  
5 will work for us.

6 MR. CLEXTON: It seems that it will. And we  
7 want to keep the wells as far to the east as possible.

8 MR. SLATEN: And these over here, they use their  
9 parking lots. I mean, they're pretty dense. You can go  
10 over there and they're full sometimes, so it just didn't  
11 look like they had just empty space waiting for us.

12 MS. FELLOWS: And I just wanted to add that one  
13 thing we're going to talk to the school district about is  
14 having a science class field trip. So the students would  
15 go over to Muir High School, we'll talk to the class one  
16 day, either that day or the next day or the next week,  
17 take them out, you know, it's just a little walk, so they  
18 don't have to hire buses or anything, and show them what  
19 a drill rig looks like. So that's something else we will  
20 be working on.

21 MR. ZAIDI: Is there open access to both  
22 locations? There's open access to both locations, right,  
23 if I wanted to go up there any time?

24 MR. SLATEN: Yes. At the Pasadena yard, you'll  
25 have to go through the main gate, tell them what you're

1 doing, and drive back, so --

2 MR. CLEXTON: I think with that one it would be  
3 best to send an e-mail to Steve or myself.

4 MR. ZAIDI: Okay. Great.

5 MR. CLEXTON: And we'll coordinate with the  
6 City. They're willing to have various people come  
7 through, but they want to be notified in advance.

8 MR. ZAIDI: Sure.

9 MR. SLATEN: Okay. Next. What else are we  
10 doing to try to figure out what's going on towards the  
11 Sunset area? The things that we have been doing, and  
12 will continue to do, is look at the water chemistry, and  
13 look at the other chemicals that are there, and look at  
14 our models. We've been doing those things, and are  
15 continuing to do that, and as we get more information, we  
16 add it into our database, and we look at it.

17 But what's new, what we're going to be doing  
18 that's new, trying to do more, because we haven't gotten  
19 any definitive answers yet, is now we're talking about  
20 stable isotope analysis investigation.

21 Do we have another slide that's more detailed on  
22 that?

23 MR. FIELDS: Yep.

24 MR. SLATEN: Yeah, here's where it is.

25 So we've identified an expert team of people who

1 work on this across the country; we're bringing them  
2 together to give them the background, look at existing  
3 data, get them to brainstorm a little bit, think about  
4 what they can do with the goal of being -- getting a  
5 study done and completed.

6 We're not looking at a theoretical study here or  
7 doing somebody's Ph.D. thesis, but, instead, in a  
8 relatively short time frame, getting the data together  
9 and analyzing it to try to give us an answer to the  
10 question of where the perchlorate that's found at the  
11 Sunset wells may be coming from.

12 So along those lines, we'll be preparing an  
13 addendum to our RI work plan for this specific study.  
14 We'll be planning it and collecting data between now and  
15 early next year, and reporting on it next year after we  
16 get the information back, get it studied and get the  
17 report written.

18 MR. SORSHER: This is also -- I think I e-mailed  
19 to Keith, I don't know if I cc'd you or not -- it was an  
20 article somewhere, they call this fingerprinting,  
21 perchlorate fingerprinting.

22 MR. FIELDS: The gentlemen you had identified as  
23 Richard Hurst.

24 MR. SORSHER: Right.

25 MR. FIELDS: So we talked to him. He looks

1 at -- I think his focus is more on the strontium  
2 isotopes, and then we're also talking to Neil Sturchio,  
3 and he looks at some other stable isotopes. And Mark  
4 Ripperda had identified Michael Land from the USGS.

5 MR. SLATEN: So the simple explanation of what  
6 you can do, is, a, a chemical that's made up of different  
7 individual atoms. Those constituents in that chemical  
8 from different sources have different ratios of the  
9 isotopes, and I forget what they are, but, you know,  
10 chlorine, you know, there's chlorine 19 and chlorine 20  
11 isotopes or something like that, and if your  
12 perchlorate came from a certain source, the chlorine in  
13 it may be most -- there may be a higher ratio of chlorine  
14 20, and if your chlorine came from another source, it may  
15 be a higher ratio of chlorine 19.

16 So by looking at those carefully, you may be  
17 able to draw some inferences about what the source of the  
18 chemicals was. And that's a real simple explanation of  
19 somebody who doesn't do that for a living, but I'll be  
20 paying attention to this because I think it has promise  
21 of giving us some good information.

22 MR. ZAIDI: Will there be a meeting with these  
23 guys here sometime?

24 MR. SLATEN: Yeah. We're going to try to pull  
25 them together, get them to think about what they need to

1 do. Don't have that planned specifically yet.

2 MR. ZAIDI: When you have a meeting, can we  
3 participate in that?

4 MR. SLATEN: Yeah. We'll be letting people know  
5 what's going on and what the schedule is. So as we get  
6 into this, I'll communicate.

7 Okay. Jumping on to a different thing that we  
8 tried. Here in the last few months, when we had seen  
9 some perchlorate levels that we thought didn't look --  
10 that might look as though they were questionable, there  
11 was a question -- there's been a question the EPA method  
12 314 perhaps gave false positives, and the idea is with  
13 increasing ionic strength, it might provide false  
14 positives.

15 So we did a little sampling event and testing of  
16 our own where we compared EPA method 314, the approved  
17 method, to method 8321A to try to see if it gave us the  
18 same results.

19 And the answer, basically, is it appears that it  
20 does give us the same results, and it appears that we're  
21 probably not getting false positives on perchlorate from  
22 EPA method 314. That's kind of the bottom line.

23 Keith's preparing a little letter report or  
24 something on that.

25 MR. FIELDS: I think we sent that out with the

1 meeting.

2 MR. O'KEEFE: Yeah.

3 MR. FIELDS: Like any study, of course, the  
4 issue came up that with the LC/MS/MS method, which was  
5 supposedly the better method, the matrix spike came out  
6 with a low recovery outside the limits; however, our  
7 objective was to determine if we were getting false  
8 positives, and the most that we could interpret from that  
9 matrix spikes is that we would get a lower concentration  
10 than we would expect from that LC/MS/MS method. So this  
11 bar would only go higher based on that low recovery in  
12 the matrix spike.

13 So the objective is still, yeah, we did not see  
14 false positives; but there was one QC glitch from  
15 that method, and it was sort of in the opposite direction  
16 that would have made a difference.

17 MR. SLATEN: And this was a limited minor study,  
18 but it didn't indicate to us that there's any further  
19 reason to pursue and look into this further.

20 MR. HAYWARD: Steve, is there any particular  
21 reason why you selected MW17 and MW20 to do the analyses,  
22 or did you just pick those at random?

23 MR. SLATEN: No, I mean, those were some where  
24 we had an idea that we had seen these levels, so we would  
25 be seeing, we thought, certain levels. We also -- ionic

1 strength was that an issue?

