DRAFT
MARE ISLAND NAVAL SHIPYARD
Restoration Advisory Board (RAB) Meeting Minutes

HELD THURSDAY, December 2, 2010

The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINSY) held its regular meeting on Thursday, December 2nd, at the Mare Island Conference Center, 375 G St., Vallejo, California. The meeting started at 7:10 p.m. and adjourned at 9:12 p.m. These minutes are a transcript of the discussions and presentations from the RAB Meeting. The following persons were in attendance.

RAB Community Members in attendance:

- Myrna Hayes (Community Co-Chair)
- Miguel Buchwald
- Chris Rasmussen
- Michael Coffey
- Wendell Quigley
- Paula Tygielski

RAB Navy, Developers, Regulatory and Other Agency Members in attendance:

- Janet Lear (Navy Co-Chair)
- Marie Dreyer (Navy)
- Neal Siler (Lennar Mare Island)
- Steve Farley (CH2MHill)
- Dwight Gemar (Weston Solutions)
- Howard Wittenberg (ERS)
- Janet Naito (DTSC)
- Elizabeth Wells (Water Board)
- Gil Hollingsworth (City of Vallejo)

Community Guests in attendance:

- None

RAB Support from CDM:

- Carolyn Moore (CDM)
- Doris Baily (Stenographer)
- Wally Neville

AGENDA
MARE ISLAND NAVAL SHIPYARD
Restoration Advisory Board (RAB) Meeting Agenda
January 27, 2011 – Mare Island Conference Center
375 G Street, Vallejo, CA

7 p.m.	**Welcome and Introductions** (Janet Lear, Myrna Hayes)	5 mins.
7:05	**Presentation:** ***Marine Corps Firing Range Update*** Mr. Reginald Paulding *Discussion*	 25 mins. 5 mins.
7:35	**Presentation:** ***Implementation of the Crane Test Area Remedy Investigation Area B.1*** Mr. Neal Siler, Lennar Mare Island *Discussion*	 20 mins. 5 mins.
8:00	**Public Comment Period**	5 mins.
8:05	**10-minute break**	10 mins.
8:15	**Administrative Business and Announcements** (Myrna Hayes, Janet Lear) December 2, 2010 Meeting Minutes	 5 mins.
8:20	**Focus Group Reports/Discussion** a) Community (Wendell Quigley) b) Natural Resources (Jerry Karr) c) Technical (Paula Tygielski) d) City Report (Gil Hollingsworth) e) Lennar Update (Steve Farley) f) Weston Update (Cris Jespersen) g) Regulatory Agency Update (Janet Naito/Carolyn d'Almeida/Elizabeth Wells)	25 mins.
8:45	**Co-chairs' Report** (Myrna Hayes, Janet Lear)	10 mins.
8:55	**Public Comment Period**	5 mins.
9:00	**Adjourn**	

THE NEXT RAB MEETING WILL BE HELD FEBRUARY 24, 2011

For more information concerning environmental restoration at Mare Island, contact:
Janet Lear, BRAC Environmental Coordinator & Navy Co-chair (619) 532-0976;
Myrna Hayes, RAB Community Co-chair (707) 557-9816
Janet Naito, Department of Toxic Substances Control (510) 540-3833; Carolyn d'Almeida, US EPA (415) 972-3150;
Elizabeth Wells, Regional Water Quality Control Board (Navy), (510) 622-2440;
RAB Support Contractor: Shelley Samaritoni, CDM Inc (858) 627-1553
Navy BRAC Web Page: http://www.bracpmo.navy.mil
Mare Island Environmental Web Page: http://www.mareisland.org

I. WELCOME AND INTRODUCTIONS

CO-CHAIR LEAR: Okay, everyone. I hope everyone had a great Thanksgiving, but we better get this show on the road. Tonight we have two presentations, one PCB program update by Marie Dreyer of the Navy, and we also have a presentation by Steve Farley, upcoming remedial work at IR-15.

So we'll start off with introductions. My name is Janet Lear, I'm the BRAC Environmental Coordinator and also the Navy Co-Chair.

CO-CHAIR HAYES: And I'm Myrna Hayes, the Community Co-Chair.

MR. COFFEY: I'm Mike Coffey, RAB member from American Canyon.

MR. RASMUSSEN: I'm Cris Rasmussen, a Mare Island resident.

MS. TYGIELSKI: I am Paula Tygielski, I'm a resident of Benicia.

MR. BUCHWALD: Miguel Buchwald, resident of Mare Island.

MR. QUIGLEY: Wendell Quigley, resident of Mare Island.

