

ORIGINAL

PROPOSED PLAN - PUBLIC MEETING -)
GROUNDWATER CLEANUP FOR)
OPERABLE UNITS 1 AND 2A AT)
MARINE CORPS AIR STATION EL TORO)

Date and Time: Tuesday, November 13, 2001
6:00 p.m. - 9:00 p.m.

Presentation/Question Session: 7:00 p.m.

Held at: Irvine Ranch Water District
15600 Sand Canyon
Irvine, California

(Pages 1 through 61)

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PRESENTATIONS WERE MADE BY THE FOLLOWING SPEAKERS:

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1 IRVINE, CALIFORNIA; TUESDAY, NOVEMBER 13, 2001

2 7:02 p.m.

3
4 MR. GOULD: Good evening, and thank you all for
5 coming. My name is Dean Gould. I am the BRAC
6 Environmental Coordinator for Marine Corps Air Station
7 El Toro.

8 Tonight we have the public meeting for the
9 proposed plan for the groundwater cleanup for sites
10 known as operable unit 1, which would be site
11 18, which is the off-station groundwater
12 contamination, and operable unit 2A, site 24, somewhat
13 informally known as the, quote, unquote, source area for
14 that contamination.

15 I do sincerely thank you for being here this
16 evening. I know there are a lot of competing interests.
17 While we did hope the attendance would have been a
18 little higher than what we have, I do see some faces I'm
19 not accustomed to seeing in what we call restoration
20 advisory board meetings, which is a meeting that we have
21 every other month where we give an update on the
22 environmental status of the base.

23 So I am encouraged to see the new faces, so
24 thank you especially to you folks for coming.

25 Maybe one reason why folks did not come out in

1 greater numbers tonight is because due to the ad that
2 ran in the paper. If you were to read it top to bottom,
3 it pretty much says it all. So maybe we don't need to
4 go on now.

5 It really is quite comprehensive. And in
6 addition to that, with the information that's set up at
7 the tables here and what we're going to give in the more
8 formal presentation, I think you'll have literally as
9 much information as you care to have on exactly what
10 we're doing, what we're proposing.

11 And we want to hear back from you too. This
12 is not meant to be strictly a one-way type of forum
13 here.

14 Let me go ahead and go over what the format
15 for tonight is. Believe it or not, we're actually
16 one-third of the way through now that we're just getting
17 into the more open-speaking portion.

18 The way this public meeting was set up and the
19 format that we're still working with, but I think is
20 probably the best for all concerned, at least as
21 appealing to the widest spectrum of people, would be to
22 have what we call a poster-board session where we have
23 the various stations set up, and we have respective
24 experts, if you will, for each of those stations.

25 We have regulatory agency representatives. We

1 have people from the Navy staff. We have, in this
2 instance, water district representatives, community
3 relation specialists. Just about anybody that you would
4 need to go, to to get an answer to whatever you might
5 have a question on with regards to these particular
6 situation at El Toro are here tonight.

7 And so for that first hour, it was more of an
8 informal question-and-answer period, going through the
9 various phases of the program up to where we are
10 tonight, which is the proposed plan proposal, if you
11 will, to the community.

12 And this is what we're in right now which is called
13 the public comment period where for 30 days, we sent out
14 this proposed plan, and it is open for public comment.
15 And this meeting is meant to both solicit interest as
16 well as answer questions, get community feedback on the
17 alternative that we, the Navy, in concert with the water
18 districts, in this instance, are proposing.

19 So that was the first part of the meeting the informal
20 poster-board session.

21 Now we're going to go into a little bit more
22 of a prepared presentation, if you will. And I would
23 ask if you please hold off on comments until we're
24 completed with the presentation.

25 We're going to have a variety of speakers this

1 evening going through all the different phases that are
2 on display here tonight. And then at the end, there
3 will be the opportunity for the public to provide formal
4 comments.

5 We have the good fortune of a formal court
6 reporter here. As you can see, very detailed notes are
7 being taken here this evening, and any comments that are
8 provided or questions that are provided will be
9 responded to. It is our job to respond in writing to
10 them, so we want to make sure that we obtain your names,
11 and we'll make sure that you get those responses in
12 writing to any comments that are provided to us this
13 evening.

14 And then the third portion would be after the
15 formal presentation, if you will, if anybody would then
16 like to still come forward and maybe privately go ahead
17 and offer input to the court reporter, it's certainly
18 your opportunity.

19 So you can either provide comments openly at
20 the end of the presentations, or afterwards, once the
21 presentation portion is concluded, feel free, by all
22 means, to go ahead and come up and provide them
23 to the court reporter in that manner.

24 We also have comment cards, if that's your
25 preference. You can go ahead and just fill them out in

1 that manner. No shortage of opportunity to provide
2 input to us this evening.

3 So we'll go ahead if -- I think we covered it
4 all, to go ahead and kick it off.

5 The purpose, I think we touched on that. We
6 want to present to you, the public, in a formal sense,
7 what the proposed plan is for these particular sites in
8 our overall CERCLA program.

9 Before we go too much farther, for those that
10 would -- I think just about anybody would benefit from
11 it, but for those -- especially the new members here
12 tonight, I would suggest three documents that you
13 should definitely have.

14 Hopefully everybody has a copy of the proposed
15 plan itself. That would be this document here. It's
16 very good because it really does say it all. In
17 addition, it has a glossary of all of the terms in the
18 back. That's one key document you should have.

19 Another would be an outline, really a copy of
20 all the slides we're going to be giving this evening. I
21 think we have those on a table. If anybody needs that,
22 we can take a brief recess, and you can grab one of
23 those to follow along and maybe take notes as we go
24 through the presentation.

25 And a third would be I see a color handout of

1 the actual groundwater plume, over there. That would be
2 nice just to take with you later on for reference
3 purposes.

4 So definitely, if nothing else, I suggest that
5 you take those three documents. But in addition to
6 that, there is a whole table full of documents out there
7 out front, plus at the various stations here. So
8 please, by all means, help yourself. Plenty of
9 information to go around.

10 Specifically, as we talked about a little bit,
11 we're going to propose to you the remedial action for
12 the volatile organic compounds that have found their way
13 into the regional aquifer off-station at MCAS El Toro
14 into the regional groundwater, as it mentions there.

15 We want community input. This is not just
16 because it's a mandated requirement. We truly come up
17 with a better product by getting community input.
18 That's what we want and need this evening.

19 And then at the bottom there, opportunity for
20 the community to learn about, and you can see the
21 various bullet points. The contamination itself, how it
22 got there, how it's going to be cleaned up, how long
23 it's going to take, all those types of things.

24 Just to kind of summarize, tonight really is
25 to focus on the CERCLA remedy for these two particular

1 sites. But we can't really go too much further without
2 at least acknowledging that how we got here was by way
3 of a settlement agreement that was just recently signed
4 by the Department of Justice on behalf of the Navy, in
5 addition to signatures by the local water districts, in
6 this instance, Orange County Water District and Irvine
7 Ranch Water District.

8 And certain people in the audience this
9 evening may have a little bit bigger smiles on their
10 face than others because that has been a very, very long
11 time coming, and a great deal of effort has been put
12 into it. And I'll give a little time line here in a
13 minute to show you a portion of how long it's taken.

14 So we're very, very excited about that. It's
15 a significant milestone in the program, and especially
16 for the ultimate cleanup of the base and the affected
17 off-station groundwater.

18 The settlement agreement that I mentioned is a
19 very, very complex agreement, and it did take quite a
20 bit of time to ultimately reach agreement on it.

21 And "agreement" really is the key word. It
22 was agreed upon by the local water districts and the
23 Department of Justice on behalf of the Navy, as I
24 mentioned, to identify what we feel is the implementable
25 remedy for this particular situation that we have, being

1 the contaminated groundwater.

2 So it's something that we have over years and
3 extensive effort come to agreement on now, and we feel
4 it's a very good product for the community, as well as
5 for the agencies involved. So let's go ahead and get
6 into the time line a little bit.

7 Okay. The first block there, the Federal
8 Facilities Agreement was signed, it mentions, in
9 February of 1990. Or I'm sorry. It was placed on the
10 National Priorities list in February 1990.

11 The Federal Facilities Agreement is something
12 I have in my hand. And what this means is this
13 off-station groundwater was identified, and it was of a
14 significant enough extent that the base was placed on
15 something called a National Priorities list.

16 And once that is done, in this instance, the
17 Navy was obligated to enter into something called a Federal
18 Facilities Agreement, which was signed by a
19 representative of the Navy, as well as what are now the
20 Regional Water Quality Control Board, represented by
21 Patricia Hannon this evening, Department of Toxic
22 Substances Control with Triss Chesney here this evening,
23 and U.S. EPA with Nicole Moutoux here this evening.

24 So those are the four parties that signed this
25 agreement, and it's a legally binding document that says

1 the Navy is committed in a very structured sense to
2 obtain a cleanup or complete follow-through through the
3 CERCLA process of those sites that are identified in
4 need of formal remediation.

5 And there's various schedules that needed to be
6 adhered to with direct oversight by the three agencies I
7 just mentioned. So for the first step, we're placed on
8 the list, and then we enter into an agreement.

9 Okay. Now, once the agreement's been reached
10 and we have a schedule to adhere to, the first step of
11 that schedule would be the RI phase of remedial
12 investigation. And you can see, looking at your
13 handouts, what happens during that phase.

14 As the name implies, it's an investigation.
15 We're trying to identify how much, where, when, how,
16 those types of things. Very detailed investigation as
17 to the source and the extent. And that was completed
18 between the two different sites right around the
19 1996-1997 time frame.

20 The next step would be the feasibility study.
21 And from the feasibility study stage, now we're looking
22 at ways to remedy those problems that were identified in
23 the RI phase. So we're looking at alternatives, and
24 we're looking for the preferred alternative, which is
25 what we're here presenting you tonight. And that two --

1 those -- those alternatives were published in the
2 feasibility study also right around the '96-'97 time
3 frame.

4 And then the publishing of proposed plan and
5 the holding of the public comment period 2001. What
6 happened? That's five years. What happened between then?

7 Well, what happened was very lengthy
8 discussion and negotiation between the parties that I've
9 mentioned just a little bit ago. Very complex, both
10 technically, physically, all those types of things, but
11 we have now reached agreement.

12 So it took a little bit longer than what we
13 would have hoped. The key thing is that we all are here
14 this evening with a signed agreement so we are now able
15 to move forward or continue on forward with our CERCLA
16 process, that being the public comment period of the
17 proposed plan phase.

18 Once this phase has been closed out, we've
19 solicited and responded to public comments, if, in fact,
20 after that input we do have public acceptance, and that
21 is one of the criteria that we need to consider, we can
22 move forward then with the publication of a ROD with
23 hopefully this still being the preferred alternative.
24 That would be the next step in the normal CERCLA
25 process.

1 And then with the agreement that we do have,
2 we would continue to be move forward with the water
3 districts, in this instance, with the remedial design of
4 the remedy, and then move forward with the actual
5 treatment of the groundwater itself over the
6 long-term.

7 So that is the process-- I won't say a nutshell
8 because that was kind of a big nutshell, wasn't it? But
9 that is the process and how we've gotten to where we are today.

10 All right. Now, the reason why I asked to be
11 sure that you have one of those color handouts that are
12 over on the table there, because looking at this one,
13 it's not quite as crisp, and plus, just to get it on
14 this elongated sheet, it's a little distorted, and that
15 handout is a little bit crisper. So if you like, feel
16 free to pick this up.

17 But this does give a pretty good feel for
18 the extent of the on- and off-station groundwater
19 contamination that did take place that we are now
20 responsible for providing a remedy for and ultimately
21 making sure that it is cleaned up.

22 Tonight I'll be serving essentially as a
23 facilitator for the discussion this evening. We do, as
24 I mentioned, have a variety of speakers, each presenting
25 a different portion of where we're at in the process.

1 I'll turn it over now to Ms. Content Arnold.
2 She is the lead remedial project manager for El Toro.
3 She's with the Navy staff, working out of San Diego.
4 She's going to go ahead and start off with some of the
5 more technical aspects of some of this, getting into the
6 site descriptions and getting into the remedial
7 investigation.

8 MS. ARNOLD: Thanks, Dean.

9 As Dean said, I'd like to start off by giving
10 you a brief description of the two sites. Site 18 is
11 the regional groundwater plume, and it includes the area
12 of groundwater contamination in the principal aquifer
13 extending off-station from the source area. The Source
14 area is Site 24. The plume extends approximately
15 three miles west near Culver Avenue in Irvine.

16 Now, the principal aquifer varies from
17 approximately 200 to 450 feet below ground surface. The
18 primary chemical of concern is trichloroethene, or TCE
19 as I'll be referring to it this evening.

20 Site 24 is a VOC source area, and that
21 encompasses approximately 200 acres in the southwest
22 quadrant of the base. It also includes two large
23 hangars, buildings 296 and 297. Now, this is where
24 aircraft repair and maintenance took place on the
25 base.

1 The footprint of site 24 includes the shallow
2 groundwater unit contamination, as well as the soil
3 contaminated within the area.

4 This evening we're not going to be
5 focusing on the soil because that was addressed in an
6 interim ROD back in 1997. We plan on having a final ROD
7 for the soil cleanup in the year 2002. So, like I said,
8 tonight we'll be focusing on the shallow groundwater
9 contamination for site 24.

10 Additionally, the shallow groundwater unit
11 varies from approximately 80 to 110 feet below ground
12 surface. And once again, the primary contaminant of
13 concern is TCE.

14 Now, I know this is difficult to see, so I
15 hope you have your handouts with you. But basically,
16 this is an aerial of site 24, and I'll be flipping back
17 to that map to put it in perspective for you.

18 But these are the two hangars over here, which
19 was the source of the contamination where the industrial
20 activities took place on the base. And the
21 contamination flowed off base in a westerly direction
22 like this.

23 To put it into perspective: here is Site
24 24, shallow groundwater contamination here, and then we
25 have just some landmarks that I'd like to point out:

1 I-5 right here, the 405 over here, and then Culver Drive
2 over here. And you can see that the principal
3 contamination area extends off base approximately 3
4 miles, like I said.

5 As Dean mentioned, as part of the CERCLA
6 process, we completed a remedial investigation, or as we
7 commonly refer to it, an RI.

8 So what is an RI? Well, the objective of the
9 RI is to evaluate the presence, nature, and extent of
10 contamination. It includes three components primarily,
11 an initial investigation, an extensive field
12 investigation, and also a base-line risk assessment.

13 So what are the components of the initial
14 investigation? Well, this included document review,
15 aerial photo reviews, personal interviews, and an
16 initial soil gas investigation.

17 The extensive field investigation included
18 first developing a workplan. And this workplan was
19 reviewed by the BRAC Cleanup Team, and that includes
20 U.S. EPA, DTSC, as well as the Regional Water
21 Quality Control Board and the Navy.

22 And before going out into the field, we gained
23 concurrence from that regulatory group prior to
24 commencing field work. And once out in the field, we
25 did extensive soil, groundwater, and soil gas sampling.