2 MR. FIELDS: Well, particularly with MW20, you  
3 know, what kind of got of us started thinking in this  
4 direction was that we had some hits in MW20 that would be  
5 like, you know, nondetect, nondetect, 20, nondetect, 50  
6 nondetect, nondetect, you know. So we thought, "Are  
7 those real results? Was there a false positive?" So we  
8 wanted to -- you know, that was an important well to look  
9 at.

10 And, also, 17, we knew we had some consistent  
11 levels of perchlorate detected in that well, so we wanted  
12 to use those two for just a very first step study, and if  
13 we would have found results in this that would have  
14 indicated we had false positives, then we would have  
15 wanted to take it to the next step.

16 MR. SLATEN: Okay. Lincoln Avenue update.  
17 Things are going well. They've been pumping since they  
18 were turned on in late July, treated approximately  
19 500 acre feet. Operations have been going fairly  
20 smoothly, according to Bob. We have influent  
21 concentrations of maybe a little lower than what we'd  
22 seen in some of the early samples, but within the range  
23 of what we might have expected, a little lower perhaps,  
24 reaching non-detect, and Lincoln Avenue has been working  
25 with the City of Pasadena to keep the system running.

1           And I understand that they've agreed that  
2 they're going to transfer a thousand acre feet of water  
3 rights, which will keep Bob pumping for at least another  
4 six months or so, so we're keeping the system on.

5           I'll just reiterate one more time how important  
6 that is to plume control and to NASA that the system  
7 stay on because Bob is our line of defense out there,  
8 from keeping this stuff from going on down gradient.

9           MR. O'KEEFE: Your focus here is perchlorate,  
10 but I'm also very concerned about the rise in VOCs at the  
11 Lincoln Avenue wells. So I was wondering if, Bob, you  
12 could address the trending of VOCs since you've been  
13 operating this plant.

14          MR. HAYWARD: Gee, Jeff, I -- you know, we've  
15 been so focused on the perchlorate, I haven't actually  
16 followed the VOCs. Tell us something, obviously, you  
17 have; I haven't, so tell us somebody.

18          MR. O'KEEFE: I haven't looked at it in two  
19 months, so -- they were rising -- if you looked at the  
20 data over the last year, the levels were rising.

21          Heather, do you recall?

22          MR. SLATEN: As they were with perchlorate, and  
23 we do have --

24          MR. O'KEEFE: It's such that the existing  
25 facilities may not be sufficient to remove. So what kind

1 of run time are you getting on the carbon?

2 MR. HAYWARD: We are within a normal run time on  
3 the carbon.

4 MR. O'KEEFE: Okay.

5 MR. HAYWARD: We anticipate a carbon change out  
6 every quarter, and July, August, September, October, and  
7 we haven't reached upgrade through any of our sampling  
8 ports.

9 MR. O'KEEFE: Okay.

10 MR. HAYWARD: And staff has not brought it to my  
11 attention as to well heads and concentrations, even  
12 though we do sample that well head.

13 MR. O'KEEFE: Sure.

14 MR. HAYWARD: I will check that data when I get  
15 back. One thing, Jeff --

16 MR. O'KEEFE: Well, that probably indicates that  
17 there's no significant rise in concentration.

18 MR. HAYWARD: Right.

19 MR. SLATEN: You know, I would be really  
20 interested if there were some divergence between the  
21 perchlorate levels and the VOC levels. I expect them to  
22 kind of track the way they have historically, and I would  
23 be really interested if there was any big difference, if  
24 VOC was going down and perchlorate was going up, or vice  
25 versa, that would be interesting to me hydrologically.

1           MR. HAYWARD: Jeff, I would like to comment that  
2 something that caught my attention right from the start  
3 as the elevated concentrations of carbon tet, as relate to  
4 the elevated concentration of perchlorate, I noticed them  
5 both at the same time, and that really was what really  
6 prompted us to take the action that we did at that time,  
7 and it just sort of followed that punch, that Pasadena  
8 is not producing any water, that the carbon tet was moving  
9 a lot faster than we had anticipated it moving.

10           MR. O'KEEFE: Right. I think I recall that you  
11 had historic highs of carbon tet last November.

12           MR. HAYWARD: Yeah.

13           MR. O'KEEFE: Somewhere around five micrograms  
14 per liter, which is more than double what the typical  
15 concentration had been historically.

16           MR. HAYWARD: Yes.

17           MR. FIELDS: And that would be consistent with  
18 our understanding of carbon tet to perchlorate ratios in  
19 the groundwater, Like Steve was saying.

20           MR. SLATEN: Because late last year, we saw up  
21 to 25 perchlorate.

22           JOHN SCHUMACHER: I can add, if you  
23 are looking for deviations at the last meeting, I had  
24 nondetect for about six, seven straight weeks, and then  
25 all of a sudden I had five point eight perchlorate, and then it

1 dropped down to four something, and last week I had about  
2 five point eight again.

3 MR. SLATEN: Okay.

4 JOHN SCHUMACHER: So it's kind of like  
5 doing this just east of Palm and a little further south,  
6 just to let you know that.

7 MR. SLATEN: Right, right.

8 JOHN SCHUMACHER: And I'm still  
9 waiting for it to come down.

10 MR. SLATEN: Well, what I'm hoping is that by  
11 keeping Bob's system on, it's nothing but good for you  
12 because -- and, you know, there may be a little bit  
13 that's moving in and out past you, you know, you have to  
14 shut down for a few months, and, hopefully, his influence  
15 is in your direction, and we'll keep anything else of the  
16 higher levels that are up there in his neighborhood and  
17 upgradient from him from coming on down your way.

18 MR. HAYWARD: Steve, I just want to comment.

19 You just made a very, very important,  
20 significant statement, and I hope people in the room  
21 understand what you actually are saying.

22 Lincoln's system was on the verge of being shut  
23 down as of November 30th this year, which we really have  
24 just killed all of this attention and proactive stuff  
25 that's been going on for the past couple of months. But,

1 I think, and maybe I hope Steve can tell me, I think the  
2 City of Pasadena has stepped up to the plate and they're  
3 going to help us out in keeping the system on-line and  
4 running, and I want to thank Brad and Gary and the City  
5 of Pasadena for stepping forward and saying, "Bob, we're  
6 going to keep your system running."

7 MR. TAKARA: With that, Bob, you want more  
8 water?

9 MR. HAYWARD: We're talking about it.

10 UNIDENTIFIED SPEAKER: So we'll give you the  
11 2,000.

12 MR. HAYWARD: Thank you.

13 MR. SLATEN: That's good news for everybody.

14 All right. What's next?

15 So we're also working with the City of Pasadena  
16 to get them a similar new system, and what we've been  
17 doing is working the -- kind of the background  
18 information with the preliminary vendor information. We  
19 asked the vendors request for quote, it was called, to  
20 get information for the vendors so we knew what we were  
21 working with. We compared that, talked it through, gone  
22 over some details with the City of Pasadena. Went out on  
23 tours of the other local regional treatment plants doing  
24 similar work. Unfortunately, I was unable to go on the  
25 tour because movers were moving my stuff into the house.