MR. FARLEY: Steve Farley with CH2M Hill.

MS. WELLS: Elizabeth Wells, Water Board.

MR. JESPERSEN: Cris Jespersen with Weston Solutions.

MR. HOLLINGSWORTH: Gil Hollingsworth representing the City of Vallejo.

MR. SILER: Neal Siler, Lennar Mare Island.

MR. GEMAR: Dwight Gemar with Weston.

MS. DREYER: I'm Marie Dreyer with the Navy.

MR. WITTENBERG: Howard Wittenberg with ERS.

MS. MOORE: Carolyn Moore, CDM.

II. PRESENTATION: *Polychlorinated Biphenyl (PCB) Program Update*
Presentation by Ms. Marie Dreyer (Navy) and Howard Wittenberg (ERS)

CO-CHAIR LEAR: Okay. So we can start our first presentation which is the polychlorinated biphenyl (PCB) program update. And this will be presented by Navy RPM, Marie Dreyer. And I believe Howard Wittenberg with ERS will also be assisting.

MS. DREYER: Yep. Well, thanks for the introduction, Janet.

So just a quick reminder, PCB stands for polychlorinated biphenyl. And to get started, I wanted to give everybody a quick overview of the PCB program. We run our program under the Toxic Substances Control Act [TSCA] Self-Implementing program. The specific code we run it under is there, 40 CFR 761.61. Basically under this self-implementing program we, as the responsible party, we the Navy, are given authority to dictate our cleanup actions so long as we're able to do so by abiding by the guidelines established under 761.61 under TSCA and in coordination with the EPA. Our cleanup goal for all our sites and for all media is one parts per million [ppm]. This is a base-wide program. The number of sites we have base-wide is seventy sites. I'll go into more detail as to what each of these mean, but basically of those seventy sites we have 32

that we believe are ready for closure, we simply have to submit a report to EPA to let them know we feel we've met our cleanup goal of one parts per million, and wait for their decision as to whether or not to give us a concurrence letter letting us know that, yes, we've met our cleanup goals. Nine of them we feel still need verification sampling. That is we are not sure of the status, whether they're ready to be closed or if they require some sort of fieldwork, so we'll be going out there and sampling further at those sites. Ten of them we do feel absolutely at this moment need more fieldwork, so whether it be some sort of abatement, and then following that up with verification sampling. Five of them we have found belong to another agency or are the responsibility of another agency, that agency being the Army Corps of Engineers. In the past the Army Corps of Engineers has demolished certain buildings that have been associated with PCB contamination, so we've searched our files to determine which those sites are, and we've been in communication with the Army Corps about them. And fourteen of the sites, and we're very proud of this, have been closed. Thirteen of which were closed this year.

CO-CHAIR LEAR: Marie, do you want to point out the --

MS. DREYER: Oh, right. Thanks. I'll be saying more about this figure later, but you do have a handout or you should have grabbed a handout at the table over there. There's an eleven by seventeen blowup of the figure. I know it's hard to see as it is right now on the screen. The properties --

CO-CHAIR HAYES: Marie, before you go any further.

MS. DREYER: Yes.

CO-CHAIR HAYES: Since I don't see it in, by jumping ahead in your presentation, can you tell us where these Army Corps places are?

MR. COFFEY: Which ones are they?

CO-CHAIR HAYES: It's not the Army Reserve, it is the Army Corps of Engineers?

MS. DREYER: Give me a second, let me grab my list. Let's see. And these sites are Building 597, 726, 930, and one more -- let's see.

MR. WITTENBERG: Actually, Marie --

MS. DREYER: Yeah.

MR. WITTENBERG: A few of those weren't added onto this figure, they're kind of recent. But the two of them that you will see is 597 and 930, and they don't have a highlight, they're just kind of whited out.

MS. DREYER: And also the other one, there should be one other one you do see. You should see 597, 726, and 930. Those all three should be there. And then the other two, they're not so much going to be transferred to Army Corps, per se, they're more in an unknown kind of status with us. We've added them to our program in preparation for researching them further, but we're not totally sure that they're Army Corps responsibility. One of them is A-271, and that was a recent addition as of June. One of our other RPM's on Mare Island, a former RPM on Mare Island pointed that out to me, so we're researching it further. She wasn't sure it was a PCB site, and it wasn't on my original list, but I've added it to research further. And the other one is Buildings 691, and that's within the DRMO fenced scrapyard area. And I don't believe that's on the figure. The reason it is not is because that building no longer exists, and all the surrounding

dirt around it because of the recent Petroleum Corrective Action that Weston helped us perform, all the surrounding dirt around it to a minimum of nine feet has since been excavated. So we don't believe there's a problem there anymore. We haven't yet presented all this information to EPA, but we plan to. And so that's how we plan on dealing with that particular site. So those are the five.