1 From this data that we gathered, we put it all
2 into a risk assessment, which Dr. Temeshy will be
3 touching on a little bit later on this evening.

4 This RI was conducted between 1992 and 1997,
5 and the conclusions basically confirmed the
6 following:

7 First of all, that VOCs in soil and
8 groundwater originated at site 24, the source area. The
9 highest concentrations of TCE were found beneath
10 building 296, that is, one of the hangars that we
11 previously looked at, and concentrations were 4,850
12 parts per billion.

13 TCE was also the predominant chemical of
14 concern, as we discussed, in both soil and groundwater
15 TCE is an industrial solvent that was used primarily
16 for cleaning, degreasing, and paint stripping.
17 Historically, it was common practice to use that.

18 VOCs have migrated from the soil at site 24 to
19 the shallow groundwater unit and then finally to the
20 principal aquifer. And also, as we've discussed, the
21 VOC plume extended three miles west of the station in
22 the principal aquifer near Culver Drive.

23 Within station boundaries, the TCE is limited
24 to the shallow groundwater unit, not the principal Groundwater
25 unit, and That's the shallower unit from 80 to 110 feet below

1 ground surface. Outside the station boundary,
2 we have contamination in both the shallow and
3 the principal aquifer. And in the shallow groundwater
4 unit, water quality is better than the federal and state
5 water quality standard of 5 parts per billion for TCE.

6 In the principal groundwater unit, the concen-
7 trations range generally from barely detectable up to 50
8 parts per billion.

9 Finally, TCE concentrations gradually decrease
10 as you move away from the source area.

11 Now, this next figure here depicts the
12 migration of VOCs released from the surface. Over here,
13 if you can imagine, this is where the hangars are here.
14 We have a release of TCE to the soil, and you can see it
15 migrating to the shallow aquifer approximately 80 to
16 110 feet below ground surface.

17 As it travels downgradient, it eventually
18 migrates to the regional groundwater plume, which is
19 deeper,
20 approximately 200 feet below ground surface.

21 MR. GOULD: Thank you, Content.

22 Okay. As I outlined just previously, the next
23 step in the process would be the feasibility study
24 portion where we look at alternatives.

25 But in order to help us determine those

1 alternatives, we need to know, with all the information
2 that we just gathered from the remedial investigation,
3 what threat is actually posed to human health and the
4 environment.

5 So Dr. Andrea Temeshy is going to go ahead and
6 speak to us tonight on that particular subject. She is
7 an employee with Bechtel National, and she is
8 outstanding in her field.

9 DR. TEMESHY: Well, thank you.

10 Before I go through what the results are on
11 the risk assessment, I want to briefly introduce the
12 concept of the risk assessment.

13 Basically, what the risk assessment
14 does is estimate what the potential hazard
15 to an individual exposed to the chemicals at a site are.
16 That is, are we going to have a potential for some
17 adverse health effect?

18 And when we talk about an adverse health
19 effect, we're talking about could this person develop
20 cancer, or chemicals also can elicit another type of
21 effect like non-cancer effects, which could range
22 anywhere from liver or kidney or systemic toxicity-type
23 effects.

24 So when we talk about the risks, what we're
25 doing is we are translating chemical concentrations into

1 an estimate of hazard to human health.

2 So on that, we'll move on to why do we do a
3 risk assessment. As was stated before by Dean, it is an
4 integral part of the remedial investigation concept. So
5 as a first step, we have to be able to do it in
6 order to be in compliance with guidelines.

7 And again, it's to determine if we have
8 a problem as far as human health based on exposure to
9 the chemicals at a site?

10 How are the results of this assessment
11 used?, If we have a risk, then that will determine
12 if cleanup is going to be necessary or not at the site.

13 How the risk assessment is done. I'm going to
14 go through, the steps that I do in order to
15 quantify risks so that we know all the components that
16 are utilized.

17 And that is -- the first thing is we have the
18 chemical contaminants, and those are at a certain
19 concentration. For example, we have TCE. We've got
20 concentrations of TCE, and we're going to be using that
21 in the risk assessment.

22 The next thing is we are going to determine
23 who's exposed. What is -- what are the potential
24 receptors at a site? And looking into the future, could
25 we have a residential receptor at the site? That would

1 be a very conservative scenario.

2 And how would exposure take place? What kind
3 of pathways? Is this person going to be drinking the
4 groundwater? And is he going to be using it as a
5 drinking water source? It's going to be also used for
6 bathing, so you have dermal contact.

7 And then you would also have the inhalation
8 because volatile organic chemicals will basically be

9 So then we have the chemicals and the
10 person exposed to them under different pathways.
11 All of this information is integrated into a
12 mathematical model. And within that mathematical model,
13 we also look at how toxic is this chemical. The
14 result of Integration would be the risk number.

15 When we talk about the risk number,
16 we have two different end points. We would have the
17 cancer end point, and we also have the non-cancer-type
18 effect. And when we calculate the risk, we're going to
19 address both end points.

20 Now, one thing to consider is when we're putting
21 all of this information together, we are going to be very
22 conservative in our assumptions. And I'm going to go
23 through an example as to what I mean by "conservative"
24 in the next slide.

25 We are not going to at any time underestimate the risk.

1 We're always going to be erring in the overestimation of
2 it. That is, that way we are always protective of human
3 health. Therefore, the actual risk is always
4 going to be lower than the one that we are actually
5 estimating.

6 Now, this is just a quick overhead as to
7 showing that we've got several things that must occur in
8 order to quantify the risk.

9 That is, (a), we have to have chemical
10 contaminants, (b), we have to have a way to release the
11 chemicals from the media to an area where humans are
12 going to be exposed. If we have a residential receptor,
13 then -- that person is going to be exposed to that
14 groundwater via use of that groundwater as a drinking
15 water source.

16 We need to have a person that is exposed to
17 chemical contaminants. If you don't have a person
18 exposed to, then you don't -- you cannot quantify the risk.
19 And finally, you've got different exposure pathways for
20 these contaminants; that is, by eating it, by drinking it,
21 or by touching it. Now, we've said earlier that the risk
22 estimates are very conservative and overestimate
23 in the risk for protection of human health.

24 When we talk about residential exposure,
25 these are some of the assumptions that I want to present

1 to you that show you how conservative these estimates
2 are.

3 We are assuming that a resident is basically
4 at a site exposed to groundwater, in this instance, for
5 a period of 30 years. And that means this person never
6 moves. It's there for 30 years, from birth to 30
7 years.

8 Also, basically, 24 hours a day for 350
9 days a year. Again, that means that this person does
10 not leave the house except for 15 days over that year.
11 So that's a very conservative assumption because this
12 person does not work, does not leave the house, and that
13 is very, very conservative.

14 Again, following this conservative
15 scenario, as far as drinking water, two liters of water
16 a day are consumed. All of these values, all of these
17 assumptions, are established by EPA, and we basically
18 implement them in our risk assessment.

19 So when we talk about the resultant risk numbers,
20 keep in mind that these are numbers that are based on
21 conservative assumptions.

22 Now, we've quantified risks, but what do they
23 mean as far as are they acceptable? Are they unacceptable?

24 We've got established criteria by which to
25 compare how acceptable or unacceptable these risk numbers

1 are. For cancer risks, we've got a criteria
2 established by EPA, which means that if it's less than
3 one in a million, that is, one times 10 to the minus 6
4 1×10^{-6} for cancer risk, then the risks are considered
5 acceptable.

6 If they are within one in 10,000 to one in a
7 million or 10 to the minus 4 to 10 to the minus 6,
8 again, this is for the cancer risk, then it is within
9 the risk-management range, and they're in the generally
10 allowable risk range.

11 Now, what that means is that, at this point,
12 the stakeholders and the regulatory agencies, will get
13 together and will integrate with the results with other
14 factors.

15 For example, are the concentrations at the
16 site greater than drinking water standards?
17 All of these factors will be taken into consideration to
18 determine if remedial action has to be implemented at
19 the site.

20 If risks are greater than one in 10,000 or
21 greater than 10 to the minus 4, then that is considered
22 unacceptable. And at that point, cleanup is warranted.

23 Now, for the non-cancer risks,
24 there is a threshold of one. And if risks
25 are less than one, again, that is considered allowable.

1 If they're greater than one, then there is a potential
2 for adverse health effects to develop.

3 And at that point, then, again, considerations
4 as to what the contaminant levels are like with respect
5 to MCLs, in this instance, would be considered as
6 far as the cleanup.

7 Now, I'm going to
8 briefly show you what the risk results are
9 under baseline conditions, that is, prior to any
10 remedial action. These results are for an individual,
11 that would be, in this case, a resident exposed to the
12 groundwater at both Site 18 and Site 24.

13 Site 18 is the principal aquifer, and Site 24
14 is the shallow groundwater unit. And again, we've got
15 two different end points. We have the cancer risk, and
16 we have the non-cancer portion of it.

17 For the cancer risks, under residential
18 conditions, the principal aquifer results are within the
19 10 to the minus 6 and 10 to the minus 4 risk range. And
20 if you flip back to the previous slide, so they are in
21 this area right here. That means that they're generally
22 allowable. And at that point, you would integrate other
23 criteria into whether cleanup is required or not.

24 Now, for the shallow groundwater, the risks
25 are greater than 10 to the minus 4, and the 10 to the

1 minus 4 is the unacceptable risk range. Again, these
2 are residential risk results, which means that you've
3 got somebody exposed to the groundwater via drinking it,
4 dermal contact, while showering, for example, and then
5 through the inhalation portion of it while this
6 groundwater is being used as a potable water source.

7 Finally, the non-cancer health effects, since
8 we also have to address them. These results are greater
9 than one. So there is a likelihood of potential adverse
10 health effects for both the principal aquifer and the
11 shallow groundwater unit.

12 Now, that we have this information, then
13 the next step is what does it mean?
14 For human health risks that are in excess of 10 to the
15 minus 4, those are not acceptable, which means that they
16 warrant some sort of remedial action.

17 At the shallow groundwater unit, then,
18 since the risks are in excess of 10 to the minus 4,
19 again, these are residential risks, then a remedial action
20 will be implemented.

21 Now, at the principal aquifer, the risks are in the
22 10 to the minus 4 (10-4), 10 to the minus 6 (10-6) risk range.
23 So that is within the risk-management range.

24 However, the VOC concentrations exceed the
25 federal and state water quality standards, and then that

1 leads towards remedial action.

2 So at both the shallow groundwater unit and the
3 principal aquifer, you have remedial action based on the
4 risk and also based on the exceedence of the VOCs for the
5 MCLs.

6 MR. GOULD: Thank you very much, Doctor. Good.
7 Good information.

8 Now, next step in the program I mentioned
9 previously is the feasibility study. That will be --
10 that and an introduction into the preferred remedy will
11 be briefed to you by Mr. Andy Piszkin, the former lead
12 remedial project manager for El Toro, but prior to Content
13 Arnold.

14 He was involved for some time through all the
15 investigation stages for a number of years, so he has a
16 great deal of technical knowledge and background on it.
17 So I think he's probably perfectly suited to give this
18 particular portion of the brief.

19 One clarification I want to point out. I
20 mentioned the signators on the settlement agreement.
21 There was one more representative on behalf of the Navy.
22 Department of Justice had negotiated for the Navy, but
23 we actually had a Navy signator on it. So there were
24 four signators.

25 So Andy, if you would, please.

1 MR. PISZKIN: Good evening. My name is Andy
2 Piszkin. And like Dean says, I've been around quite a
3 while. I started as a remedial project manager in '91,
4 on El Toro. I feel like this is kind of homecoming night
5 for me.

6 I've been involved in a lot of the groundwater
7 studies as well as some of the negotiations for the
8 agreement that has been signed by the Department of Justice
9 and the water districts, as well as the Navy.

10 We use the EPA guidance on doing a remedial
11 investigation/feasibility study. This is what it is,
12 guidance, but it's got some real good stuff in it. And
13 that's where the objective of a feasibility study comes
14 in. It's different than what I have. You've seen
15 remedial investigation. That's "what's out there." A
16 risk assessment is "what does that mean?" and
17 "What does that matter?"

18 And if it matters, then some action has to be
19 taken, the feasibility study is, "what can you do about
20 it." And the preferred alternative that we're proposing
21 tonight for public comment here is what we think is the
22 best thing to be done because of the risk and because of
23 what we found.

24 So the feasibility study is trying to combine
25 a lot of the -- what's the objective of our remedial

1 action. RAOs Remedial Action Objectives is what I call them.
2 And first, you have to define the problem, what kind of response
3 actions you need, what kind of tools are out there in the
4 environment and industry that will help you solve those.

5 Do you have to get the groundwater out?

6 What do you do when you have it? How can you
7 treat it? Do you have to get it out? Can you treat it
8 down in the groundwater where it is 200 feet, 400 feet
9 below the ground surface?

10 How do you treat it? Do you heat it up? Do
11 you take it off to a landfill? What do you do with it?

12 So you look at all those possible
13 technologies, and you try to then piece them together in
14 some kind of a treatment train.

15 Okay. Well, maybe I'll pump it out first.
16 Then I have it, and I have to treat it somehow. And
17 I've got A, B, C, D, E way to treat it, and then I have
18 to do something -- then it has to go somewhere else.
19 You know, what do you do with it?

20 So you -- you look at all those technologies,
21 what are those process options, and you put them
22 together. You do some initial screening, which we have
23 done, and some things just don't fit for the scenario
24 that -- of what we have found and what we have to do
25 with it. So those get kind of screened out being

1 noneffective.

2 Then you conduct detailed analysis. And
3 under -- it was ironic. Under the -- the last one,
4 under the guidance, it says "Further define alternatives
5 as necessary."

6 Well, we spent a lot of time further defining
7 alternatives as necessary. Because one of the things
8 that has to happen, you can have the greatest
9 technology, but if it can't be implemented, it doesn't
10 go anywhere.

11 So one of the things and the only thing this
12 settlement agreement that has been signed by a bunch of
13 parties is that it makes the alternatives that are being
14 proposed as a joint project with the water districts as
15 implementable.

16 It will not be implemented unless the Record
17 of Decision selects Alternative 8A and 10B prime. If
18 that Record of Decision doesn't get to that point, that
19 agreement doesn't go any farther. It doesn't happen
20 even though it's all signed, it allowed us to be here
21 tonight to say we have a proposed plan that is actually
22 doable.

23 So the first thing is what's our objectives?
24 One thing that's not on this slide is prevent exposure
25 from nontreated water. That was actually our

1 third objective. We want to contain it.

2 Don't let it go any farther, or at least minimize
3 the migration of any contaminated groundwater above
4 drinking water standards.

5 The second one is to reduce, you know, the
6 concentrations to below drinking water standards. And
7 the third, like I say, it's not on there, but it's to
8 prevent anybody from coming into contact with something
9 that's concentrated above the drinking water standard.

10 And, therefore, like the risk triangle, you
11 need somebody to be exposed, you need a toxin or a
12 concentration, and you need a pathway. If you can block
13 the pathway, you block the risk.

14 On page 9 of the proposed plan, it gives
15 you -- it's actually table 2, it's a good list of some
16 of the alternatives that we considered early on like
17 hydraulic containment.