1           So that's my personal update, is I've got a  
2 house, and it's full of boxes now, and I've got my two  
3 cats, one dog, and spouse in the house. So there's no  
4 turning back now.

5           The City of Pasadena will be the ones to do the  
6 procurement of this system with full support and funding  
7 by NASA . The way we intend to do is by modifying the  
8 Devil's Gate agreement, which we've had for years, almost  
9 for decades, which has been where NASA has been funding  
10 the existing air stripping unit, and add on to that full  
11 funding for the ion exchange unit.

12           And, yeah, what's the bottom one, Keith.

13           MR. FIELDS: Oh, just since the last update  
14 meeting, we submitted the --

15           MR. SLATEN: Yeah, okay. Yeah, we did submit  
16 the 97-005 documentation to keep that part of the whole  
17 thing going with working towards the final DHS -- and  
18 this includes the -- this is the Monk Hill sub basin,  
19 97-005, so this is to support Bob's part of the Monk Hill  
20 and the City of Pasadena's part, which are not that much  
21 different because it's all the same water out there.

22           So the systems that went -- there's photos,  
23 what's the top left one?

24           MR. FIELDS: This is Bob's system, and this is  
25 Steve next to Bob's system. This is Calgon's system.

1 It's pretty similar, tall, the vessels here are a little  
2 bit -- they have a smaller diameter than Bob's, so that's  
3 why they look taller; but they're about the same height.  
4 So Calgon and U.S. Filter, just so you have a visual  
5 picture, are similar in size of tanks, but the Basin  
6 Water system --

7 MR. SLATEN: Who's that in the picture?

8 MR. FIELDS: That's me. David took about 700  
9 pictures yesterday, and one of them came out, which was  
10 my back. But at least it shows --

11 MR. SLATEN: About a six-foot tall person there.

12 MR. FIELDS: Right.

13 At least it shows just what these Basin Water  
14 systems are, they're like a metal container, 40-foot  
15 long, and they have 18 of these vessels in them, and they  
16 hold 25-cubic foot of resin each, and each one will  
17 process a thousand GPM.

18 MR. SLATEN: Because from the outside that looks  
19 like a cargo container.

20 MR. FIELDS: Right. Exactly. It just -- so if  
21 anybody hasn't seen the basin system it is a different  
22 take or a different approach than --

23 MR. SORSHER: They look like fiberglass vessels.

24 MR. FIELDS: Yep, in fiberglass vessels.

25 MS. FELLOWS: Did you say it's in a container?

1 MR. FIELDS: Yes.

2 MS. FELLOWS: I thought you said the container  
3 left. Doesn't it stay there?

4 MR. FIELDS: No. These are housed in the  
5 container.

6 MS. FELLOWS: So the container is higher than  
7 the outside height footprint is?

8 MR. FIELDS: Yes, significantly. It's still  
9 eight-foot, nine-foot.

10 MR. RIPPERDA: Yeah, you can see the ceiling.

11 MR. FIELDS: Yeah.

12 MR. RIPPERDA: The lights are pretty much right  
13 on the ceiling, so when you're inside of it, the ceiling  
14 is about -- I don't know -- eight feet from the outside.  
15 You know, it sits right on the pavement, so the total  
16 height is eight or nine feet.

17 MR. O'KEEFE: And the advantage of the  
18 containerized system is that, you know, the majority of  
19 the work is done at Basin Water, and it's delivered  
20 almost complete for installation, so you don't have a lot  
21 of the site work.

22 MR. HAYWARD: And, Keith, all three of these  
23 systems that we're seeing, they're all DHS, NSF, EPA  
24 approved?

25 MR. FIELDS: Yeah, all -- all -- there's

1 three -- from the list that we got from DHS a couple  
2 months ago for approved perchlorate systems, there were  
3 three vendors, and it's these three, unless there's been  
4 a change since then. So these seem to be the three that  
5 are in the forefront of perchlorate treatment in  
6 California.

7 MR. O'KEEFE: I believe that's true.

8 MR. SORSHER: They're all working on -- as you  
9 know, they're all coming out with new resins and working  
10 on even newer ones, and, you know, it's still a  
11 developing area.

12 MR. FIELDS: Right.

13 MR. O'KEEFE: And I think Lane is also getting  
14 into the business.

15 MR. FIELDS: Like Lane Christenson, like the  
16 drilling? Yeah, I've heard that, too.

17 MR. O'KEEFE: Yeah, but I don't know if we have  
18 any approved systems yet, but they're definitely trying  
19 to get in the business.

20 MR. FIELDS: Right.

21 UNIDENTIFIED FEMALE SPEAKER: Is that the  
22 department of --

23 MR. O'KEEFE: Yeah, where is that? Southern  
24 Cal?

25 MR. FIELDS: Yeah.

1           MR. O'KEEFE: I believe there may be one system  
2 in the planning stages in L.A. County.

3           MR. BOWMAN: In evaluating which system we  
4 should get, because we're sending out an RFP, does the  
5 State Health Department want to be, you know, part of the  
6 evaluation, or would you feel comfortable with any of  
7 these three?

8           MR. SORSHER: I think we ought to take a look at  
9 all of them. Yeah.

10          MR. O'KEEFE: I'm fairly comfortable with all  
11 three, although there are some internal discussions about  
12 some problems with Basin Water. I don't know the details  
13 on that, but I think it's something we're working with  
14 them on. Just maybe an operational problem that just  
15 requires a minor design change. But I think we'd like to  
16 be involved -- I'm more interested in what are the design  
17 parameters, given the 97-005 is not completed yet, so  
18 what the are peak concentrations that are going to be  
19 used to size the system? Answers?

20          MR. FIELDS: I think within the range of  
21 concentrations of perchlorate that we would expect all of  
22 the systems are going to be the same size. I mean, it's  
23 going to be a flow rate question, not a concentration of  
24 perchlorate question.

25          MR. O'KEEFE: Because it would just change the

1 replacement schedule or regeneration.

2 MR. FIELDS: It would just change the frequency,  
3 the replacement schedule, right.

4 MR. O'KEEFE: Okay.

5 MR. SORSHER: We'd also be interested in knowing  
6 what resins each manufacturer is proposing to use.

7 MR. FIELDS: Right.

8 MR. SORSHER: And what function, if they'll --  
9 we'd like to know about the functional groups, that's  
10 really becoming more of an issue these days.

11 MR. FIELDS: And we've already initiated that  
12 discussion with each of the vendors because we know of  
13 the concern -- you know, we went through that with Roman  
14 Haas resin at Lincoln Avenue, so we're trying to get as  
15 much data on that as we can and provide that to the city.

16 But, yeah, each system is proposing a different  
17 resin, but they're all either perchlorate specific or  
18 nitrate specific resins, so they're the same category of  
19 resins.