CO-CHAIR HAYES: So again the Army -- what you're saying then is that the Army Corps of Engineers has the responsibility to clean up the Army Reserve property? And that's why you're calling it out as an Army Corps project?

MS. DREYER: Right. I've been in contact with -- oh, his name is escaping me. Do you recall? His name is escaping me at the moment. But he, at least with those three buildings, 597, 726, and 930, he agrees that the Army played some role or played a role in demolishing that building; and so, therefore, any residual contamination that might still be there because of a leftover foundation or whatnot is their responsibility.

CO-CHAIR HAYES: I understand that. I'm still trying to clarify whether you're working with the Army Corps of Engineers as, I guess, a FUD site or what --

MS. DREYER: No.

CO-CHAIR HAYES: -- or the Army Reserve?

MS. DREYER: I'd have to get back to you. I don't recall his exact affiliation with the Army, whether it be with the reserve center or ACOE, but he is affiliated with the Army.

CO-CHAIR HAYES: Yeah. It probably would be a good idea to get back to us if you could.

MS. DREYER: Oh, yeah. If I had his business card, I actually might have his point of contact in my binder there. Can I finish my presentation and while Howard takes over I'll go ahead and find his contact info?

CO-CHAIR HAYES: Yeah, I'm just trying to, like, learn where these properties are and, you know, what they are, what the buildings are. Because I don't see it on your presentation. So thank you.

MS. DREYER: So moving on to describe what the PCB program we follow is, it's a six step process that we follow to characterize these sites and determine, you know, whether or not they're ready for closure or need more fieldwork. The first step that we do is characterization sampling. Basically in that step we determine if there is a problem. Is there contamination above the cleanup goal which, again, is one parts per million. And in that step if we do find contamination above the cleanup goal, then we move on to step two and we then submit a site cleanup plan for EPA review. After that site cleanup plan has been blessed by the EPA, then we'll go ahead and perform our fieldwork. And there's a variety of things that we perform during fieldwork. We'll either perform concrete scabbling. And scabbling is simply scabbling at the concrete little by little, in our case in half inch layers to remove the contamination. That's appropriate for small areas where the PCB contamination hasn't leaked all the way through the concrete. If it has leaked --

MS. TYGIELSKI: Is scabbling kind of like scraping?

MR. COFFEY: Chipping.

MS. DREYER: Chipping, yeah, that's it. Thanks, Michael. Yeah, it's more like chipping.

MS. TYGIELSKI: Thank you.

MS. DREYER: Oh, you're welcome. We actually have a photo of it later that Howard can review for you. Sometimes the contamination has penetrated through the concrete to a degree where concrete scabbling would not be beneficial. So we will do full concrete removal like you might have seen for Building 643 out there in Investigation Area A-2. We'll also perform soil excavation if it's needed, where we do something similar like scabbling where we remove in six inch layers. We'll also inspect all the vaults within the site just to make sure the PCB oils haven't somehow migrated into those vaults. And lastly, we'll take a look at any abandoned cable insulation. And if they're lying around like debris, then we'll pick them up and put them in drums. Or if they're within a pipe, then we'll go ahead and cut as much of it off as we can and cap that pipe. The fourth step is to perform verification sampling. That's to make sure that all of our fieldwork in step three has worked, have we met our one ppm cleanup goal. And the last step, assuming we do meet our one ppm cleanup goal, is to submit a site closure report to EPA. Then, of course, it's then up to EPA to review the closure report and get back to us and let us know if we've met the cleanup criteria under TSCA, and provide us with a closure letter for that site.

During our investigation of PCBs around the base we've determined that there are a couple sources of contamination. The primary one being PCB containing transformers. In the past transformer oil was used as a coolant, and PCBs were the favored choice since they were not flammable since these transformers could get pretty hot. Of course, it's been found since then that PCBs are toxic so the use of them has stopped. And in pretty much the majority of all of the transformers that have since replaced all the PCB filled ones on the base, they've all been replaced with dry type transformers so they no longer contain this PCB oil. Some secondary sources that we found and have also investigated are other oil filled electrical equipment such as grounded rocker arms. And these are essentially electrical panels that boats, when they docked, they would plug into and use as a power source. We found that these panels, per se, these rockers arms had trace amounts of PCB oil that were above one parts per million, so we have investigated those. And lastly is cable insulation. Per the request of EPA, we did go out and sample cable insulation within the sites that we have already closed within Investigation Area A-2. And we actually found that this goes the other way -- that there wasn't a significant pathway there for contamination. Cable insulation under TSCA is defined a little differently than all the other PCBs. It's defined as a bulk product waste and, thus, is subject to a different cleanup goal. It's subject to a fifty parts per million cleanup goal. And the highest concentration that we found was 47 parts per million. And the second highest we found was 11 parts per million. So it really wasn't a source of contamination -- oh, sorry, let me back up. The reason that EPA first brought up cable insulation is Carolyn [D'Almeida] specifically brought to our attention that the insulating material might have been made with PCB oils, so she wanted us to check on its --

MR. COFFEY: Toxicity.