18 You can put wells in, extraction wells. You
19 can put in reinjection wells. You can put water into the
20 ground so the groundwater doesn't flow any farther. You
21 can install a slurry wall, but this technology was
22 screened out early because it has to be installed too deep.
23 In such a large area, it would just be just impractical
24 and not cost-effective. So that's one of the alternatives
25 that this just doesn't fit with what we have to work with

1 here.

2 You have some of the removals. You can --
3 well, you can, you know -- extraction from groundwater
4 wells. Vacuum-enhanced groundwater is kind of doable.
5 That is,-- put a vacuum on the extraction well.

6 You have some of the treatment that you can do
7 in place, and you have some of the treatment process
8 that you can do once you bring the groundwater up.

9 So this is what we had at our disposal, and we
10 went through some of these things, some of these
11 technologies in the feasibility study. And with the
12 scenario of how large and dilute the principal aquifer
13 plume is and the area and the concentration and the flow
14 of the shallow groundwater unit, we have a variety of
15 alternatives.

16 And we'll go to that next slide.

17 I must say I remember discussing a lot of the
18 discharge. What do you do with the water once it's
19 treated? Do you put it in the washes? Do you put it
20 in Agua Chinon or Bee Canyon Wash?

21 Do you just put it out in the middle of the
22 runway surface impoundment?

23 Do you reinject it? Do you use it for irrigation or
24 domestic use?

25 There's a lot of scenarios. There's probably

1 like, you know, 12 scenarios that we dreamed up of let's
2 really think outside of the box. What can we do with
3 the water after we treat it? And that was -- that was a
4 main issue on what's implementable.

5 So here we have -- I believe this is page 14
6 in the proposed plan, and it really goes through the
7 alternatives that kind of met the -- you know, passed
8 the ha-ha test, the ones that are kind of doable, and
9 they all go to kind of pump and treat.

10 Because of the environment, because there is
11 an Irvine Desalter Project that in the late 1980s, during
12 that decade it was on the books as a water supply project,
13 and I know Richard Bell and Steve Conklin both, or one of
14 them, will talk more about that after I sit down, but
15 looking through the alternatives, like alternative 8 --
16 or I'm sorry -- 2A, that is a Navy stand-alone.

17 We looked at the Navy doing their own large
18 groundwater pump-and-treat project without the Desalter,
19 without the local water districts. If that -- if Irvine
20 desalter project didn't happen, the Navy had to have
21 some alternatives that they could do on their own, and
22 that's what 2A is.

23 6A is a combination of using a joint project
24 with the local water districts. 7A -- A and B are
25 alternatives that incorporated monitored natural

1 attenuation and some of those results.

2 Well, let's go on to the next slide.

3 We took all those, and there are the nine
4 criteria of EPA. The first two are critical. They're
5 called threshold criteria. It's the protection of human
6 health and the environment, and it has to meet the
7 applicable laws. Those are the first two.

8 The next five, they're the balancing criteria.
9 That's the meat of how to -- it's the majority of
10 criteria to help select a proposed alternative.

11 The last two are modifying criteria. If there
12 is -- you know, we -- we want state acceptance. We want
13 public acceptance. And those actually come after this
14 meeting today and the close of the public comment period
15 where we take the response -- take the comments and in
16 the Record of Decision provide a responsiveness summary
17 to all the comments related to the proposed plan that
18 the Navy's putting out.

19 So next slide.

20 This is page 19 of the proposed plan, as I
21 term it, the meatball chart. And I'd have to look at
22 the other page, page 18. It's nice that they're right
23 together because page 18 goes through those nine
24 criteria very specifically. You know, it has italicized
25 font, which discusses what is looked at under that

1 criteria.

2 For instance, "Short-term effectiveness.
3 Assesses how well human health and the environment will
4 be protected from impacts due to construction
5 implementation of a remedy. Also considers time to
6 reach cleanup goals."

7 I must admit on the previous slides, two back,
8 the alternative that we think is the best has one of the
9 longest time frames when it comes to cleaning up the
10 principal aquifer. It has 95-plus years. That's one
11 reason we have this little plus here is it's a little
12 bit of a misnomer. You have to look at the alternative
13 that we're proposing as a combination of alternative 8A
14 as well as 10B prime.

15 If you look at 10B, and prime is just a little
16 bit of a reduction in the flow, and we look at the
17 modeling -- the groundwater modeling, it didn't have a
18 significant impact to the results.

19 10B cleans up the shallow groundwater in
20 roughly 20 years. That's a big thing because that's the
21 source of that large dilute regional plume. That's a
22 big priority for the Navy to get rid of the source as
23 soon as possible.

24 And so it's the combination of both 8A and 10B
25 prime is what we're acting on for overall short-term

1 analysis. And like our little asterisks or our little
2 plus sign says, there's a lot of optimization that's
3 going to happen when we get into the design.

4 And the groundwater modeling is -- really, the
5 main focus is comparative analysis. How does it compare
6 to the other alternatives?

7 There is lots of opportunities to optimize
8 well placement. And when you're running this thing for
9 many, many years, as it will be used as an irrigation
10 supply source, it's not going away, and it will be very
11 beneficial.

12 So we look at this meatball chart. We don't
13 have weighted averages. We don't have numbers. But you
14 can see where it's a full closed-in circle, a good performance.

15 (Note to Readers: Recommend referring to the
16 Comparative Analysis of Remedial Alternatives in the
17 Proposed Plan or the public meeting presentation handout.)

18 You can see the preferred alternative has
19 three -- actually, we have Navy state acceptance in
20 there, which is nice -- nice as a full circle, best
21 performance.

22 The big one, I have to say, is
23 implementability. You see these other three
24 alternatives. They are joint Navy/water district
25 projects. But they just -- they did not make the cut,

1 and they did not meet the settlement agreement.

2 So the settlement agreement on the 8A, 10B
3 prime is key to having something doable. So that's one
4 of the main reasons we prefer it.

5 Cost-effective, it's got long-term
6 effectiveness. It's great to be hooked up with a CERCLA
7 remedy with a long-term local water district because
8 they're here. They know how to run these things. You
9 know, it's their business and they're experts and it's
10 great to team up with them.

11 So here's some of the kudos or some of the
12 things that are the real benefit of our preferred
13 proposed remedy.

14 Optimal solution. Given all the factors, all
15 the technical factors, all the nuances that we've had
16 with the local water districts, with the regulatory
17 agencies over quite a many number years, we think it's
18 the best -- it really is the best solution.

19 It does resolve or satisfy our CERCLA
20 requirements under the Navy and under our Federal
21 Facilities Agreement. And the cleanup team, the BRAC
22 cleanup team, they support it. They've been very
23 diligent, very patient with the Navy and the local water
24 districts on getting this settlement agreement that
25 allows our preferred alternative to be implementable.

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So next.

In the proposed plan, you do have some schematics. They all start looking the same after a while. But truly, this is different. And I do -- like Dean said, I would definitely support getting the handout version of the map that we see over here.

It says "Irvine Desalter Project," where in the kind of red -- I'm not sure if that's mauve or I don't know what color -- our proposed alternative is.

The light blue line is not what the Navy's proposing. That is the water district's drinking water, potable water system, that's outside of our VOC-contaminated plume.

So with that, I'm going to give it back to Dean.

MR. GOULD: Thank you, Andy. Terrific.

Well, the evening certainly wouldn't be balanced unless we had presentations by the water

1
2
3 districts that we're partnered with. And in just a
4 moment, we'll have Mr. Steve Conklin from the Orange
5 County Water District as well as Mr. Richard Bell from
6 the Irvine Ranch Water District come up and give their
7 perspective on the remedies being proposed and the
8 historical perspective of what has transpired to date
9 and offer a little more insight as far as the nuances to
10 the implementation of the remedy we've been talking
11 about so far.

12 If you would, Steve.

13 MR. CONKLIN: Thank you, Dean.

14 And good evening. My name is Steve Conklin
15 with the Orange County Water District, and I'm very
16 pleased to be here.

17 Andy said he started working on the project in
18 1991. I actually started working on it in 1989 when I
19 started with the water district over 12 years ago.

20 Roy Herndon, our district hydrogeologist with
21 the district, you started before I did.

22 MR. HERNDON: 1988.

23 MR. CONKLIN: 1988. So we have a long history
24 with this project.

25 So Roy, myself, and the water district board

1 of directors are very pleased we've reached this point.
2 We're very supportive of the project and very anxious to
3 move forward with this very implementable and very
4 technologically sound project that will meet the needs
5 of ourselves, our partners, and the various regulatory
6 agencies.

7 The water district is the groundwater
8 guardian. We were created in 1933 by special action of
9 the state legislature to protect and preserve the Orange
10 County groundwater basin.

11 It's a very valuable resource. It's the water
12 that's under our feet right here. It's the water that
13 provides the needs of over 2 million people, that
14 stretches from Los Alamitos all the way down to Irvine,
15 from Anaheim and Fullerton.

16 That whole area there is -- about 70 percent
17 of the water that those 2 million people use comes from
18 the ground. This water has to be protected. It's an
19 invaluable resource, and this project does protect this
20 very important resource for us.

21 The water district is an independent
22 monitoring authority. Our purpose is the groundwater
23 basin. And with that, whatever -- whatever it takes,
24 that's our purpose -- and our existence is to
25 protect the groundwater basin.

1 The project, by treating the contaminants here
2 at the site, it prevents the contaminants from moving
3 farther downstream and potentially contaminating other
4 groundwater. This water has its natural movement,
5 more or less, from east to the west. It would be moving
6 from the Irvine area actually on through Santa Ana and
7 some of these other areas. And these areas are
8 underlain by groundwater. If this contaminant continued to
9 move it would contaminate that water as well.

10 So it's very important to pull the water out
11 here, treat it, and then be able to use it.

12 This project is very valuable in that it's
13 taking water, which is otherwise not usable, treating
14 it, and making it into a very valuable resource. It's
15 making us more water independent and not dependent so
16 much on Metropolitan Water District and from water from
17 out of the area. So it's making use of water right here
18 and making the water available for us and for our
19 children and for our children's children.

20 So with that, I'd like to turn it over to
21 Richard Bell, my partner in the project, from Irvine
22 Ranch Water District.

23 MR. BELL: Thank you, Steve.

24 It's a pleasure to be here tonight. I concur
25 with the comments Steve made.

1 Both water districts' boards of directors back
2 in June, after many years of effort, support the project.
3 are very, Our districts are very enthusiastically behind
4 the project, and we have been working very diligently on
5 this project for many years.

6 I started with the district -- since we're
7 giving a little history of each of our involvement with
8 this project, I started here four years ago and got very
9 involved with the project at that time. About half
10 my time is devoted in one way or another to this
11 project in negotiation and project
12 development.

13 A little side note, 20 years ago,
14 I was the regional manager for a Regional Water Quality
15 Management Program for Southern California back in the
16 late '70s when VOCs were first discovered in
17 groundwater. At that time, we knew
18 nothing about VOCs in the Irvine Area since this area was
19 agricultural.

20 (Interruption by reporter.)

21 MR. BELL:

22
23 One of the things that I'd like to talk about
24 is our perspective on the project and how we got here.
25

1 The first slide is titled "Two Projects
2 in One." That's an important point to understand. The
3 project is both a nonpotable system, which is a CERCLA
4 remedy that Andy addressed, and we also have a potable
5 system.

6 And I'll show you them in a minute on the maps.

7 The nonpotable system basically takes water
8 from the VOC Contamination plume, which is extracted, treated,
9 and then would be used in a recycled nondrinking-water system
10 primarily for landscape irrigation, and other nonpotable
11 uses.

12 It is part of the CERCLA remedy.

13 The potable system are wells which are located
14 safely beyond the plume, outside the plume, and outside
15 upgradient of the influence of pumping from the plume.
16 This water will be treated to remove salts and
17 nitrates, for use in our drinking water system.

18 And we need to note that the potable project,
19 is separate and
20 not part of the CERCLA remedy.

21 Next slide.

22 It was very important early on in the process to
23 get our public involved. A few years ago, we
24 actually conducted some very extensive focus groups with
25 our customers and community leaders.

1 And what we found from that process was
2 that our community and the leaders in the community
3 very much supported the cleanup of the project, but
4 they preferred that the treated water from the plume
5 be used for landscape irrigation. And that's how the
6 project was basically configured. We developed the
7 project into two components at that time.

8 One thing we do like to make clear is
9 that the groundwater cleanup project and the
10 groundwater supply project do not affect the ultimate
11 use of MCAS El Toro. It really has no bearing on that
12 decision at all.

13 The plume that Andy showed in his picture
14 basically is the same as we show here in color.
15 This is the source area site 24 or the origin of
16 the VOCs. They spread basically in the shallow unit and
17 then dropped down into the principal, deeper aquifers
18 and have been detected out as far as Culver and Drive.

19 But we have designed a system that has two
20 wells here in the major -- or the hottest spot of the
21 plume for extraction.

22 We also maintain a well here at the toe of the
23 plume to help provide containment of the plume so it doesn't
24 get beyond this point. We want to protect this area
25 downgradient of the plume. That's what Steve talked to earlier.

1 The water would be pumped from these wells,
2 conveye by a pipeline to a central treatment plant here where
3 the water will be cleaned and then from that point will
4 be put into our nonpotable irrigation system.

5 We also have, which is separate from the --
6 the CERCLA remedy, is our potable system, which would be
7 outside the plume, would be some wells located along the
8 Southside of the Interstate 5 Freeway.

9 That water, as I mentioned earlier in this
10 Part of the basin has higher salts from past agricultural
11 activities and natural sources.

12 This water will be pumped from these wells to
13 the same treatment plant location, but into a separate
14 facility, where it will be desalted and disinfected
15 it and pumped it in the potable system.
16 Not part of CERCLA remedy.

17 The treatment system that will be used for the
18 nonpotable project will include primarily two types of
19 treatment processes. One is reverse osmosis, which will
20 desalt the water to levels where we can use it for irrigation
21 supply, and the second would be a packed aeration tower
22 for air stripping to remove the volatile organic
23 contaminants.

24 Those -- processes are both the best
25 available technology. They're proven technology and

1 been used in many different locations, and they're very
2 reliable processes.

3 The air that will be stripped out, which will
4 contain the VOCs will be further treated through a granular
5 activated carbon unit, to absorb all the VOCs in the air.
6 The treated air -- will be free of contaminants so there will
7 be zero discharges from this facility to the environment.

8 And after this water is treated, it will be
9 disinfected and put into our system.

10 This is the same chart that's on the
11 proposed plan on page 16, I believe, that Andy
12 showed.

13 As basically he said, the water from the
14 shallow groundwater unit on base at site 24, contains
15 the high concentrations of contaminants.

16 The shallow groundwater unit will be pumped by
17 the Navy and conveyed to a pipeline, where we'll come over
18 in a pipeline. We'll take custody of that water. That water
19 will be treated by reverse osmosis and also go through
20 the air stripper, the off-gases will go through carbon
21 treatment, and the purified water will be disinfected and
22 put it into our irrigation system.