20 MR. O'KEEFE: Maybe for the benefit of this  
21 group, I'm not sure if they've heard this information  
22 specifically from us, but with the Lincoln Avenue system,  
23 we did require some nitrosomine monitoring at start up,  
24 and, in fact, we assisted Lincoln Avenue in collecting  
25 those samples and having them analyzed at our lab, and

1 they were analyzed for seven or eight.

2 MR. SORSHER: I think eight, in addition to the  
3 NDMA.

4 MR. O'KEEFE: So this is NDMA and then other  
5 nitrosomines. And we didn't really find anything coming  
6 off that resin, although there were low levels of NDMA  
7 after blending with the MWD water, which probably came  
8 from their source; "low" meaning three parts per  
9 trillion, so we don't -- it wasn't present at the  
10 effluent of the ion exchange vessel.

11 But depending on what Pasadena proposes, we may  
12 require similar type of monitoring. With Lincoln Avenue,  
13 though, we were kind of shooting in the dark because  
14 without knowing the functional group of the resin, we  
15 didn't really know how to target the nitrosomine  
16 monitoring, so we just did what our lab currently has  
17 capability of doing, which is that eight or nine  
18 chemicals.

19 We're still talking with Roman Haas on getting  
20 that information disclosed to DHS, and depending on how  
21 that comes about, we may go back to Lincoln Avenue and do  
22 some different type of monitoring for maybe a nitrosomine  
23 we didn't monitor for.

24 MR. SLATEN: Okay. What else have we got?

25 MR. FIELDS: I think that was it for the morning

1 that we had. That was sort of my stopping time.

2 MR. SLATEN: Well, to sum up on what's going on  
3 with the City of Pasadena system, just so everybody  
4 understands, the city --

5 It will be the City of Pasadena's system. It  
6 will be their contracting. They'll be the ones that  
7 operate it, and run it. That NASA has proposed to fund  
8 the cost of it, and NASA is working closely with the city  
9 to evaluate and consider, because we want to do it -- get  
10 as much help as we can to the city because of their  
11 limited resources, and because I have Keith's people and  
12 all their expertise on board, to help them in any way  
13 they can so, you know, we help, you know, draft a request  
14 for proposal or help evaluate the different vendors  
15 technical information. We'll help with engineering  
16 design, drawing, things like that. We'll provide all the  
17 help that they want, but it's their system.

18 MR. SORSHER: I think we'd like to, you know, be  
19 in the loop on that, you know, at least look at  
20 preliminary designs and basic assumptions. And just --  
21 you know, the earlier on, in case we spot something that  
22 we need to make an adjustment, the earlier on we know  
23 about it the better, so --

24 MR. SLATEN: Okay. Well, Keith is going to be  
25 drafting up to show to the City of Pasadena like a draft

1 request for proposal where he specifically -- we want you  
2 to specifically answer these questions, give us  
3 information about this; so, you know, I don't mind  
4 sharing that, but it's the City of Pasadena, they're  
5 really kind of the unofficial client here, so --

6 MR. TAKARA: More input, especially from each,  
7 the better off we are.

8 MR. SLATEN: Yeah, the better off, yeah.

9 MR. BOMAN: In fact, when you shoot it to us,  
10 shoot it to Alan, I guess.

11 MR. SLATEN: We do have some preliminary -- a  
12 lot of information from them when we sent out the request  
13 for quotation, which, you know, we've got information  
14 there.

15 Keith --

16 MS. FELLOWS: That's not proprietary?

17 MR. SLATEN: Yes, there's a lot of proprietary  
18 information in there. That's the one thing that I  
19 would --

20 MR. FIELDS: We could send you our evaluation  
21 spreadsheets, I would assume. Or maybe not. I'll look  
22 at it.

23 MS. FELLOWS: I don't know. I'm just raising  
24 the issue. I don't see why they couldn't, but --

25 MR. SLATEN: I don't want anybody to get in

1 trouble about proprietary information because when these  
2 businesses submit these bids, they don't intend for the  
3 world to know what all their costs and their details are.

4 MR. O'KEEFE: Maybe catch it at the next phase,  
5 at the 30 percent design or --

6 MR. SORSHER: Well, I don't really care about  
7 the costs. For me, money is no object. I don't know.  
8 Let me -- let us think about that.

9 MR. SLATEN: Okay.

10 MR. SORSHER: We need to have the details,  
11 anyway, at the end in order to approve it and write a  
12 permit for it.

13 MR. SLATEN: Yeah, I know. But once -- I'm no  
14 expert on contracts, but, you know, once there had been  
15 one selected, then all their information, I guess, is  
16 public, I suppose.

17 MR. SORSHER: Not necessarily.

18 MR. SLATEN: Not necessarily?

19 MR. FIELDS: I mean, we could ask each vendor if  
20 they mind if we shared this with DHS.

21 MR. SLATEN: Okay.

22 MR. SORSHER: Yeah, that's a good way to go.

23 MR. SLATEN: Just tell them that it's important  
24 that DHS understands, because they will ultimately have  
25 to be approving systems, and ask them when you can share

1 information with DHS.

2 MR. SORSHER: Another possibility might be  
3 confidentiality agreements, as necessary.

4 MR. FIELDS: I mean, if it becomes too much of a  
5 hassle -- I mean, when I've done this in the past, most  
6 of the time they say "sure" on things like that.  
7 Particularly with -- I mean, it's not like we're some --

8 MS. FELLOWS: Yeah, but they -- I mean, they  
9 have to understand that it's a public record unless you  
10 do put it under some sort of protection.

11 MR. SLATEN: Yeah, I mean, when I worked at EPA,  
12 we had special files for confidential business  
13 information. It was kind of a pain keeping a different  
14 file in the system for a certain --

15 MR. RIPPERDA: But DHS must have that because  
16 you get all kind of --

17 MR. O'KEEFE: Documents that are marked  
18 confidential, we don't have to disclose them for public  
19 records after review.

20 MR. FIELDS: We'll look into it.

21 MR. TAKARA: Yeah, I think that's something we  
22 should take into consideration prior to officially  
23 releasing the RFP.

24 If DHS needs to know this specific information,  
25 then we need something at the city, as well, to protect

1 the vendors, as well as DHS, to protect us from having  
2 any claims that we released this information to the  
3 public not knowing -- you know, the vendors not knowing  
4 it's going to be released to DHS or any other agencies,  
5 so those kind of things need to be covered in the  
6 details.

7           Look, we have no problem. I mean, I would  
8 prefer DHS get this information so that at least if  
9 they're comfortable prior to us selecting someone, then  
10 we're aware that there are some issues that need to be  
11 resolved, than actually having NASA spend millions of  
12 dollars to have to go back and rethink.

13           MR. SORSHER: Right. You know, maybe -- I think  
14 as Keith mentioned, maybe the first step is just to  
15 approach the vendors and see if it's -- if it's okay with  
16 them, because, you know, it may not turn out to be an  
17 issue at all. Hopefully that will be the case.