MS. DREYER: -- its, you know, its parts per million value. So we did. And, like I said, the highest we found was 47, so --

MS. TYGIELSKI: Well 47 is definitely bigger than fifteen.

MR. COFFEY: 11.

MS. DREYER: 11. Right. But we only found it in one location, and it's still below fifty parts per million which is the cleanup goal. But as I said prior in this slide, one of the things we have been doing with the abandoned cable, even though it is below the cleanup goal, is we've been scooping them up and putting them in drums. So we have been removing them from sites, we haven't just been leaving them there. But just to let you know, it is below the cleanup goal.

I spoke a little earlier about site cleanup plans in slide three, and so I just kind of wanted to let you know what goes into them. We first submitted in May, 2009, a Final Abatement Work Plan for all the sites. This encompasses the general type of methods we were going to use in order to clean up our various sites. Since then we've been submitting individual site cleanup plans specific to sites that require additional fieldwork. And those site cleanup plans or SCP's include -- or the bulk of the report includes, the introduction, what is the site, what are we trying to do, background, nature of contamination. The previous sampling that's occurred there. Because of the previous sampling, what kind of contamination we expect to find. Our proposed cleanup plan. And our exit strategy and schedule. To date we have submitted all the SCP's except for these five sites. Three of them we plan on submitting this next year, and then the next two after that.

Our fieldwork progress. So we'll take out your handout, I'll show you which color these areas are referring to. Investigation Area DRMO is that one site that I spoke about where, again, it's been demolished, and all the surrounding earth or soil around it has been excavated down to at least nine feet, if not more, in many areas. That's not listed on your figure but, again, we expect to just, to be able to inform EPA of what we've found, and should be able to close off that site.

Investigation Area A1 is on your figure, it's in light blue at the top part of Mare Island, the northern part. In that site we've already closed one site and you see that in yellow, Building 1001. And two sites we feel are ready for closure and we'll be submitting those closure reports to EPA shortly.

Investigation Area A-2, this is our gold star for the year. We were able to close thirteen sites this year under TSCA, of course with EPA's blessing. So all the Investigation Area A-2 sites that you see in yellow in the upper part of your map, all of those have been closed.

Investigation Area C-1 is in the pink part in the middle of your map. The only site there is Building 163. The EPA currently has our Draft Closure Report, and we should be expecting comments soon. Let's see, C-1.

Investigation Area C-2 is in the, I guess light salmon colored area on your map right in the middle of your map. There are four sites there. Two of them we feel are ready for closure. One we need to do a little more investigation. And one site, Building 597 which does not have a color, is one of the sites that I discussed earlier which the Army said they would take responsibility for and submit their closure report forward to EPA. Investigation Area D, which is in green, also in the middle of your map. There's one site there ready for closure. And two more that we've spoken to the Army about, and they said they would take responsibility for those two.

In Investigation Area F1, that's in the pink area down at the bottom, toward the bottom of your figure, that has a lot of sites in it, 28 sites. Fortunately eighteen of those are ready for closure and we'll be submitting those probably not this calendar year, but next calendar year -- not in calendar year 2011, but in calendar year 2012. One site we need to find out more information about, that site A-226. Eight sites which we know already will require more fieldwork. And one

site which we need to learn more about, which I mentioned earlier, which is the site that the former Mare Island RPM, Jackie Dunn, if you remember her, has let me know about so I'll be investigating that one further.

Investigation Area A-2 is in green right above the pink area of F1. That has four sites. One site ready for closure. Two sites which we need to know more about. And one site that definitely needs fieldwork completed.

Investigation Area G is the very bottom area in this light tan color. Six sites there are ready for closure. Five sites we need to do more sampling. And then in Investigation Area I, finally, right back at the top, it's the light purple, there's two sites there. One site is ready for closure. We have the draft closure report ready to go, we just need to submit it to the EPA. And one site where we need to do more fieldwork.