23 The deeper, is off base, water which has
24 lower concentrations of contaminants, will be partially
25 desalted And all that water will also be air stripped,

1 and the vapor treated, and then the water will be
2 disinfected and put into our system.

3 So that basically gives you a picture of how
4 the flow streams are treated in the process.

5 One of the things that's very important is to explain
6 how we ensure both public health and environment
7 are protected And one of the key points is the extraction
8 wells in the principal aquifer prevent the plume from
9 being pulled towards the drinking water
10 wells.

11 We went through excessive groundwater modeling
12 studies to prove that point and to ensure ourselves
13 that that would be the case.

14 And as I mentioned earlier, all the water,
15 100 percent air stripped will be.
16 Then all the highly contaminated water will also
17 receive reverse osmosis.

18 Again, there will be no air emissions from the
19 project, and the wastewater brines from the treatment stages
20 or steps will be disposed to a brine-line system. We'll
21 convert a pipeline into a brine line that goes to the
22 regional wastewater collection system so it doesn't
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1 go into our reclamation system. Here, we reclaim our
2 water. It is important we need to keep excess salts out of
3 our reclaimed water sources and keep the water as pure as we can.

4 So the brine goes through a regional system.
5 Ensuring protection for the drinking water project is
6 done through several methods.

7 One, we will install an enhanced groundwater
8 monitoring program and network in the project area so
9 we can know in advance what's happening. Groundwater will be
10 monitored and tested throughout the project life and
11 in the plant on a continuous basis so we know exactly
12 how the plant is operating at all times.

13 As I mentioned, reverse osmosis is
14 a proven technology. It's used to purify bottled water.
15 It's widely known, and it's a safe process.

16 And another thing we make clear is that we
17 actually remove the salts and minerals for the drinking
18 water side to better than what's required for drinking
19 water standards. That's our goal, and that's what we plan
20 to do.

21 The last slide.

22 In summary, the project benefits, from the perspective
23 of a water supplier, can be summarized by four main points.
24 One, it cleans and protects the groundwater basin that's been
25 damaged over the years and is currently unusable for municipal uses.

1 Second, it basically provides a new,
2 locally controlled drought-resistant
3 high-quality groundwater supply for both our potable and
4 our nonpotable systems. So we're getting the water
5 supply that we need, and it develops unused local supplies
6 and provides drought-protection benefits. By having our supply
7 here, it reduces our reliance on imported water.

8 The third point is there will be no impact on
9 our -- on our ratepayers. Funding by the Navy the
10 nonpotable system and from the Metropolitan Water District on
11 the potable system will make the project feasible side.
12 This will keep our costs in line or less than what we
13 would pay for imported water.

14 And fourth, the project is environmentally
15 beneficial, as I mentioned earlier.

16 And that's basically all I have on -- from the
17 Irvine Ranch Water District water perspective on the
18 project.

19 MR. GOULD: Thank you very much, Steve and
20 Richard. I appreciate it.

21 Before I provide closing remarks on this
22 particular portion, I want to afford the regulatory
23 representatives here tonight the opportunity to give
24 their agency's perspective on the preferred alternative
25 and the proposed plans that are being presented to you

1 tonight.

2 So I'll start off asking Ms. Nicole Moutoux,
3 representing U.S. EPA, who is also the lead -- lead
4 regulatory agency of what is known as the BRAC Cleanup
5 Team, the BCT for El Toro, if you would like to make
6 some comments.

7 MS. MOUTOUX: Yes.

8 My name is Nicole Moutoux. I work for the
9 Environmental Protection Agency.

10 Basically, EPA is in support of the Navy's
11 proposal for cleaning up the groundwater at sites 18 and
12 24 because it will be, once in place, protective of
13 human health in the environment, as well as restore the
14 beneficial uses of the groundwater.

15 And I've been on the team not as long as
16 everyone else, but we believe that it's time for this
17 cleanup to happen.

18 MR. GOULD: Thank you, Nicole.

19 Ms. Triss Chesney with DTSC.

20 MS. CHESNEY: My name is Triss Chesney, and I'm
21 with the California Environmental Protection Agency,
22 Department of Toxic Substances Control, also known at
23 DTSC.

24 DTSC concurs with the proposed remedy because
25 it addresses groundwater contamination by reducing the

1 VOC concentrations to meet water quality standards,
2 controlling VOC migration, and preventing domestic use
3 of contaminated groundwater until cleanup goals are
4 achieved.

5 The proposed remedy is protective of human
6 health and the environment and meets state regulatory
7 requirements.

8 MR. GOULD: And the third regulatory agency
9 representative would be Ms. Patricia Hannon of the
10 Regional Water Quality Control Board.

11 MS. HANNON: My name is Patricia Hannon. I'm also
12 with California EPA, Regional Water Quality Control
13 Board, Santa Ana region. And we concur with the
14 proposed remedy.

15 We've been waiting a long time for this to
16 happen, and we're very thrilled that it's going to
17 work. It hopefully will work and restore beneficial
18 uses to this.

19 MR. GOULD: Thank you.

20 There's a couple of closing comments
21 before we open it up for comments.
22 Next step, public comment
23 period.

24 Okay. Well, certainly we're kicking that off
25 here tonight. But the formal comment period, if you're

1 looking at page 2 in the proposed plan that's available,
2 you see that it talks about the public meeting being
3 tonight, November 13th. But there is a 30-day public
4 comment period ranging November 7th to December 7th.
5 That's an ominous day. During that period, we are
6 gladly receiving public comments on this preferred
7 alternative.

8 So I know there's a lot of information being
9 put out tonight. Maybe you need to go home and review
10 some of the documents or come up with some questions,
11 develop some questions for us, or perhaps share what
12 you've learned tonight with some people that you know,
13 coworkers, people in the community, anybody that you
14 would like to get their input on and bounce it off
15 them. By all means, you can then submit the comments to
16 me. I would be more than happy to receive those
17 comments.

18 As I mentioned, anybody who responds to us
19 with comments we'll gladly respond in writing formally
20 giving you a detailed response to the questions that you
21 may have. So I do encourage you to please take
22 advantage of that. And anyone you know that would be
23 interested in providing comment also, solicit them to do
24 the same.

25 Once the comment period is ended, and assuming

1 that the proposed alternative that we've talked to you
2 about this evening is, in fact, the preferred
3 alternative that is ultimately selected, we'll go ahead
4 and put that into a Record of Decision and publish
5 that.

6 And once that is signed after review of the
7 regulatory agencies and our partners, we'll go ahead and
8 finalize that document, and then it becomes final. Then
9 this remedy is the one that we'll go ahead and move
10 forward with, and the remedial design will then take
11 place.

12 This is a little bit of a unique instance in
13 that remedial design will actually be produced by the
14 water districts. And then once a design is complete,
15 we'll move forward with the actual action, meaning the
16 treatment of the contaminated groundwater.

17 So that is essentially it as far as the formal
18 presentation goes.

19 So as I mentioned, I think you're going to get
20 the idea that we want comments. Here's at least the
21 second opportunity, aside from the informal session.
22 Here's a second part for you to go ahead right now, go
23 ahead and speak up, and we do have a microphone
24 available for anybody who would like to provide
25 comments.

1 Now, there's a couple different ways we can do
2 this. You can go ahead and give them right now, if
3 that's your preference, or you can come up afterwards
4 and give them directly to the court reporter here. Or,
5 as I mentioned, you can submit them in writing tonight,
6 or you can just go home and think about it and submit
7 them in writing. That way, there's a lot of different
8 options.

9 We'll open it now. We can't provide responses
10 right now unless it's an administrative issue. But if
11 it's technical or things of that nature, we'll respond
12 in writing to those.

13 So is there anybody who would like to provide
14 a comment right now in this particular format?

15 MR. MILLER: I had a couple of questions.

16 MR. GOULD: Please state your name and spell it
17 out so our court reporter can get that, please.

18 MR. MILLER: Okay. My name is Mark Miller, and I
19 live in Mission Viejo. I got the notice in the paper
20 and came to the meeting tonight.

21 MR. GOULD: Terrific.

22 MR. MILLER: And I was just looking at the
23 proposed plan groundwater cleanup folder. And I notice
24 on the bottom of page 16 where it says "Preferred Remedy
25 Conceptual Design Alternatives 8A and 10B," on the

1 bottom, it says "During low periods" -- or "During
2 periods of low recycled water demand, only shallow
3 groundwater will be treated and either injected into an
4 IDP injection well or stored in the IDP reservoir."

5 And I was wondering if the greatest
6 contamination is in the -- the deep aquifers, why they
7 wouldn't take the more contaminated water and treat it
8 instead of the water out of the shallow well.

9 MR. GOULD: Okay. Thank you.

10 MR. MILLER: And one other question I had --

11 MR. GOULD: Please.

12 MR. MILLER: -- the plume is mapped out. And
13 they -- they state there will be three deep extraction
14 wells and then one shallow groundwater unit on-station,
15 I guess, on the Marine base.

16 And I was curious with the scrubber that is
17 being designed to be in place, will there be any design
18 parameter if the plume should expand where other wells
19 could be added on and the scrubber would work to a
20 larger capacity or will be designed if -- on that
21 contingency?

22 MR. GOULD: Very good. Thank you.

23 MR. MILLER: Thank you.

24 MR. GOULD: All right. Anyone else?

25 MR. STORIE: My name is Blake Storie. I'm a

1 resident of Laguna Niguel, and I'm sure my wife is as
2 well in favor of any type of cleanup effort.

3 Just looking at table 3 on page 14 -- you have
4 to understand we're very new to this this evening -- the
5 estimated remedial time in shallow groundwater is the
6 quickest of the options you have there, which is good
7 news, I would think.

8 But the reverse on the estimated remediation
9 time of the principal aquifer, much -- is the longest of
10 all the options. I'm just curious as to why that would
11 be, why you would select that.

12 MR. GOULD: That's a fair question. Thank you.

13 MRS. BOOT-STORIE: I had a couple questions.

14 My name is Carol Boot-Storie. I'm a resident.
15 I want to make a statement.

16 MR. GOULD: If you could just spell your last
17 name, please.

18 MRS. BOOT-STORIE: B-o-o-t, dash, S-t-o-r-i-e.

19 First of all, I just want to say thank you
20 all for being here. Sometimes you don't realize how
21 much people appreciate your efforts given the turnout
22 here. But thank you all for all your hard work, many,
23 many years of hard work put together here.

24 A couple of questions. On the 93 years, I
25 know that there was a mention of greater than 4800 parts

1 per billion at one point. But in some of these cases,
2 you mentioned greater than 500 parts per billion.

3 Is there a time estimated that would say in 20
4 years, you would have the source down to 250 parts per
5 billion or down to 10 parts per billion? Is there a
6 time line, and how does that time line play out so that
7 90 -- 90 percent is salt in 20 years, and the remainder
8 goes down from there? So that question.

9 And is there a location where the cost
10 associated with each of these alternatives is
11 presented? And so we can sort of look at that and see
12 if that's -- okay. That's probably in there already.

13 And then just a general question. Is there
14 something that precipitated -- I know five years is a
15 long time for the negotiations.

16 Is there something that precipitated a final
17 date for that, whether it be political or whether it be
18 a regulatory agency that made that determination? Could
19 that have happened sooner? I know there are some smiles
20 going on there. Is there something that said, "Here's
21 the date, and here's why there's the date"? I'm
22 interested in knowing that.

23 And I think that would probably do it for the
24 moment. Thank you.

25 MR. GOULD: Great. Thanks.

1 Any others?

2 Okay. Well, certainly not the last
3 opportunity to provide public comments. As I mentioned,
4 please do speak to those perhaps in your neighborhood,
5 those you work with, and encourage them to provide
6 comments as well.

7 If that is it, then we'll go ahead and close
8 out this portion. We will still stick around for a
9 little bit just in case something else comes up in this
10 meeting, you have some other informal questions, or you
11 care to fill out one of the written forms here or you
12 just want to pick up some additional information.

13 But short of doing all that, on behalf of all
14 the speakers this evening, I definitely want to thank
15 those community members that did come here this evening,
16 especially the new faces.

17 It really is refreshing to see the new
18 interested folks coming out and spending their evening
19 here. Wish we would have had more. But short of that,
20 at least you folks chose to be involved. And we really
21 do appreciate that likewise.

22 So thank you very much for that. And let's
23 go ahead and close that out. Thank you.

24 (Whereupon, the presentation/question session
25 was concluded at 8:27 p.m.)

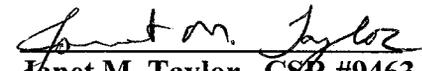
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REPORTER'S CERTIFICATE

**THE UNDERSIGNED SHORTHAND REPORTER
DOES HEREBY DECLARE:
THAT THE FOREGOING WAS TAKEN BEFORE ME AT THE
TIME AND PLACE THEREIN SET FORTH AND WAS
RECORDED STENOGRAPHICALLY BY ME AND WAS
THEREAFTER TRANSCRIBED.**

IN WITNESS WHEREOF, I HAVE SUBSCRIBED MY NAME

THIS 31st DAY OF December, 2001.