18           MR. TAKARA: When it came to Lincoln system, as  
19 of right now, are you still trying to get information  
20 from U.S. Filter on the Roman Haas?

21           MR. O'KEEFE: Actually Roman Haas.

22           MR. SORSHER: Yeah, actually our attorneys now  
23 are looking at a confidentiality agreement we have with  
24 them.

25           MR. O'KEEFE: With Roman Haas?

1 MR. SORSHER: With Roman Haas.

2 MR. SLATEN: And we would have much rather  
3 worked out all these details prior to start up.

4 MR. TAKARA: Now, if we were to release an RFP  
5 in the early spring, we're in the process of reviewing  
6 the proposals, would you think by that time DHS would  
7 have all the necessary information on the Roman Haas  
8 resin?

9 MR. O'KEEFE: I think we're very close to  
10 getting that information from Roman Haas. They've used  
11 some stall tactics, but I think we've finally worked it  
12 out.

13 MR. TAKARA: Oh, that's good. Because if I got  
14 all that information on the resins, it's all foreign to  
15 me, but if DHS says that they don't see any problems with  
16 this PWA-2, that's pretty much all we need to hear.

17 MR. SORSHER: Well, it will also help us, I  
18 think, if the city and JPL as the clients put pressure on  
19 these people to cooperate with DHS to get it done  
20 because, you know, they want to make the sales.

21 And so we'll pull on them from our end, you guys  
22 push on them from your end, and we'll get it done.

23 MR. O'KEEFE: I just have to remind you that  
24 this project is being done to comply with our 97-005  
25 policy and part of it includes a health risk assessment,

1 and if this resin were to produce NDMA or NDEA or another  
2 nitrosomine with a known cancer risk, that has to be  
3 included in the assessment. You're removing one risk,  
4 but you may be introducing a new risk to the public. And  
5 we have to have all that information for the risk  
6 assessment, and that's why we're really hammering this  
7 detail about resins and nitrosomines.

8 MR. RIPPERDA: So that should be part of your  
9 RFP. And that's one way to put pressure on Roman Haas,  
10 is they have to provide the information on the resin that  
11 DHS needs in their proposal.

12 MR. SLATEN: Do we know enough how to ask that  
13 question so that they have to answer?

14 MR. FIELDS: I don't know -- I mean, we're  
15 really, then, putting the pressure on U.S. Filter to make  
16 them tell us that they're going to use Roman Haas resin,  
17 then they need to have -- you know what I mean? We're  
18 getting --

19 MR. SLATEN: The question could be worded such  
20 that "no matter what resin you use can you tell us what  
21 the generation of" --

22 MR. O'KEEFE: Nitrosomines.

23 MR. SORSHER: Or what the functional group is --

24 MR. O'KEEFE: "If you tell us the functional  
25 group, we know what to monitor for."

1           But they often, if they haven't received a  
2 patent in the case of the PWA-2 used by Lincoln Avenue,  
3 they haven't yet received a patent, so they're not really  
4 willing to disclose that information very readily.

5           MR. FIELDS: Particularly to Battelle or -- I  
6 mean, they're going to have a lot better chance of  
7 getting that type of information than a contractor would  
8 because they're worried about somebody like -- not that  
9 Battelle would -- but, you know, another contractor  
10 figuring that out and making their own resin.

11           MR. HAYWARD: I just want to offer to Gary, if  
12 you like to see the -- have a better understanding as to  
13 what Jeff and Alan is talking about as far as sampling  
14 protocol and the amount of precaution they have to take  
15 because they're not getting the immediate cooperation  
16 from Roman Haas, if you want a copy or you want to review  
17 our amended operating permit --

18           MR. O'KEEFE: I think I gave Gary a copy.

19           MR. TAKARA: I have that already. Is that the  
20 most -- one of the most protected information that Roman  
21 Haas has resistance about is the functional group? I  
22 mean, if we asked in the RPF, "What is the functional  
23 group of your resin," by telling us that, that's pretty  
24 much the patented secret right there alone?

25           MR. SORSHER: That's right.

1 MR. TAKARA: Oh, I see.

2 MR. SORSHER: Yeah, yeah.

3 MR. TAKARA: Okay.

4 MR. SORSHER: Or, you know, maybe the way to put  
5 it to them would be have them willing to provide the  
6 information to DHS, if necessary.

7 MR. O'KEEFE: As far as the functional group,  
8 they could try to provide quaternary amine, right, which  
9 isn't --

10 MR. SORSHER: Which is a general. They're  
11 quaternary amine, but not saying what specific.

12 MR. ZAIDI: Basically the functional group is a  
13 chemical formula, set of chemical formulas that they use  
14 in the resins?

15 MR. SORSHER: It's the specific chemical that  
16 does the work of exchanging the ions on the plastic bead.

17 MR. O'KEEFE: And they typically contain some  
18 type of ethylamine, it's a dimethylamine or  
19 trimethylamine, ethyl or methyl or -- Alan's the  
20 chemist. I don't know.

21 MR. SORSHER: There's a number of them that they  
22 can play around with to make the resin perform  
23 differently. And --

24 MR. BOMAN: But if we put it in an RFP, I don't  
25 think Pasadena needs to know that stuff. Battelle

1 doesn't need to know that.

2 MS. FELLOWS: But, then, how do you make the  
3 decision?

4 MR. BOMAN: As far as sitting on the decision,  
5 if they could inform DHS, and they could -- that would be  
6 one of the criteria, DHS will use that as a criteria in  
7 the total picking the --

8 MS. FELLOWS: So you have a little black box  
9 criterion --

10 MR. BOMAN: That they work directly with DHS and  
11 not anyone else.

12 MR. FIELDS: Well, I would prefer that the  
13 criteria would be to the vendors that you'll provide a  
14 resin that doesn't form, nitrosomine, or whatever, I  
15 mean, because they can take the same vessel and put  
16 another resin in. You know what I mean.

17 MR. O'KEEFE: Right.

18 MR. FIELDS: I don't want to put -- I mean, we  
19 want them to provide clean water.

20 MR. SLATEN: I don't care what the resin is; I  
21 just want the water to be clean.

22 MR. FIELDS: Right. If they're giving us a  
23 resin that's making problems, then they need to give us  
24 another resin.

25 MR. O'KEEFE: Well, of those three vendors,

1 Basin Water is the most cooperative.

2 MR. FIELDS: And I know Calgon quoted a resin  
3 that I don't know if it's in use yet, they have a 1200  
4 series; is that right?

5 MR. O'KEEFE: 2100.

6 MR. FIELDS: So this site has a 2101.

7 MR. O'KEEFE: Yes.

8 MR. FIELDS: And they're talking about this 2103  
9 now, so I don't know. They were going to declassify  
10 something for us. We haven't seen it yet, but it was in  
11 relationship to these nitrosomine formations, the  
12 functional groups. So they may have a patent on the  
13 2103, and so they're happy to declassify it. I don't  
14 know.