Janet M. Taylor, CSR #9463

11/13/01 MARINE CORPS AIR STATION EL TORO

HAHN & BOWERSOCK

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1 MARINE CORPS AIR STATION EL TORO
 2
 3
 4 PROPOSED PLAN - PUBLIC MEETING -)
 5 GROUNDWATER CLEANUP FOR)
 6 OPERABLE UNITS 1 AND 2A AT)
 7 MARINE CORPS AIR STATION EL TORO)
 8)
 9 Date and Time: Tuesday, November 13, 2001
 6:00 p.m. - 9:00 p.m.
 10
 11 Presentation/Question Session: 7:00 p.m.
 12
 13 Held at: Irvine Ranch Water District
 14 15600 Sand Canyon
 15 Irvine, California
 16
 17 (Pages 1 through 61)
 18
 19
 20
 21
 22
 23
 24
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1 PRESENTATIONS WERE MADE BY THE FOLLOWING SPEAKERS:
 2
 3 MR. DEAN GOULD
 4 BRAC Environmental Coordinator, MCAS El Toro
 5 Base Realignment and Closure
 6 Southwest Division, Naval Facilities Engineering Command
 7 MS. CONTENT ARNOLD
 8 Remedial Project Manager
 9 Southwest Division, Naval Facilities Engineering Command
 10 DR. ANDREA TEMESHY
 11 Risk Assessor
 12 Bechtel National
 13 MR. ANDY PISZKIN
 14 Former Lead Remedial Project Manager
 15 Southwest Division, Naval Facilities Engineering Command
 16 MR. STEVE CONKLIN
 17 Associate General Manager
 18 Orange County Water District
 19 MR. RICHARD BELL
 20 Engineer
 21 Irvine Ranch Water District
 22 MS. NICOLE MOUTOUX
 23 Project Manager
 24 U.S. EPA Region IX
 25 MS. TRISS CHESNEY
 Project Manager
 Cal-EPA, Department of Toxic
 Substances Control
 MS. PATRICIA HANNON
 Project Manager
 Cal-EPA, Regional Water Quality
 Control Board

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 19 Mr. Mark Miller ----- 55
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Page 4

1 IRVINE, CALIFORNIA; TUESDAY, NOVEMBER 13, 2001
 2 7:02 p.m.
 3
 4 MR. GOULD: Good evening, and thank you all for
 5 coming. My name is Dean Gould. I am the BRAC
 6 Environmental Coordinator for Marine Corps Air Station
 7 El Toro.
 8 Tonight we have the public meeting for the
 9 proposed plan for the groundwater cleanup for sites
 10 known as operable unit 1, which would be site
 11 18, which is the off-station groundwater
 12 contamination, and operable unit 2A, site 24, somewhat
 13 informally known as the, quote, unquote, source area for
 14 that contamination.
 15 I do sincerely thank you for being here this
 16 evening. I know there are a lot of competing interests.
 17 While we did hope the attendance would have been a
 18 little higher than what we have, I do see some faces I'm
 19 not accustomed to seeing in what we call restoration
 20 advisory board meetings, which is a meeting that we have
 21 every other month where we give an update on the
 22 environmental status of the base.
 23 So I am encouraged to see the new faces, so
 24 thank you especially to you folks for coming.
 25 Maybe one reason why folks did not come out in

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1 greater numbers tonight is because due to the ad that
 2 ran in the paper. If you were to read it top to bottom,
 3 it pretty much says it all. So maybe we don't need to
 4 go on now.
 5 It really is quite comprehensive. And in
 6 addition to that, with the information that's set up at
 7 the tables here and what we're going to give in the more
 8 formal presentation, I think you'll have literally as
 9 much information as you care to have on exactly what
 10 we're doing, what we're proposing.
 11 And we want to hear back from you too. This
 12 is not meant to be strictly a one-way type of forum
 13 here.
 14 Let me go ahead and go over what the format
 15 for tonight is. Believe it or not, we're actually
 16 one-third of the way through now that we're just getting
 17 into the more open-speaking portion.
 18 The way this public meeting was set up and the
 19 format that we're still working with, but I think is
 20 probably the best for all concerned, at least as
 21 appealing to the widest spectrum of people, would be to
 22 have what we call a poster-board session where we have
 23 the various stations set up, and we have respective
 24 experts, if you will, for each of those stations.
 25 We have regulatory agency representatives. We

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1 have people from the Navy staff. We have, in this
 2 instance, water district representatives, community
 3 relation specialists. Just about anybody that you would
 4 need to go, to to get an answer to whatever you might
 5 have a question on with regards to these particular
 6 situation at El Toro are here tonight.
 7 And so for that first hour, it was more of an
 8 informal question-and-answer period, going through the
 9 various phases of the program up to where we are
 10 tonight, which is the proposed plan proposal, if you
 11 will, to the community.
 12 And this is what we're in right now which is called
 13 the public comment period where for 30 days, we sent out
 14 this proposed plan, and it is open for public comment.
 15 And this meeting is meant to both solicit interest as
 16 well as answer questions, get community feedback on the
 17 alternative that we, the Navy, in concert with the water
 18 districts, in this instance, are proposing.
 19 So that was the first part of the meeting the informal
 20 poster-board session.
 21 Now we're going to go into a little bit more
 22 of a prepared presentation, if you will. And I would
 23 ask if you please hold off on comments until we're
 24 completed with the presentation.
 25 We're going to have a variety of speakers this

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1 evening going through all the different phases that are
 2 on display here tonight. And then at the end, there
 3 will be the opportunity for the public to provide formal
 4 comments.
 5 We have the good fortune of a formal court
 6 reporter here. As you can see, very detailed notes are
 7 being taken here this evening, and any comments that are
 8 provided or questions that are provided will be
 9 responded to. It is our job to respond in writing to
 10 them, so we want to make sure that we obtain your names,
 11 and we'll make sure that you get those responses in
 12 writing to any comments that are provided to us this
 13 evening.
 14 And then the third portion would be after the
 15 formal presentation, if you will, if anybody would then
 16 like to still come forward and maybe privately go ahead
 17 and offer input to the court reporter, it's certainly
 18 your opportunity.
 19 So you can either provide comments openly at
 20 the end of the presentations, or afterwards, once the
 21 presentation portion is concluded, feel free, by all
 22 means, to go ahead and come up and provide them
 23 to the court reporter in that manner.
 24 We also have comment cards, if that's your
 25 preference. You can go ahead and just fill them out in

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1 that manner. No shortage of opportunity to provide
 2 input to us this evening.
 3 So we'll go ahead if - I think we covered it
 4 all, to go ahead and kick it off.
 5 The purpose, I think we touched on that. We
 6 want to present to you, the public, in a formal sense,
 7 what the proposed plan is for these particular sites in
 8 our overall CERCLA program.
 9 Before we go too much farther, for those that
 10 would - I think just about anybody would benefit from
 11 it, but for those - especially the new members here
 12 tonight, I would suggest three documents that you
 13 should definitely have.
 14 Hopefully everybody has a copy of the proposed
 15 plan itself. That would be this document here. It's
 16 very good because it really does say it all. In
 17 addition, it has a glossary of all of the terms in the
 18 back. That's one key document you should have.
 19 Another would be an outline, really a copy of
 20 all the slides we're going to be giving this evening. I
 21 think we have those on a table. If anybody needs that,
 22 we can take a brief recess, and you can grab one of
 23 those to follow along and maybe take notes as we go
 24 through the presentation.
 25 And a third would be I see a color handout of

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1 the actual groundwater plume, over there. That would be
 2 nice just to take with you later on for reference
 3 purposes.
 4 So definitely, if nothing else, I suggest that
 5 you take those three documents. But in addition to
 6 that, there is a whole table full of documents out there
 7 out front, plus at the various stations here. So
 8 please, by all means, help yourself. Plenty of
 9 information to go around.
 10 Specifically, as we talked about a little bit,
 11 we're going to propose to you the remedial action for
 12 the volatile organic compounds that have found their way
 13 into the regional aquifer off-station at MCAS El Toro
 14 into the regional groundwater, as it mentions there.
 15 We want community input. This is not just
 16 because it's a mandated requirement. We truly come up
 17 with a better product by getting community input.
 18 That's what we want and need this evening.
 19 And then at the bottom there, opportunity for
 20 the community to learn about, and you can see the
 21 various bullet points. The contamination itself, how it
 22 got there, how it's going to be cleaned up, how long
 23 it's going to take, all those types of things.
 24 Just to kind of summarize, tonight really is
 25 to focus on the CERCLA remedy for these two particular

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1 sites. But we can't really go too much further without
 2 at least acknowledging that how we got here was by way
 3 of a settlement agreement that was just recently signed
 4 by the Department of Justice on behalf of the Navy, in
 5 addition to signatures by the local water districts, in
 6 this instance, Orange County Water District and Irvine
 7 Ranch Water District.
 8 And certain people in the audience this
 9 evening may have a little bit bigger smiles on their
 10 face than others because that has been a very, very long
 11 time coming, and a great deal of effort has been put
 12 into it. And I'll give a little time line here in a
 13 minute to show you a portion of how long it's taken.
 14 So we're very, very excited about that. It's
 15 a significant milestone in the program, and especially
 16 for the ultimate cleanup of the base and the affected
 17 off-station groundwater.
 18 The settlement agreement that I mentioned is a
 19 very, very complex agreement, and it did take quite a
 20 bit of time to ultimately reach agreement on it.
 21 And "agreement" really is the key word. It
 22 was agreed upon by the local water districts and the
 23 Department of Justice on behalf of the Navy, as I
 24 mentioned, to identify what we feel is the implementable
 25 remedy for this particular situation that we have, being

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1 the contaminated groundwater.
 2 So it's something that we have over years and
 3 extensive effort come to agreement on now, and we feel
 4 it's a very good product for the community, as well as
 5 for the agencies involved. So let's go ahead and get
 6 into the time line a little bit.
 7 Okay. The first block there, the Federal
 8 Facilities Agreement was signed, it mentions, in
 9 February of 1990. Or I'm sorry. It was placed on the
 10 National Priorities list in February 1990.
 11 The Federal Facilities Agreement is something
 12 I have in my hand. And what this means is this
 13 off-station groundwater was identified, and it was of a
 14 significant enough extent that the base was placed on
 15 something called a National Priorities list.
 16 And once that is done, in this instance, the
 17 Navy was obligated to enter into something called a Federal
 18 Facilities Agreement, which was signed by a
 19 representative of the Navy, as well as what are now the
 20 Regional Water Quality Control Board, represented by
 21 Patricia Hannon this evening, Department of Toxic
 22 Substances Control with Triss Chesney here this evening,
 23 and U.S. EPA with Nicole Moutoux here this evening.
 24 So those are the four parties that signed this
 25 agreement, and it's a legally binding document that says

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1 the Navy is committed in a very structured sense to
 2 obtain a cleanup or complete follow-through through the
 3 CERCLA process of those sites that are identified in
 4 need of formal remediation.
 5 And there's various schedules that needed to be
 6 adhered to with direct oversight by the three agencies I
 7 just mentioned. So for the first step, we're placed on
 8 the list, and then we enter into an agreement.
 9 Okay. Now, once the agreement's been reached
 10 and we have a schedule to adhere to, the first step of
 11 that schedule would be the RI phase of remedial
 12 investigation. And you can see, looking at your
 13 handouts, what happens during that phase.
 14 As the name implies, it's an investigation.
 15 We're trying to identify how much, where, when, how,
 16 those types of things. Very detailed investigation as
 17 to the source and the extent. And that was completed
 18 between the two different sites right around the
 19 1996-1997 time frame.
 20 The next step would be the feasibility study.
 21 And from the feasibility study stage, now we're looking
 22 at ways to remedy those problems that were identified in
 23 the RI phase. So we're looking at alternatives, and
 24 we're looking for the preferred alternative, which is
 25 what we're here presenting you tonight. And that two -

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1 those – those alternatives were published in the
 2 feasibility study also right around the '96-'97 time
 3 frame.
 4 And then the publishing of proposed plan and
 5 the holding of the public comment period 2001. What
 6 happened? That's five years. What happened between then?
 7 Well, what happened was very lengthy
 8 discussion and negotiation between the parties that I've
 9 mentioned just a little bit ago. Very complex, both
 10 technically, physically, all those types of things, but
 11 we have now reached agreement.
 12 So it took a little bit longer than what we
 13 would have hoped. The key thing is that we all are here
 14 this evening with a signed agreement so we are now able
 15 to move forward or continue on forward with our CERCLA
 16 process, that being the public comment period of the
 17 proposed plan phase.
 18 Once this phase has been closed out, we've
 19 solicited and responded to public comments, if, in fact,
 20 after that input we do have public acceptance, and that
 21 is one of the criteria that we need to consider, we can
 22 move forward then with the publication of a ROD with
 23 hopefully this still being the preferred alternative.
 24 That would be the next step in the normal CERCLA
 25 process.

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1 And then with the agreement that we do have,
 2 we would continue to be move forward with the water
 3 districts, in this instance, with the remedial design of
 4 the remedy, and then move forward with the actual
 5 treatment of the groundwater itself over the
 6 long-term.
 7 So that is the process-- I won't say a nutshell
 8 because that was kind of a big nutshell, wasn't it? But
 9 that is the process and how we've gotten to where we are today.
 10 All right. Now, the reason why I asked to be
 11 sure that you have one of those color handouts that are
 12 over on the table there, because looking at this one,
 13 it's not quite as crisp, and plus, just to get it on
 14 this elongated sheet, it's a little distorted, and that
 15 handout is a little bit crisper. So if you like, feel
 16 free to pick this up.
 17 But this does give a pretty good feel for
 18 the extent of the on- and off-station groundwater
 19 contamination that did take place that we are now
 20 responsible for providing a remedy for and ultimately
 21 making sure that it is cleaned up.
 22 Tonight I'll be serving essentially as a
 23 facilitator for the discussion this evening. We do, as
 24 I mentioned, have a variety of speakers, each presenting
 25 a different portion of where we're at in the process.

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1 I'll turn it over now to Ms. Content Arnold.
 2 She is the lead remedial project manager for El Toro.
 3 She's with the Navy staff, working out of San Diego.
 4 She's going to go ahead and start off with some of the
 5 more technical aspects of some of this, getting into the
 6 site descriptions and getting into the remedial
 7 investigation.
 8 MS. ARNOLD: Thanks, Dean.
 9 As Dean said, I'd like to start off by giving
 10 you a brief description of the two sites. Site 18 is
 11 the regional groundwater plume, and it includes the area
 12 of groundwater contamination in the principal aquifer
 13 extending off-station from the source area. The Source
 14 area is Site 24. The plume extends approximately
 15 three miles west near Culver Avenue in Irvine.
 16 Now, the principal aquifer varies from
 17 approximately 200 to 450 feet below ground surface. The
 18 primary chemical of concern is trichloroethene, or TCE
 19 as I'll be referring to it this evening.
 20 Site 24 is a VOC source area, and that
 21 encompasses approximately 200 acres in the southwest
 22 quadrant of the base. It also includes two large
 23 hangars, buildings 296 and 297. Now, this is where
 24 aircraft repair and maintenance took place on the
 25 base.

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1 The footprint of site 24 includes the shallow
 2 groundwater unit contamination, as well as the soil
 3 contaminated within the area.
 4 This evening we're not going to be
 5 focusing on the soil because that was addressed in an
 6 interim ROD back in 1997. We plan on having a final ROD
 7 for the soil cleanup in the year 2002. So, like I said,
 8 tonight we'll be focusing on the shallow groundwater
 9 contamination for site 24.
 10 Additionally, the shallow groundwater unit
 11 varies from approximately 80 to 110 feet below ground
 12 surface. And once again, the primary contaminant of
 13 concern is TCE.
 14 Now, I know this is difficult to see, so I
 15 hope you have your handouts with you. But basically,
 16 this is an aerial of site 24, and I'll be flipping back
 17 to that map to put it in perspective for you.
 18 But these are the two hangars over here, which
 19 was the source of the contamination where the industrial
 20 activities took place on the base. And the
 21 contamination flowed off base in a westerly direction
 22 like this.
 23 To put it into perspective: here is Site
 24 24, shallow groundwater contamination here, and then we
 25 have just some landmarks that I'd like to point out:

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1 I-5 right here, the 405 over here, and then Culver Drive
 2 over here. And you can see that the principal
 3 contamination area extends off base approximately 3
 4 miles, like I said.
 As Dean mentioned, as part of the CERCLA
 6 process, we completed a remedial investigation, or as we
 7 commonly refer to it, an RI.
 8 So what is an RI? Well, the objective of the
 9 RI is to evaluate the presence, nature, and extent of
 10 contamination. It includes three components primarily,
 11 an initial investigation, an extensive field
 12 investigation, and also a base-line risk assessment.
 13 So what are the components of the initial
 14 investigation? Well, this included document review,
 15 aerial photo reviews, personal interviews, and an
 16 initial soil gas investigation.
 17 The extensive field investigation included
 18 first developing a workplan. And this workplan was
 19 reviewed by the BRAC Cleanup Team, and that includes
 20 U.S. EPA, DTSC, as well as the Regional Water
 21 Quality Control Board and the Navy.
 22 And before going out into the field, we gained
 23 concurrence from that regulatory group prior to
 24 commencing field work. And once out in the field, we
 25 did extensive soil, groundwater, and soil gas sampling.

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1 From this data that we gathered, we put it all
 2 into a risk assessment, which Dr. Temeshy will be
 3 touching on a little bit later on this evening.
 4 This RI was conducted between 1992 and 1997,
 5 and the conclusions basically confirmed the
 6 following:
 7 First of all, that VOCs in soil and
 8 groundwater originated at site 24, the source area. The
 9 highest concentrations of TCE were found beneath
 10 building 296, that is, one of the hangars that we
 11 previously looked at, and concentrations were 4,850
 12 parts per billion.
 13 TCE was also the predominant chemical of
 14 concern, as we discussed, in both soil and groundwater
 15 TCE is an industrial solvent that was used primarily
 16 for cleaning, degreasing, and paint stripping.
 17 Historically, it was common practice to use that.
 18 VOCs have migrated from the soil at site 24 to
 19 the shallow groundwater unit and then finally to the
 20 principal aquifer. And also, as we've discussed, the
 21 VOC plume extended three miles west of the station in
 22 the principal aquifer near Culver Drive.
 23 Within station boundaries, the TCE is limited
 24 to the shallow groundwater unit, not the principal Groundwater
 25 unit, and That's the shallower unit from 80 to 110 feet below

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1 ground surface. Outside the station boundary,
 2 we have contamination in both the shallow and
 3 the principal aquifer. And in the shallow groundwater
 4 unit, water quality is better than the federal and state
 5 water quality standard of 5 parts per billion for TCE.
 6 In the principal groundwater unit, the concen-
 7 trations range generally from barely detectable up to 50
 8 parts per billion.
 9 Finally, TCE concentrations gradually decrease
 10 as you move away from the source area.
 11 Now, this next figure here depicts the
 12 migration of VOCs released from the surface. Over here,
 13 if you can imagine, this is where the hangars are here.
 14 We have a release of TCE to the soil, and you can see it
 15 migrating to the shallow aquifer approximately 80 to
 16 110 feet below ground surface.
 17 As it travels downgradient, it eventually
 18 migrates to the regional groundwater plume, which is
 19 deeper,
 20 approximately 200 feet below ground surface.
 21 MR. GOULD: Thank you, Content.
 22 Okay. As I outlined just previously, the next
 23 step in the process would be the feasibility study
 24 portion where we look at alternatives.
 25 But in order to help us determine those

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1 alternatives, we need to know, with all the information
 2 that we just gathered from the remedial investigation,
 3 what threat is actually posed to human health and the
 4 environment.
 5 So Dr. Andrea Temeshy is going to go ahead and
 6 speak to us tonight on that particular subject. She is
 7 an employee with Bechtel National, and she is
 8 outstanding in her field.
 9 DR. TEMESHY: Well, thank you.
 10 Before I go through what the results are on
 11 the risk assessment, I want to briefly introduce the
 12 concept of the risk assessment.
 13 Basically, what the risk assessment
 14 does is estimate what the potential hazard
 15 to an individual exposed to the chemicals at a site are.
 16 That is, are we going to have a potential for some
 17 adverse health effect?
 18 And when we talk about an adverse health
 19 effect, we're talking about could this person develop
 20 cancer, or chemicals also can elicit another type of
 21 effect like non-cancer effects, which could range
 22 anywhere from liver or kidney or systemic toxicity-type
 23 effects.
 24 So when we talk about the risks, what we're
 25 doing is we are translating chemical concentrations into

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1 an estimate of hazard to human health.
2 So on that, we'll move on to why do we do a
3 risk assessment. As was stated before by Dean, it is an
4 integral part of the remedial investigation concept. So
5 as a first step, we have to be able to do it in
6 order to be in compliance with guidelines.
7 And again, it's to determine if we have
8 a problem as far as human health based on exposure to
9 the chemicals at a site?
10 How are the results of this assessment
11 used?, If we have a risk, then that will determine
12 if cleanup is going to be necessary or not at the site.
13 How the risk assessment is done. I'm going to
14 go through, the steps that I do in order to
15 quantify risks so that we know all the components that
16 are utilized.
17 And that is -- the first thing is we have the
18 chemical contaminants, and those are at a certain
19 concentration. For example, we have TCE. We've got
20 concentrations of TCE, and we're going to be using that
21 in the risk assessment.
22 The next thing is we are going to determine
23 who's exposed. What is -- what are the potential
24 receptors at a site? And looking into the future, could
25 we have a residential receptor at the site? That would

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1 be a very conservative scenario.
2 And how would exposure take place? What kind
3 of pathways? Is this person going to be drinking the
4 groundwater? And is he going to be using it as a
5 drinking water source? It's going to be also used for
6 bathing, so you have dermal contact.
7 And then you would also have the inhalation
8 because volatile organic chemicals will basically be
9 So then we have the chemicals and the
10 person exposed to them under different pathways.
11 All of this information is integrated into a
12 mathematical model. And within that mathematical model,
13 we also look at how toxic is this chemical. The
14 result of integration would be the risk number.
15 When we talk about the risk number,
16 we have two different end points. We would have the
17 cancer end point, and we also have the non-cancer-type
18 effect. And when we calculate the risk, we're going to
19 address both end points.
20 Now, one thing to consider is when we're putting
21 all of this information together, we are going to be very
22 conservative in our assumptions. And I'm going to go
23 through an example as to what I mean by "conservative"
24 in the next slide.
25 We are not going to at any time underestimate the risk.

Page 23

1 We're always going to be erring in the overestimation of
2 it. That is, that way we are always protective of human
3 health. Therefore, the actual risk is always
4 going to be lower than the one that we are actually
5 estimating.
6 Now, this is just a quick overhead as to
7 showing that we've got several things that must occur in
8 order to quantify the risk.
9 That is, (a), we have to have chemical
10 contaminants, (b), we have to have a way to release the
11 chemicals from the media to an area where humans are
12 going to be exposed. If we have a residential receptor,
13 then -- that person is going to be exposed to that
14 groundwater via use of that groundwater as a drinking
15 water source.
16 We need to have a person that is exposed to
17 chemical contaminants. If you don't have a person
18 exposed to, then you don't -- you cannot quantify the risk.
19 And finally, you've got different exposure pathways for
20 these contaminants; that is, by eating it, by drinking it,
21 or by touching it. Now, we've said earlier that the risk
22 estimates are very conservative and overestimate
23 in the risk for protection of human health.
24 When we talk about residential exposure,
25 these are some of the assumptions that I want to present

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1 to you that show you how conservative these estimates
2 are.
3 We are assuming that a resident is basically
4 at a site exposed to groundwater, in this instance, for
5 a period of 30 years. And that means this person never
6 moves. It's there for 30 years, from birth to 30
7 years.
8 Also, basically, 24 hours a day for 350
9 days a year. Again, that means that this person does
10 not leave the house except for 15 days over that year.
11 So that's a very conservative assumption because this
12 person does not work, does not leave the house, and that
13 is very, very conservative.
14 Again, following this conservative
15 scenario, as far as drinking water, two liters of water
16 a day are consumed. All of these values, all of these
17 assumptions, are established by EPA, and we basically
18 implement them in our risk assessment.
19 So when we talk about the resultant risk numbers,
20 keep in mind that these are numbers that are based on
21 conservative assumptions.
22 Now, we've quantified risks, but what do they
23 mean as far as are they acceptable? Are they unacceptable?
24 We've got established criteria by which to
25 compare how acceptable or unacceptable these risk numbers

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1 - are. For cancer risks, we've got a criteria
 2 established by EPA, which means that if it's less than
 3 one in a million, that is, one times 10 to the minus 6
 4 1×10^{-6} for cancer risk, then the risks are considered
 acceptable.
 5 If they are within one in 10,000 to one in a
 6 million or 10 to the minus 4 to 10 to the minus 6,
 7 again, this is for the cancer risk, then it is within
 8 the risk-management range, and they're in the generally
 9 allowable risk range.
 10 Now, what that means is that, at this point,
 11 the stakeholders and the regulatory agencies, will get
 12 together and will integrate with the results with other
 13 factors.
 14 For example, are the concentrations at the
 15 site greater than drinking water standards?
 16 All of these factors will be taken into consideration to
 17 determine if remedial action has to be implemented at
 18 the site.
 19 If risks are greater than one in 10,000 or
 20 greater than 10 to the minus 4, then that is considered
 21 unacceptable. And at that point, cleanup is warranted.
 22 Now, for the non-cancer risks,
 23 there is a threshold of one. And if risks
 24 are less than one, again, that is considered allowable.
 25

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1 If they're greater than one, then there is a potential
 2 for adverse health effects to develop.
 3 And at that point, then, again, considerations
 4 as to what the contaminant levels are like with respect
 5 to MCLs, in this instance, would be considered as
 6 far as the cleanup.
 7 Now, I'm going to
 8 briefly show you what the risk results are
 9 under baseline conditions, that is, prior to any
 10 remedial action. These results are for an individual,
 11 that would be, in this case, a resident exposed to the
 12 groundwater at both Site 18 and Site 24.
 13 Site 18 is the principal aquifer, and Site 24
 14 is the shallow groundwater unit. And again, we've got
 15 two different end points. We have the cancer risk, and
 16 we have the non-cancer portion of it.
 17 For the cancer risks, under residential
 18 conditions, the principal aquifer results are within the
 19 10 to the minus 6 and 10 to the minus 4 risk range. And
 20 if you flip back to the previous slide, so they are in
 21 this area right here. That means that they're generally
 22 allowable. And at that point, you would integrate other
 23 criteria into whether cleanup is required or not.
 24 Now, for the shallow groundwater, the risks
 25 are greater than 10 to the minus 4, and the 10 to the

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1 minus 4 is the unacceptable risk range. Again, these
 2 are residential risk results, which means that you've
 3 got somebody exposed to the groundwater via drinking it,
 4 dermal contact, while showering, for example, and then
 5 through the inhalation portion of it while this
 6 groundwater is being used as a potable water source.
 7 Finally, the non-cancer health effects, since
 8 we also have to address them. These results are greater
 9 than one. So there is a likelihood of potential adverse
 10 health effects for both the principal aquifer and the
 11 shallow groundwater unit.
 12 Now, that we have this information, then
 13 the next step is what does it mean?
 14 For human health risks that are in excess of 10 to the
 15 minus 4, those are not acceptable, which means that they
 16 warrant some sort of remedial action.
 17 At the shallow groundwater unit, then,
 18 since the risks are in excess of 10 to the minus 4,
 19 again, these are residential risks, then a remedial action
 20 will be implemented.
 21 Now, at the principal aquifer, the risks are in the
 22 10 to the minus 4 (10-4), 10 to the minus 6 (10-6) risk range.
 23 So that is within the risk-management range.
 24 However, the VOC concentrations exceed the
 25 federal and state water quality standards, and then that

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1 leads towards remedial action.
 2 So at both the shallow groundwater unit and the
 3 principal aquifer, you have remedial action based on the
 4 risk and also based on the exceedence of the VOCs for the
 5 MCLs.
 6 MR. GOULD: Thank you very much, Doctor. Good.
 7 Good information.
 8 Now, next step in the program I mentioned
 9 previously is the feasibility study. That will be -
 10 that and an introduction into the preferred remedy will
 11 be briefed to you by Mr. Andy Piszkin, the former lead
 12 remedial project manager for El Toro, but prior to Content
 13 Arnold.
 14 He was involved for some time through all the
 15 investigation stages for a number of years, so he has a
 16 great deal of technical knowledge and background on it.
 17 So I think he's probably perfectly suited to give this
 18 particular portion of the brief.
 19 One clarification I want to point out. I
 20 mentioned the signators on the settlement agreement.
 21 There was one more representative on behalf of the Navy.
 22 Department of Justice had negotiated for the Navy, but
 23 we actually had a Navy signator on it. So there were
 24 four signators.
 25 So Andy, if you would, please.

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1 MR. PISZKIN: Good evening. My name is Andy
 2 Piszkin. And like Dean says, I've been around quite a
 3 while. I started as a remedial project manager in '91,
 4 on El Toro. I feel like this is kind of homecoming night
 5 for me.
 6 I've been involved in a lot of the groundwater
 7 studies as well as some of the negotiations for the
 8 agreement that has been signed by the Department of Justice
 9 and the water districts, as well as the Navy.
 10 We use the EPA guidance on doing a remedial
 11 investigation/feasibility study. This is what it is,
 12 guidance, but it's got some real good stuff in it. And
 13 that's where the objective of a feasibility study comes
 14 in. It's different than what I have. You've seen
 15 remedial investigation. That's "what's out there." A
 16 risk assessment is "what does that mean?" and
 17 "What does that matter?"
 18 And if it matters, then some action has to be
 19 taken, the feasibility study is, "what can you do about
 20 it." And the preferred alternative that we're proposing
 21 tonight for public comment here is what we think is the
 22 best thing to be done because of the risk and because of
 23 what we found.
 24 So the feasibility study is trying to combine
 25 a lot of the - what's the objective of our remedial

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1 action. RAOs Remedial Action Objectives is what I call them.
 2 And first, you have to define the problem, what kind of response
 3 actions you need, what kind of tools are out there in the
 4 environment and industry that will help you solve those.
 5 Do you have to get the groundwater out?
 6 What do you do when you have it? How can you
 7 treat it? Do you have to get it out? Can you treat it
 8 down in the groundwater where it is 200 feet, 400 feet
 9 below the ground surface?
 10 How do you treat it? Do you heat it up? Do
 11 you take it off to a landfill? What do you do with it?
 12 So you look at all those possible
 13 technologies, and you try to then piece them together in
 14 some kind of a treatment train.
 15 Okay. Well, maybe I'll pump it out first.
 16 Then I have it, and I have to treat it somehow. And
 17 I've got A, B, C, D, E way to treat it, and then I have
 18 to do something - then it has to go somewhere else.
 19 You know, what do you do with it?
 20 So you - you look at all those technologies,
 21 what are those process options, and you put them
 22 together. You do some initial screening, which we have
 23 done, and some things just don't fit for the scenario
 24 that - of what we have found and what we have to do
 25 with it. So those get kind of screened out being

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1 noneffective.
 2 Then you conduct detailed analysis. And
 3 under - it was ironic. Under the - the last one,
 4 under the guidance, it says "Further define alternatives
 5 as necessary."
 6 Well, we spent a lot of time further defining
 7 alternatives as necessary. Because one of the things
 8 that has to happen, you can have the greatest
 9 technology, but if it can't be implemented, it doesn't
 10 go anywhere.
 11 So one of the things and the only thing this
 12 settlement agreement that has been signed by a bunch of
 13 parties is that it makes the alternatives that are being
 14 proposed as a joint project with the water districts as
 15 implementable.
 16 It will not be implemented unless the Record
 17 of Decision selects Alternative 8A and 10B prime. If
 18 that Record of Decision doesn't get to that point, that
 19 agreement doesn't go any farther. It doesn't happen
 20 even though it's all signed, it allowed us to be here
 21 tonight to say we have a proposed plan that is actually
 22 doable.
 23 So the first thing is what's our objectives?
 24 One thing that's not on this slide is prevent exposure
 25 from nontreated water. That was actually our