15 MR. O'KEEFE: And just because of that series  
16 doesn't mean they're in any way similar.

17

18 MR. O'KEEFE: It's just their own numbering  
19 scheme.

20 MR. FIELDS: Their next progression. And then  
21 Basinwater had proposed a Resin Tech resin, so maybe you  
22 guys have already worked with them on that.

23 MR. O'KEEFE: I haven't heard of that.

24 MR. RIPPERDA: What does it mean when you say  
25 this has been to be incorporated into the risk

1 assessment? Wouldn't it just be that the resins have to  
2 meet all DHS requirements and that if --

3 MR. O'KEEFE: No, you would have to compare with  
4 alternative source of supply, so if the treated water had  
5 some increased risk, cancer risk, you'd have to compare  
6 that to, say, an MWD or other kind of purchased water  
7 source.

8 MR. RIPPERDA: So even if the NDMA generated by  
9 the resin is in compliance with the action level but it  
10 still presents some increased cancer risk, it presents a,  
11 you know, one times ten to minus seven increased risk,  
12 you would be comparing that against potential sources of  
13 water.

14 MR. FIELDS: Or a cumulative risk that you're  
15 developing.

16 MR. O'KEEFE: Yeah, but you can't combine the  
17 acute and the chronic risks.

18 MR. FIELDS: Right.

19 MR. O'KEEFE: I'm not really exactly sure in  
20 detail how this is done, but the MWD supply is going to  
21 have low levels of NDMA in it, anyway. But I think as  
22 long as you keep under the action level for NDMA, and now  
23 we have a new action level for NDEA, which is ten parts  
24 per trillion, that that would be sufficient, that would  
25 be protective of public health.

1           But then say there was something else that was  
2 being formed that was not yet on our radar, we would have  
3 to look at what the levels are that are being formed, and  
4 then send that to Steve Book, our toxicologist, and he  
5 would have to look at the risks or whatever kind of  
6 available data and try to determine if there's some kind  
7 of safe level for that.

8           MR. RIPPERDA: So how do they do that risk  
9 assessment in the 97-005 for an unknown -- they don't  
10 know what chemical, and they -- once the chemical becomes  
11 known there's not a risk number for it yet?

12           MR. O'KEEFE: Well, I tell you that these  
13 manufacturers all do this type of monitoring in-house,  
14 they just don't really disclose it to us. They may be  
15 aware of something --

16           MR. SORSHER: Wait a minute. They may not be  
17 doing it -- you know, they may be doing the routine stuff  
18 that -- they may not have been asked for this before.  
19 They may not have looked at it. We don't know, really,  
20 what they do in-house, do we?

21           MR. O'KEEFE: Well --

22           MR. SORSHER: You know, they comply with NSF 61.

23           MR. O'KEEFE: That report that came out for  
24 Lincoln Avenue system did kind of opened the door because  
25 it did indicate nitrosomine formation. It was a report

1 at some point during the permitting process that was  
2 released by U.S. Filter or Roman Haas, I forget which.

3 MR. SORSHER: You're talking about the  
4 Montgomery report, Montgomery Watson, that they gave us a  
5 copy of?

6 MR. O'KEEFE: Okay. They gave us a copy of a  
7 consultant report.

8 MR. SORSHER: Yeah, right.

9 MR. O'KEEFE: Yeah.

10 MR. SORSHER: But just to end, I think, Mark,  
11 once our chemists know what the functional group is, they  
12 will know what nitrosamines to look for, and then  
13 we'll -- once we identify the potential nitrosamines and  
14 if we find that we could come up with a safe level.

15 MR. O'KEEFE: Your question, though, is how do  
16 we know that before it's constructed?

17 MR. RIPPERDA: Yeah. This started when you said  
18 that the risk assessment portion of the 97-005 had to  
19 evaluate unknowns and nitrosamines.

20 And my question was: What do they put in the  
21 97-005? Should the 97-005 just say that --

22 MR. O'KEEFE: No. We should actually know what  
23 is possible to be formed at that point.

24 MR. RIPPERDA: And so that means the request for  
25 proposal should ask that the functional group be supplied

1 to DHS, and then you tell Keith what to put in the risk  
2 assessment.

3 MR. SORSHER: Yeah, yeah. It's going to be a  
4 little -- it will take a little cooperation.

5 MS. O'HART: Is it something, after the fact,  
6 that we can update? I mean, you can't just say because  
7 there is a risk, the trimethylamine functional group that  
8 you're going to form, and therefore  
9 then assume the concentration for a risk assessment. I  
10 mean, it's not -- it would have to be you know, in  
11 operation, if you're seeing it, and then you would have  
12 to evaluate it.

13 MR. O'KEEFE: You could do a column test.

14 MR. FIELDS: Also, it's one of those things that  
15 we can't project everything. We're going to give the  
16 best we can. If the resin's a problem in the future, we  
17 can change the resin. You know, I mean, it just seems  
18 like the risk assessment should be focusing on the  
19 contaminant from the chemicals that we know are in the  
20 water and that we're removing them. If we're introducing  
21 something else in the process because we used a -- you  
22 know, some -- the wrong -- you know, the construction  
23 contractor used the wrong cleaning agent on the pipe  
24 connections, you know, it just seems like it's  
25 impossible -- you just have -- you know, there's going to

1 be items such as that that you just fix because you can't  
2 project everything. And if it's a problem, then you just  
3 look at a new resin. You know what I mean? That seems  
4 like, if we're doing that, that opens up the door to like  
5 anything in the world, if a bird came by and landed on  
6 it --

7 MR. O'KEEFE: I'm just trying to rule it out.

8 MR. FIELDS: Right.

9 MR. RIPPERDA: It seems like the 97-005 should  
10 say essentially that we'll comply with all limits imposed  
11 by DHS. Like Keith says, if the functional group turns  
12 out to have nitrosamines that are too high, you make them  
13 change the resin. You know, that's part of the permit  
14 requirement. I don't see how you do that in the 97-005  
15 risk assessment.

16 MR. FIELDS: Right.

17 MR. RIPPERDA: Except maybe mention in the risk  
18 assessment that these things exist.

19 MR. O'KEEFE: I'm only bringing it up because  
20 the vendors aren't disclosing this information on our  
21 satisfaction, and it's not ruling out that likelihood of  
22 the nitrosamine formation. I'm just trying to get this  
23 up front so we have as much information that's useful for  
24 this risk assessment process.

25 I'm not saying it's perfect. I'm just saying

1 I'd like to get as much of this up front so that when we  
2 present this information to the public in a public  
3 hearing, we have confidence that the treatment system is  
4 not introducing any unnecessary risks to the public.

5 MR. RIPPERDA: Yeah.

6 MR. O'KEEFE: Now, we'll never know 100 percent,  
7 but I just think that it's prudent to do this up front  
8 prior to the permitting process.