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1 third objective. We want to contain it.
 2 Don't let it go any farther, or at least minimize
 3 the migration of any contaminated groundwater above
 4 drinking water standards.
 5 The second one is to reduce, you know, the
 6 concentrations to below drinking water standards. And
 7 the third, like I say, it's not on there, but it's to
 8 prevent anybody from coming into contact with something
 9 that's concentrated above the drinking water standard.
 10 And, therefore, like the risk triangle, you
 11 need somebody to be exposed, you need a toxin or a
 12 concentration, and you need a pathway. If you can block
 13 the pathway, you block the risk.
 14 On page 9 of the proposed plan, it gives
 15 you - it's actually table 2, it's a good list of some
 16 of the alternatives that we considered early on like
 17 hydraulic containment.
 18 You can put wells in, extraction wells. You
 19 can put in reinjection wells. You can put water into the
 20 ground so the groundwater doesn't flow any farther. You
 21 can install a slurry wall, but this technology was
 22 screened out early because it has to be installed too deep.
 23 In such a large area, it would just be just impractical
 24 and not cost-effective. So that's one of the alternatives
 25 that this just doesn't fit with what we have to work with

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1 here.
 2 You have some of the removals. You can –
 3 well, you can, you know – extraction from groundwater
 4 wells. Vacuum-enhanced groundwater is kind of doable.
 That is, – put a vacuum on the extraction well.
 5 You have some of the treatment that you can do
 6 in place, and you have some of the treatment process
 7 that you can do once you bring the groundwater up.
 8 So this is what we had at our disposal, and we
 9 went through some of these things, some of these
 10 technologies in the feasibility study. And with the
 11 scenario of how large and dilute the principal aquifer
 12 plume is and the area and the concentration and the flow
 13 of the shallow groundwater unit, we have a variety of
 14 alternatives.
 15 And we'll go to that next slide.
 16 I must say I remember discussing a lot of the
 17 discharge. What do you do with the water once it's
 18 treated? Do you put it in the washes? Do you put it
 19 in Agua Chinon or Bee Canyon Wash?
 20 Do you just put it out in the middle of the
 21 runway surface impoundment?
 22 Do you reinject it? Do you use it for irrigation or
 23 domestic use?
 24 There's a lot of scenarios. There's probably

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1 like, you know, 12 scenarios that we dreamed up of let's
 2 really think outside of the box. What can we do with
 3 the water after we treat it? And that was – that was a
 4 main issue on what's implementable.
 5 So here we have – I believe this is page 14
 6 in the proposed plan, and it really goes through the
 7 alternatives that kind of met the – you know, passed
 8 the ha-ha test, the ones that are kind of doable, and
 9 they all go to kind of pump and treat.
 10 Because of the environment, because there is
 11 an Irvine Desalter Project that in the late 1980s, during
 12 that decade it was on the books as a water supply project,
 13 and I know Richard Bell and Steve Conklin both, or one of
 14 them, will talk more about that after I sit down, but
 15 looking through the alternatives, like alternative 8 –
 16 or I'm sorry – 2A, that is a Navy stand-alone.
 17 We looked at the Navy doing their own large
 18 groundwater pump-and-treat project without the Desalter,
 19 without the local water districts. If that – if Irvine
 20 desalter project didn't happen, the Navy had to have
 21 some alternatives that they could do on their own, and
 22 that's what 2A is.
 23 6A is a combination of using a joint project
 24 with the local water districts. 7A – A and B are
 25 alternatives that incorporated monitored natural

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1 attenuation and some of those results.
 2 Well, let's go on to the next slide.
 3 We took all those, and there are the nine
 4 criteria of EPA. The first two are critical. They're
 5 called threshold criteria. It's the protection of human
 6 health and the environment, and it has to meet the
 7 applicable laws. Those are the first two.
 8 The next five, they're the balancing criteria.
 9 That's the meat of how to – it's the majority of
 10 criteria to help select a proposed alternative.
 11 The last two are modifying criteria. If there
 12 is – you know, we – we want state acceptance. We want
 13 public acceptance. And those actually come after this
 14 meeting today and the close of the public comment period
 15 where we take the response – take the comments and in
 16 the Record of Decision provide a responsiveness summary
 17 to all the comments related to the proposed plan that
 18 the Navy's putting out.
 19 So next slide.
 20 This is page 19 of the proposed plan, as I
 21 term it, the meatball chart. And I'd have to look at
 22 the other page, page 18. It's nice that they're right
 23 together because page 18 goes through those nine
 24 criteria very specifically. You know, it has italicized
 25 font, which discusses what is looked at under that

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1 criteria.
 2 For instance, "Short-term effectiveness.
 3 Assesses how well human health and the environment will
 4 be protected from impacts due to construction
 5 implementation of a remedy. Also considers time to
 6 reach cleanup goals."
 7 I must admit on the previous slides, two back,
 8 the alternative that we think is the best has one of the
 9 longest time frames when it comes to cleaning up the
 10 principal aquifer. It has 95-plus years. That's one
 11 reason we have this little plus here is it's a little
 12 bit of a misnomer. You have to look at the alternative
 13 that we're proposing as a combination of alternative 8A
 14 as well as 10B prime.
 15 If you look at 10B, and prime is just a little
 16 bit of a reduction in the flow, and we look at the
 17 modeling – the groundwater modeling, it didn't have a
 18 significant impact to the results.
 19 10B cleans up the shallow groundwater in
 20 roughly 20 years. That's a big thing because that's the
 21 source of that large dilute regional plume. That's a
 22 big priority for the Navy to get rid of the source as
 23 soon as possible.
 24 And so it's the combination of both 8A and 10B
 25 prime is what we're acting on for overall short-term

1 analysis. And like our little asterisks or our little
 2 plus sign says, there's a lot of optimization that's
 3 going to happen when we get into the design.
 4 And the groundwater modeling is - really, the
 5 main focus is comparative analysis. How does it compare
 6 to the other alternatives?
 7 There is lots of opportunities to optimize
 8 well placement. And when you're running this thing for
 9 many, many years, as it will be used as an irrigation
 10 supply source, it's not going away, and it will be very
 11 beneficial.
 12 So we look at this meatball chart. We don't
 13 have weighted averages. We don't have numbers. But you
 14 can see where it's a full closed-in circle, a good performance.
 15 (Note to Readers: Recommend referring to the
 16 Comparative Analysis of Remedial Alternatives in the
 17 Proposed Plan or the public meeting presentation handout.)
 18 You can see the preferred alternative has
 19 three - actually, we have Navy state acceptance in
 20 there, which is nice - nice as a full circle, best
 21 performance.
 22 The big one, I have to say, is
 23 implementability. You see these other three
 24 alternatives. They are joint Navy/water district
 25 projects. But they just - they did not make the cut,

1 and they did not meet the settlement agreement.
 2 So the settlement agreement on the 8A, 10B
 3 prime is key to having something doable. So that's one
 4 of the main reasons we prefer it.
 5 Cost-effective, it's got long-term
 6 effectiveness. It's great to be hooked up with a CERCLA
 7 remedy with a long-term local water district because
 8 they're here. They know how to run these things. You
 9 know, it's their business and they're experts and it's
 10 great to team up with them.
 11 So here's some of the kudos or some of the
 12 things that are the real benefit of our preferred
 13 proposed remedy.
 14 Optimal solution. Given all the factors, all
 15 the technical factors, all the nuances that we've had
 16 with the local water districts, with the regulatory
 17 agencies over quite a many number years, we think it's
 18 the best - it really is the best solution.
 19 It does resolve or satisfy our CERCLA
 20 requirements under the Navy and under our Federal
 21 Facilities Agreement. And the cleanup team, the BRAC
 22 cleanup team, they support it. They've been very
 23 diligent, very patient with the Navy and the local water
 24 districts on getting this settlement agreement that
 25 allows our preferred alternative to be implementable.

1 So next.
 2 In the proposed plan, you do have some
 3 schematics. They all start looking the same after a
 4 while. But truly, this is different. And I do - like
 5 Dean said, I would definitely support getting the
 6 handout version of the map that we see over here.
 7 It says "Irvine Desalter Project," where in
 8 the kind of red - I'm not sure if that's mauve or I
 9 don't know what color - our proposed alternative is.
 10 The light blue line is not what the Navy's
 11 proposing. That is the water district's drinking water,
 12 potable water system, that's outside of our
 13 VOC-contaminated plume.
 14 So with that, I'm going to give it back to
 15 Dean.
 16 MR. GOULD: Thank you, Andy. Terrific.
 17 Well, the evening certainly wouldn't be
 18 balanced unless we had presentations by the water
 19
 20
 21
 22
 23
 24
 25

1
 2
 3 districts that we're partnered with. And in just a
 4 moment, we'll have Mr. Steve Conklin from the Orange
 5 County Water District as well as Mr. Richard Bell from
 6 the Irvine Ranch Water District come up and give their
 7 perspective on the remedies being proposed and the
 8 historical perspective of what has transpired to date
 9 and offer a little more insight as far as the nuances to
 10 the implementation of the remedy we've been talking
 11 about so far.
 12 If you would, Steve.
 13 MR. CONKLIN: Thank you, Dean.
 14 And good evening. My name is Steve Conklin
 15 with the Orange County Water District, and I'm very
 16 pleased to be here.
 17 Andy said he started working on the project in
 18 1991. I actually started working on it in 1989 when I
 19 started with the water district over 12 years ago.
 20 Roy Herndon, our district hydrogeologist with
 21 the district, you started before I did.
 22 MR. HERNDON: 1988.
 23 MR. CONKLIN: 1988. So we have a long history
 24 with this project.
 25 So Roy, myself, and the water district board

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1. of directors are very pleased we've reached this point.
 2 We're very supportive of the project and very anxious to
 3 move forward with this very implementable and very
 4 technologically sound project that will meet the needs
 of ourselves, our partners, and the various regulatory
 agencies.
 7 The water district is the groundwater
 8 guardian. We were created in 1933 by special action of
 9 the state legislature to protect and preserve the Orange
 10 County groundwater basin.
 11 It's a very valuable resource. It's the water
 12 that's under our feet right here. It's the water that
 13 provides the needs of over 2 million people, that
 14 stretches from Los Alamitos all the way down to Irvine,
 15 from Anaheim and Fullerton.
 16 That whole area there is - about 70 percent
 17 of the water that those 2 million people use comes from
 18 the ground. This water has to be protected. It's an
 19 invaluable resource, and this project does protect this
 20 very important resource for us.
 21 The water district is an independent
 22 monitoring authority. Our purpose is the groundwater
 23 basin. And with that, whatever - whatever it takes,
 24 that's our purpose - and our existence is to
 25 protect the groundwater basin.

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1 The project, by treating the contaminants here
 2 at the site, it prevents the contaminants from moving
 3 farther downstream and potentially contaminating other
 4 groundwater. This water has its natural movement,
 5 more or less, from east to the west. It would be moving
 6 from the Irvine area actually on through Santa Ana and
 7 some of these other areas. And these areas are
 8 underlain by groundwater. If this contaminant continued to
 9 move it would contaminate that water as well.
 10 So it's very important to pull the water out
 11 here, treat it, and then be able to use it.
 12 This project is very valuable in that it's
 13 taking water, which is otherwise not usable, treating
 14 it, and making it into a very valuable resource. It's
 15 making us more water independent and not dependent so
 16 much on Metropolitan Water District and from water from
 17 out of the area. So it's making use of water right here
 18 and making the water available for us and for our
 19 children and for our children's children.
 20 So with that, I'd like to turn it over to
 21 Richard Bell, my partner in the project, from Irvine
 22 Ranch Water District.
 23 MR. BELL: Thank you, Steve.
 24 It's a pleasure to be here tonight. I concur
 25 with the comments Steve made.

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1 Both water districts' boards of directors back
 2 in June, after many years of effort, support the project.
 3 are very, Our districts are very enthusiastically behind
 4 the project, and we have been working very diligently on
 5 this project for many years.
 6 I started with the district - since we're
 7 giving a little history of each of our involvement with
 8 this project, I started here four years ago and got very
 9 involved with the project at that time. About half
 10 my time is devoted in one way or another to this
 11 project in negotiation and project
 12 development.
 13 A little side note, 20 years ago,
 14 I was the regional manager for a Regional Water Quality
 15 Management Program for Southern California back in the
 16 late '70s when VOCs were first discovered in
 17 groundwater. At that time, we knew
 18 nothing about VOCs in the Irvine Area since this area was
 19 agricultural.
 20 (Interruption by reporter.)
 21 MR. BELL:
 22
 23 One of the things that I'd like to talk about
 24 is our perspective on the project and how we got here.
 25

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1 The first slide is titled "Two Projects
 2 in One." That's an important point to understand. The
 3 project is both a nonpotable system, which is a CERCLA
 4 remedy that Andy addressed, and we also have a potable
 5 system.
 6 And I'll show you them in a minute on the maps.
 7 The nonpotable system basically takes water
 8 from the VOC Contamination plume, which is extracted, treated,
 9 and then would be used in a recycled nondrinking-water system
 10 primarily for landscape irrigation, and other nonpotable
 11 uses.
 12 It is part of the CERCLA remedy.
 13 The potable system are wells which are located
 14 safely beyond the plume, outside the plume, and outside
 15 upgradient of the influence of pumping from the plume.
 16 This water will be treated to remove salts and
 17 nitrates, for use in our drinking water system.
 18 And we need to note that the potable project,
 19 is separate and
 20 not part of the CERCLA remedy.
 21 Next slide.
 22 It was very important early on in the process to
 23 get our public involved. A few years ago, we
 24 actually conducted some very extensive focus groups with
 25 our customers and community leaders.

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1 And what we found from that process was
 2 that our community and the leaders in the community
 3 very much supported the cleanup of the project, but
 4 they preferred that the treated water from the plume
 5 be used for landscape irrigation. And that's how the
 6 project was basically configured. We developed the
 7 project into two components at that time.
 8 One thing we do like to make clear is
 9 that the groundwater cleanup project and the
 10 groundwater supply project do not affect the ultimate
 11 use of MCAS El Toro. It really has no bearing on that
 12 decision at all.
 13 The plume that Andy showed in his picture
 14 basically is the same as we show here in color.
 15 This is the source area site 24 or the origin of
 16 the VOCs. They spread basically in the shallow unit and
 17 then dropped down into the principal, deeper aquifers
 18 and have been detected out as far as Culver and Drive.
 19 But we have designed a system that has two
 20 wells here in the major – or the hottest spot of the
 21 plume for extraction.
 22 We also maintain a well here at the toe of the
 23 plume to help provide containment of the plume so it doesn't
 24 get beyond this point. We want to protect this area
 25 downgradient of the plume. That's what Steve talked to earlier.