9 MR. RIPPERDA: Well, it may seem like putting  
10 that black box like Merrilee says, in the request for  
11 proposal, that the vendor submits, you know, whatever  
12 chemical information DHS wants directly to DHS, just as  
13 part of the proposals. That's an easy way to put  
14 financial pressure on the vendor because their proposal  
15 can't be evaluated if they don't get it to DHS.

16 MR. SLATEN: Let's try that.

17 MR. FIELDS: I like that. And, you know, maybe  
18 I don't want to limit it to one thing. We'll say, "The  
19 vendor shall provide all required information to DHS on  
20 resin and other items prior to award of contract," you  
21 know, so that if something else comes up between now and  
22 then, you can ask for that and they know that this  
23 contract is contingent -- the award -- I don't know.

24 MR. SORSHER: And I think, practically speaking,  
25 within the next few months, maybe by the end of the year,

1 we'll know a lot more about this stuff that we don't know  
2 now. And, you know, again, this may turn out to be a  
3 non-issue all together.

4 MR. RIPPERDA: They're always improving resins  
5 and changing resin.

6 MR. SORSHER: Yeah. But I think it will be good  
7 once -- and I think we're seeing this already with  
8 Calgon, I think you mentioned Calgon coming up with more  
9 information. I think they're all starting to realize  
10 that they've got to cooperate on this more than they have  
11 in the past. I think it could be that, you know, because  
12 of the competitive situation there, we're seeing more  
13 cooperation from them than we have in the past.

14 So, again, this may turn out to be not that big  
15 a problem; but I think we just need to keep working on  
16 it.

17 MR. TAKARA: Jeff, the sampling that Bob is  
18 doing for nitrosamines and the other NDMA, can that be  
19 used to interpret what is expected from U.S. Filters'  
20 proposal for Pasadena. I mean, you know, you've got a  
21 functional, running operation out there, and the Lincoln  
22 Avenue water chemistry is somewhat similar.

23 MR. O'KEEFE: Are they proposing the PWA-2?

24 MR. TAKARA: Yeah, it is, right?

25 MR. SORSHER: Yeah.

1           MR. HAYWARD: That's their most advanced resin  
2 to date, unless they come out with something different  
3 and newer in the next six to eight months.

4           MR. O'KEEFE: I think it would be a good  
5 indicator. That doesn't mean we wouldn't require similar  
6 start-up monitoring.

7           MR. TAKARA: But, I mean, would that help  
8 with -- not knowing exactly what functional group this  
9 PWA-2 resin is using --

10          MR. O'KEEFE: We will know soon.

11          MR. TAKARA: I mean, assuming, just assuming  
12 that, you know, that's what this discussion is all about  
13 here, then if Roman Haas's resistance about giving you  
14 that information because of patent pending concerns,  
15 knowing what Bob's system is producing, three parts per  
16 million nitrosamines --

17          MR. SORSHER: That doesn't answer the question.

18          MR. TAKARA: That's true.

19          MR. SORSHER: That question hasn't been fully  
20 answered.

21          MR. TAKARA: Okay.

22          MR. SORSHER: We've looked at the chemicals that  
23 our lab had standards for, but if they have something way  
24 exotic that our lab doesn't know about, they wouldn't see  
25 it. That's why we need to find out what their functional

1 group is.

2 MR. O'KEEFE: But an operating, proven resin  
3 where we might have done some type of initial monitoring  
4 similar to what we did at Lincoln Avenue would increase  
5 our comfort level on your selection. This Resin Tech,  
6 I'm not familiar with that product.

7 MR. FIELDS: Is it Resin Tech?

8 MS. FELLOWS: I believe it's (inaudible).

9 MR. FIELDS: Yeah.

10 MS. O'HART: And, actually, for that one they  
11 told us. So I think it's like you said, it's a matter of  
12 the patent hasn't been issued yet. So if that's a  
13 patented resin, they're willing to share that information  
14 because we did get it from Basin Water.

15 MR. SORSHER: Roman Haas's patent is pending,  
16 too. They've got an application in. So, who knows,  
17 maybe they'll get the patent and it'll all be moot.

18 MR. TAKARA: Now, any of this information on the  
19 functional groups and possibility of causing cancer, does  
20 it fall under -- what is that? -- Proposition 65 or any  
21 of those mandates?

22 MR. SORSHER: If it turns out that the  
23 nitrosomine formed is on the Prop 65 list, it --

24 MR. O'KEEFE: The Prop 65 list has a whole long  
25 list of nitrosomines.

1           MR. SLATEN: Well, if we're through with that  
2 part of the discussion, to kind of sum up the working  
3 with the City of Pasadena, NASA , of course, wants to  
4 have containment, have control, have pumping as soon as  
5 possible, but there's a lot of time that's going to have  
6 to be built in before we're actually on and pumping.

7           Yesterday we were trying to talk about  
8 scheduling, and we realized how difficult it is to talk  
9 about schedule, but we're working on it. But there's  
10 months of preparation, there's permitting, we have to get  
11 an agreement in place, and there's permitting. So we're  
12 talking about, you know, a year schedule here to get  
13 things in, perhaps.

14           NASA's interested in supporting everything that  
15 we can to make it happen as soon as possible. We realize  
16 it's not going to be able to happen like the Lincoln  
17 Avenue system happened on such an accelerated schedule.  
18 So we're always looking for ways to make things work  
19 smoothly and happen as quickly as possible, but we've got  
20 a nice -- many, many, many months time frame here. We'll  
21 be working 97-005 in parallel to get it done as soon as  
22 we can get it done, but don't want anybody thinking that  
23 by Christmas time we'll be pumping water at the City of  
24 Pasadena Monk Hill wells.

25           MS. FELLOWS: Not this Christmas, anyway.

1           MR. SLATEN: Yeah. So exact schedule, we're  
2 still working on it and building it, but it takes us out  
3 many, many months. Pregnant pause there.

4           So we were going to have lunch now, and it's on  
5 its way. It should be here any minute. This afternoon  
6 we got a couple of things on the agenda to finish up  
7 early this afternoon. So do you want to just go ahead  
8 and break for a little bit, and the sandwiches hopefully  
9 will be here any time.

10          MR. FIELDS: Just for those -- we did try to  
11 structure the agenda so that we covered OU-1 and -3  
12 groundwater issues up in the morning, and then the  
13 afternoon is mostly CERCLA-specific items like the  
14 federal facilities agreement schedule and the soil vapor  
15 extraction system. So everybody stay, but --

16          MR. SLATEN: It won't hurt our feelings if  
17 somebody needs to go.

18                 (At the hour of 11:57 P.M., a luncheon recess  
19 was taken.)

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1 LA CAÑADA FLINTRIDGE, California

2 THURSDAY, OCTOBER 7, 2004

3 11:57 a.m.

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5  
6 MR. RIPPERDA: Let's get started.

7 MR. SLATEN: Let's do it.

8 (Discussion held off the record.)

9 MR. SLATEN: Well, a lot of people went on that  
10 didn't really need to hear the rest of what we had to  
11 talk about.

12 Let's do the OU-2. I think this will go pretty  
13 quickly. OU-2, we have the soil vapor extraction on the  
14 last of the four locations, and it's been on since April,  
15 and no surprises. We've removed a few pounds of the  
16 major organics. I guess the next step is to look at all  
17 the information we have, write up a report.

18 MR. FIELDS: Yeah.

19 MR. SLATEN: And it's still on, right?

20 MR. FIELDS: It's still on through October at  
21 VE-02. In general, we're getting the most so carbon  
22 tetrachloride and TCE out of VE-01 and VE-02, so I think  
23 the -- while we're preparing and going through this  
24 optimization progress report, we should -- my  
25 recommendation is that we move on to VE-01 and keep that

1 cycle going.

2 MR. SLATEN: Just go right to it.

3 MR. FIELDS: Of the wells we have, I think that  
4 one would be the next best well, considering the two  
5 constituents that we're primarily concerned with, and  
6 then that progress report, we're shooting -- you know  
7 that's a November time frame report.

8 So, I mean, it's all going to happen quickly, so  
9 I don't see the reason to just stop operating while we  
10 wait for this progress report to come out. Just to move  
11 on to the next well.

12 MS. FELLOWS: So the progress report, I could  
13 guess, but why don't you just tell me what it is.

14 MR. FIELDS: It's just we've gone through four  
15 wells. We have a system that rotates, that moves between  
16 wells. And now once VE-02 on October 20th, we will have  
17 operated at every well for at least six months.

18 So we want to look at the data, evaluate levels  
19 again, and determine where best to operate from here on  
20 out. You know, how successful were we with the first  
21 cycle and how do we want to modify operations for the  
22 next.

23 And, basically, we're going to want to --  
24 there's going to be constituents that we're primarily  
25 concerned with, carbon tetrachloride and TCE, and we're

1 going to focus on the wells that give us the highest mass  
2 removal rate of those chemicals, is the general, or at  
3 least where I see this progress report going.

4 MR. SLATEN: Yeah.

5 MR. RIPPERDA: And, ultimately, you have to look  
6 at shut down criteria, and you'll focus first on the  
7 wells that give you the most mass the soonest, but we'll  
8 have to cycle all four wells at least once more to look  
9 at rebound and look at the Regional Board's criteria for  
10 asymptotic levels and the amount of rebound, and, you know,  
11 they've got a whole policy on how to evaluate.

12 MR. FIELDS: And we've developed an exit  
13 strategy, or at least a performance evaluation  
14 approaching that, at least in general terms, and then  
15 we'll want to follow through that and see where we are  
16 within that process.

17 MR. ZAIDI: And are we taking lab samples --

18 MR. FIELDS: Yes.

19 MR. ZAIDA: -- from the individual wells?

20 MR. FIELDS: Soil vapor monitoring points?

21 MR. ZAIDI: Yes.

22 MR. FIELDS: That will be part of this  
23 evaluation, as well as the vapor monitoring data.

24 MR. ZAIDI: Okay.

25 MR. FIELDS: But there's more to say on that one

1 next time.

2 MR. SLATEN: Okay.

3 MR. ZAIDI: So we will know that next time?

4 MR. FIELDS: Or, you know, between now and the  
5 next meeting, we will have submitted our reports, our  
6 optimization progress report.

7 That's it for VE-02.

8 MR. SLATEN: If there's no more questions on  
9 VE-02 soil vapor, move on to the FFA schedule.

10 MR. FIELDS: We were, Mark and I and Vickie,  
11 were talking at the break. We thought with this FAA  
12 schedule, it would be a difficult thing to keep, as we go  
13 through the iterations of working, you know, off of a  
14 Microsoft Word document for there to be something  
15 meaningful captured by the court reporter.

16 So if it's all right, we are going to have her  
17 move on, or she can leave at this point.

18 MS. FELLOWS: Should we talk about the next  
19 meeting or anything while she's on?

20 MR. FIELDS: That's a good point.

21 MR. SLATEN: Sure. So the next RPM meeting --  
22 so we'll do a conference call next month on about -- what  
23 date? Do you have a calendar up, Keith?

24 MS. FELLOWS: It's November 4th on the agenda.

25 MR. SLATEN: Okay. We'll plan on November 4th

1 for a conference call, and that will put us, also having  
2 a conference call in early December.

3 MR. FIELDS: It could be the 2nd or the 9th.

4 MR. SLATEN: And that means we should have our  
5 next face-to-face RPM meeting in January. Probably not  
6 the first week in January because everybody gets back, so  
7 we may push that one to mid January.

8 MR. FIELDS: Thirteenth? Twentieth?

9 MR. SLATEN: Something like that.

10 MS. FELLOWS: Yeah, let's leave that open a  
11 little bit because as I look at -- if we have a public  
12 meeting, maybe we can tie it in so everybody can get one  
13 flight for the price of two.

14 MR. RIPPERDA: For the December meeting, I'm  
15 going to be in Guam the week of December 9th.

16 MR. SLATEN: So do it the first week.

17 MR. RIPPERDA: So I'd rather do it on the  
18 second.

19 MR. FIELDS: I have jury duty on the 4th and  
20 2nd, but there's replacements for me.

21 So, tentatively, we're looking at November 4th  
22 for the next tele-con and then December 2nd, and then a  
23 face-to-face in mid January, to be determined.

24 MR. RIPPERDA: When's your jury service?

25 MR. FIELDS: Jury duty is the 4th of November

1 and the 2nd of December.

2 MR. RIPPERDA: Those two days.

3 MR. FIELDS: It's next week, and then these two  
4 days.

5 MR. RIPPERDA: If these are conference calls, we  
6 could do them on Wednesday instead of Thursday.

7 MS. FELLOWS: Actually, that would be better for  
8 me because I have a conference call I have to miss each  
9 time.

10 MR. FIELDS: So the 3rd and the 1st? Great.

11 MR. RIPPERDA: And I know there's an infinity of  
12 Battelle employees who would all gladly step in for you.

13 MR. FIELDS: That's easy enough.

14 MR. SLATEN: With that, are we finished with the  
15 court reporter for today.

16 MR. FIELDS: Yes.

17 (Whereupon, at 12:53 P.M., the meeting continued  
18 off the record.)

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1 STATE OF California )

2 ) ss

3 COUNTY OF LOS ANGELES )

4 I, VICKIE BLAIR, Certified Shorthand  
5 Reporter, number 8940 RPR-CRR, for the State of  
6 California, do hereby certify;

7 That the above proceeding were recorded  
8 stenographically by me;

9 That the foregoing transcript is a true  
10 record of proceedings.

11 I hereby certify that I am not interested in  
12 the event of the action.

13 IN WITNESS WHEREOF, I have subscribed my name  
14 this 30th day of November, 2004.

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Certified Shorthand Reporter for the  
State of California