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1 The water would be pumped from these wells,
 2 conveyed by a pipeline to a central treatment plant here where
 3 the water will be cleaned and then from that point will
 4 be put into our nonpotable irrigation system.
 5 We also have, which is separate from the –
 6 the CERCLA remedy, is our potable system, which would be
 7 outside the plume, would be some wells located along the
 8 Southside of the Interstate 5 Freeway.
 9 That water, as I mentioned earlier in this
 10 Part of the basin has higher salts from past agricultural
 11 activities and natural sources.
 12 This water will be pumped from these wells to
 13 the same treatment plant location, but into a separate
 14 facility, where it will be desalted and disinfected
 15 it and pumped in the potable system.
 16 Not part of CERCLA remedy.
 17 The treatment system that will be used for the
 18 nonpotable project will include primarily two types of
 19 treatment processes. One is reverse osmosis, which will
 20 desalt the water to levels where we can use it for irrigation
 21 supply, and the second would be a packed aeration tower
 22 for air stripping to remove the volatile organic
 23 contaminants.
 24 Those – processes are both the best
 25 available technology. They're proven technology and

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1 been used in many different locations, and they're very
 2 reliable processes.
 3 The air that will be stripped out, which will
 4 contain the VOCs will be further treated through a granular
 5 activated carbon unit, to absorb all the VOCs in the air.
 6 The treated air – will be free of contaminants so there will
 7 be zero discharges from this facility to the environment.
 8 And after this water is treated, it will be
 9 disinfected and put into our system.
 10 This is the same chart that's on the
 11 proposed plan on page 16, I believe, that Andy
 12 showed.
 13 As basically he said, the water from the
 14 shallow groundwater unit on base at site 24, contains
 15 the high concentrations of contaminants.
 16 The shallow groundwater unit will be pumped by
 17 the Navy and conveyed to a pipeline, where we'll come over
 18 in a pipeline. We'll take custody of that water. That water
 19 will be treated by reverse osmosis and also go through
 20 the air stripper, the off-gases will go through carbon
 21 treatment, and the purified water will be disinfected and
 22 put it into our irrigation system.
 23 The deeper, is off base, water which has
 24 lower concentrations of contaminants, will be partially
 25 desalted. And all that water will also be air stripped,

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1 and the vapor treated, and then the water will be
 2 disinfected and put into our system.
 3 So that basically gives you a picture of how
 4 the flow streams are treated in the process.
 5 One of the things that's very important is to explain
 6 how we ensure both public health and environment
 7 are protected. And one of the key points is the extraction
 8 wells in the principal aquifer prevent the plume from
 9 being pulled towards the drinking water
 10 wells.
 11 We went through excessive groundwater modeling
 12 studies to prove that point and to ensure ourselves
 13 that that would be the case.
 14 And as I mentioned earlier, all the water,
 15 100 percent air stripped will be.
 16 Then all the highly contaminated water will also
 17 receive reverse osmosis.
 18 Again, there will be no air emissions from the
 19 project, and the wastewater brines from the treatment stages
 20 or steps will be disposed to a brine-line system. We'll
 21 convert a pipeline into a brine line that goes to the
 22 regional wastewater collection system so it doesn't
 23
 24
 25

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1 go into our reclamation system. Here, we reclaim our
 2 water. It is important we need to keep excess salts out of
 3 our reclaimed water sources and keep the water as pure as we can.
 4 So the brine goes through a regional system.
 5 Ensuring protection for the drinking water project is
 6 done through several methods.
 7 One, we will install an enhanced groundwater
 8 monitoring program and network in the project area so
 9 we can know in advance what's happening. Groundwater will be
 10 monitored and tested throughout the project life and
 11 in the plant on a continuous basis so we know exactly
 12 how the plant is operating at all times.
 13 As I mentioned, reverse osmosis is
 14 a proven technology. It's used to purify bottled water.
 15 It's widely known, and it's a safe process.
 16 And another thing we make clear is that we
 17 actually remove the salts and minerals for the drinking
 18 water side to better than what's required for drinking
 19 water standards. That's our goal, and that's what we plan
 20 to do.
 21 The last slide.
 22 In summary, the project benefits, from the perspective
 23 of a water supplier, can be summarized by four main points.
 24 One, it cleans and protects the groundwater basin that's been
 25 damaged over the years and is currently unusable for municipal uses.

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1 Second, it basically provides a new,
 2 locally controlled drought-resistant
 3 high-quality groundwater supply for both our potable and
 4 our nonpotable systems. So we're getting the water
 5 supply that we need, and it develops unused local supplies
 6 and provides drought-protection benefits. By having our supply
 7 here, it reduces our reliance on imported water.
 8 The third point is there will be no impact on
 9 our - on our ratepayers. Funding by the Navy the
 10 nonpotable system and from the Metropolitan Water District on
 11 the potable system will make the project feasible side.
 12 This will keep our costs in line or less than what we
 13 would pay for imported water.
 14 And fourth, the project is environmentally
 15 beneficial, as I mentioned earlier.
 16 And that's basically all I have on - from the
 17 Irvine Ranch Water District water perspective on the
 18 project.
 19 MR. GOULD: Thank you very much, Steve and
 20 Richard. I appreciate it.
 21 Before I provide closing remarks on this
 22 particular portion, I want to afford the regulatory
 23 representatives here tonight the opportunity to give
 24 their agency's perspective on the preferred alternative
 25 and the proposed plans that are being presented to you

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1 tonight.
 2 So I'll start off asking Ms. Nicole Moutoux,
 3 representing U.S. EPA, who is also the lead - lead
 4 regulatory agency of what is known as the BRAC Cleanup
 5 Team, the BCT for El Toro, if you would like to make
 6 some comments.
 7 MS. MOUTOUX: Yes.
 8 My name is Nicole Moutoux. I work for the
 9 Environmental Protection Agency.
 10 Basically, EPA is in support of the Navy's
 11 proposal for cleaning up the groundwater at sites 18 and
 12 24 because it will be, once in place, protective of
 13 human health in the environment, as well as restore the
 14 beneficial uses of the groundwater.
 15 And I've been on the team not as long as
 16 everyone else, but we believe that it's time for this
 17 cleanup to happen.
 18 MR. GOULD: Thank you, Nicole.
 19 Ms. Triss Chesney with DTSC.
 20 MS. CHESNEY: My name is Triss Chesney, and I'm
 21 with the California Environmental Protection Agency,
 22 Department of Toxic Substances Control, also known as
 23 DTSC.
 24 DTSC concurs with the proposed remedy because
 25 it addresses groundwater contamination by reducing the

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1 VOC concentrations to meet water quality standards,
 2 controlling VOC migration, and preventing domestic use
 3 of contaminated groundwater until cleanup goals are
 4 achieved.
 5 The proposed remedy is protective of human
 6 health and the environment and meets state regulatory
 7 requirements.
 8 MR. GOULD: And the third regulatory agency
 9 representative would be Ms. Patricia Hannon of the
 10 Regional Water Quality Control Board.
 11 MS. HANNON: My name is Patricia Hannon. I'm also
 12 with California EPA, Regional Water Quality Control
 13 Board, Santa Ana region. And we concur with the
 14 proposed remedy.
 15 We've been waiting a long time for this to
 16 happen, and we're very thrilled that it's going to
 17 work. It hopefully will work and restore beneficial
 18 uses to this.
 19 MR. GOULD: Thank you.
 20 There's a couple of closing comments
 21 before we open it up for comments.
 22 Next step, public comment
 23 period.
 24 Okay. Well, certainly we're kicking that off
 25 here tonight. But the formal comment period, if you're

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1 looking at page 2 in the proposed plan that's available,
 2 you see that it talks about the public meeting being
 3 tonight, November 13th. But there is a 30-day public
 4 comment period ranging November 7th to December 7th.
 5 That's an ominous day. During that period, we are
 6 gladly receiving public comments on this preferred
 7 alternative.
 8 So I know there's a lot of information being
 9 put out tonight. Maybe you need to go home and review
 10 some of the documents or come up with some questions,
 11 develop some questions for us, or perhaps share what
 12 you've learned tonight with some people that you know,
 13 coworkers, people in the community, anybody that you
 14 would like to get their input on and bounce it off
 15 them. By all means, you can then submit the comments to
 16 me. I would be more than happy to receive those
 17 comments.
 18 As I mentioned, anybody who responds to us
 19 with comments we'll gladly respond in writing formally
 20 giving you a detailed response to the questions that you
 21 may have. So I do encourage you to please take
 22 advantage of that. And anyone you know that would be
 23 interested in providing comment also, solicit them to do
 24 the same.
 25 Once the comment period is ended, and assuming

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1 that the proposed alternative that we've talked to you
 2 about this evening is, in fact, the preferred
 3 alternative that is ultimately selected, we'll go ahead
 4 and put that into a Record of Decision and publish
 5 that.
 6 And once that is signed after review of the
 7 regulatory agencies and our partners, we'll go ahead and
 8 finalize that document, and then it becomes final. Then
 9 this remedy is the one that we'll go ahead and move
 10 forward with, and the remedial design will then take
 11 place.
 12 This is a little bit of a unique instance in
 13 that remedial design will actually be produced by the
 14 water districts. And then once a design is complete,
 15 we'll move forward with the actual action, meaning the
 16 treatment of the contaminated groundwater.
 17 So that is essentially it as far as the formal
 18 presentation goes.
 19 So as I mentioned, I think you're going to get
 20 the idea that we want comments. Here's at least the
 21 second opportunity, aside from the informal session.
 22 Here's a second part for you to go ahead right now, go
 23 ahead and speak up, and we do have a microphone
 24 available for anybody who would like to provide
 25 comments.

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1 Now, there's a couple different ways we can do
 2 this. You can go ahead and give them right now, if
 3 that's your preference, or you can come up afterwards
 4 and give them directly to the court reporter here. Or,
 5 as I mentioned, you can submit them in writing tonight,
 6 or you can just go home and think about it and submit
 7 them in writing. That way, there's a lot of different
 8 options.
 9 We'll open it now. We can't provide responses
 10 right now unless it's an administrative issue. But if
 11 it's technical or things of that nature, we'll respond
 12 in writing to those.
 13 So is there anybody who would like to provide
 14 a comment right now in this particular format?
 15 MR. MILLER: I had a couple of questions.
 16 MR. GOULD: Please state your name and spell it
 17 out so our court reporter can get that, please.
 18 MR. MILLER: Okay. My name is Mark Miller, and I
 19 live in Mission Viejo. I got the notice in the paper
 20 and came to the meeting tonight.
 21 MR. GOULD: Terrific.
 22 MR. MILLER: And I was just looking at the
 23 proposed plan groundwater cleanup folder. And I notice
 24 on the bottom of page 16 where it says "Preferred Remedy
 25 Conceptual Design Alternatives 8A and 10B," on the

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1 bottom, it says "During low periods" – or "During
 2 periods of low recycled water demand, only shallow
 3 groundwater will be treated and either injected into an
 4 IDP injection well or stored in the IDP reservoir."
 5 And I was wondering if the greatest
 6 contamination is in the – the deep aquifers, why they
 7 wouldn't take the more contaminated water and treat it
 8 instead of the water out of the shallow well.
 9 MR. GOULD: Okay. Thank you.
 10 MR. MILLER: And one other question I had –
 11 MR. GOULD: Please.
 12 MR. MILLER: – the plume is mapped out. And
 13 they – they state there will be three deep extraction
 14 wells and then one shallow groundwater unit on-station,
 15 I guess, on the Marine base.
 16 And I was curious with the scrubber that is
 17 being designed to be in place, will there be any design
 18 parameter if the plume should expand where other wells
 19 could be added on and the scrubber would work to a
 20 larger capacity or will be designed if – on that
 21 contingency?
 22 MR. GOULD: Very good. Thank you.
 23 MR. MILLER: Thank you.
 24 MR. GOULD: All right. Anyone else?
 25 MR. STORIE: My name is Blake Storie. I'm a

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1 - resident of Laguna Niguel, and I'm sure my wife is as
 2 well in favor of any type of cleanup effort.
 3 Just looking at table 3 on page 14 - you have
 4 to understand we're very new to this this evening - the
 5 estimated remedial time in shallow groundwater is the
 6 quickest of the options you have there, which is good
 7 news, I would think.
 8 But the reverse on the estimated remediation
 9 time of the principal aquifer, much - is the longest of
 10 all the options. I'm just curious as to why that would
 11 be, why you would select that.
 12 MR. GOULD: That's a fair question. Thank you.
 13 MRS. BOOT-STORIE: I had a couple questions.
 14 My name is Carol Boot-Storie. I'm a resident.
 15 I want to make a statement.
 16 MR. GOULD: If you could just spell your last
 17 name, please.
 18 MRS. BOOT-STORIE: B-o-o-t, dash, S-t-o-r-i-e.
 19 First of all, I just want to say thank you
 20 all for being here. Sometimes you don't realize how
 21 much people appreciate your efforts given the turnout
 22 here. But thank you all for all your hard work, many,
 23 many years of hard work put together here.
 24 A couple of questions. On the 93 years, I
 25 know that there was a mention of greater than 4800 parts

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1 Any others?
 2 Okay. Well, certainly not the last
 3 opportunity to provide public comments. As I mentioned,
 4 please do speak to those perhaps in your neighborhood,
 5 those you work with, and encourage them to provide
 6 comments as well.
 7 If that is it, then we'll go ahead and close
 8 out this portion. We will still stick around for a
 9 little bit just in case something else comes up in this
 10 meeting, you have some other informal questions, or you
 11 care to fill out one of the written forms here or you
 12 just want to pick up some additional information.
 13 But short of doing all that, on behalf of all
 14 the speakers this evening, I definitely want to thank
 15 those community members that did come here this evening,
 16 especially the new faces.
 17 It really is refreshing to see the new
 18 interested folks coming out and spending their evening
 19 here. Wish we would have had more. But short of that,
 20 at least you folks chose to be involved. And we really
 21 do appreciate that likewise.
 22 So thank you very much for that. And let's
 23 go ahead and close that out. Thank you.
 24 (Whereupon, the presentation/question session
 25 was concluded at 8:27 p.m.)

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1 per billion at one point. But in some of these cases,
 2 you mentioned greater than 500 parts per billion.
 3 Is there a time estimated that would say in 20
 4 years, you would have the source down to 250 parts per
 5 billion or down to 10 parts per billion? Is there a
 6 time line, and how does that time line play out so that
 7 90 - 90 percent is salt in 20 years, and the remainder
 8 goes down from there? So that question.
 9 And is there a location where the cost
 10 associated with each of these alternatives is
 11 presented? And so we can sort of look at that and see
 12 if that's - okay. That's probably in there already.
 13 And then just a general question. Is there
 14 something that precipitated - I know five years is a
 15 long time for the negotiations.
 16 Is there something that precipitated a final
 17 date for that, whether it be political or whether it be
 18 a regulatory agency that made that determination? Could
 19 that have happened sooner? I know there are some smiles
 20 going on there. Is there something that said, "Here's
 21 the date, and here's why there's the date"? I'm
 22 interested in knowing that.
 23 And I think that would probably do it for the
 24 moment. Thank you.
 25 MR. GOULD: Great. Thanks.

Look-See Concordance Report

UNIQUE WORDS: 1,444
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NOISE WORDS: 384
TOTAL WORDS IN FILE: 11,426

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COVER PAGES = 3

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