So our next milestones in this upcoming year in 2011, EPA currently has these two draft closure reports, Buildings 61 and 832. We're awaiting her initial comments on them before we make those reports final. Our next site closure reports to be submitted are Building 517 and 505B. Our next sites scheduled for fieldwork are 505A, 782, 900, and 1300. And we have now 28 internal draft site closure reports ready and will be submitting them to the EPA in manageable batches. She's requested that we send them in batches of five or something manageable so we don't overload her with all 28. So that's our plan. And now I'm going to have Howard come up so he can discuss with you more specifics about the various fieldwork techniques we've used to clean up our sites.

CO-CHAIR HAYES: If you could just stay there for a minute?

MS. DREYER: Sure.

CO-CHAIR HAYES: I'm having to jump back and forth here, maybe because I'm not too cool, too smart, but I'm just trying to find what a SCR is.

CO-CHAIR HAYES: Site cleanup report.

MR. COFFEY: Closure.

MS. DREYER: Closure report, I'm sorry. That's on slide number three.

CO-CHAIR HAYES: It would be good if you could, you know, really work on not using acronyms so we don't have to go back and forth and try to remember.

MS. DREYER: So let me just be clear, Myrna. Every time there's an acronym you want it written out or you want it written out the first time?

CO-CHAIR HAYES: Yeah, if there's room. If there's room, you know.

MS. DREYER: Cause what we try --

CO-CHAIR HAYES: Acronyms just aren't really useful.

MS. DREYER: What we try to do is write them out the first time and then we use the acronym throughout the presentation.

CO-CHAIR HAYES: Sure, I know that's exactly how you do it, and I just ask for you not to do that.

MS. DREYER: I didn't realize that's how you want it. I'll make note of it and do it next time.

CO-CHAIR HAYES: Yep, it's been that way for how long, Paula?

MS. TYGIELSKI: I don't know, but acronyms have been an issue in RAB since the beginning.

MS. WELLS: Restoration Advisory Board.

CO-CHAIR HAYES: Right, there you go, yeah, Restoration Advisory Board. Usually I just think it's a good practice when you're working with the public, especially new people, even me obviously here, if you have the room on a page, just go ahead and use the whole name.

MS. DREYER: Okay. No problem.

CO-CHAIR HAYES: If you guys want to have a secret code amongst yourselves, like ERS or something like that, you know, I think that's great.

MS. DREYER: Okay.

CO-CHAIR HAYES: But it isn't really too useful to have to jump back and forth.

MS. DREYER: Sure. Will do. What was your next question?

CO-CHAIR HAYES: And then site closure report.

MS. DREYER: Yes.

CO-CHAIR HAYES: On just looking at the one 505B.

MS. DREYER: What slide are you on?

CO-CHAIR HAYES: Number nine. I'm just trying to catch up with you here then, where these properties are. And --

MS. DREYER: You want to know where 505A and B are?

CO-CHAIR HAYES: No, I know where they are. I'm just trying to find out, okay. Now, milestones in 2011, site closure report. Does that mean that you will complete these reports for EPA review sometime in 2011 or by when in 2011?

MS. DREYER: Sometime in 2011, but it will likely be the first quarter since they are ready for submittal.

CO-CHAIR HAYES: Okay. And then my other question is, going back to your slide on page eight, fieldwork progress continued. You have Investigation Area G has 11 sites, and you have six sites that are ready for closure. And then there are five sites that require verification. And I wanted to be clear, I thought that I heard you say that you were not going to be working on those until 2012?

MS. DREYER: I believe so. You know, at this point we're having a little bit of problem funding the compliance side of the house which is where PCB work falls under. So the reason I show only a very limited number of sites on slide nine, which is titled "Next Milestones in 2012" is because of that very issue.

CO-CHAIR HAYES: 2012?

MS. DREYER: We're trying to figure out what we can do with the funding we have, and this is what we expect to be able to accomplish in 2012.

CO-CHAIR HAYES: In 2011 or --

MS. DREYER: In 2011.

CO-CHAIR HAYES: So you're pushing those five sites out based on problems with funding to 2012?

MS. DREYER: Perhaps. At this point, Myrna, honestly I can only say perhaps. If some extra money does come down for compliance specifically, then we can accomplish some of these in 2011. But for right now it's not looking like that. So to answer you, perhaps in 2012, hopefully sooner.

CO-CHAIR HAYES: All right. Well, the reason I'm asking that is because A44 jumps out as a -- one of the houses in the ordnance workers housing area. And I'm continuing to be concerned, and I'll go on the record here saying that the Navy has held those houses now since 1996. And, you know, with a lot of jumping up and down we were able to get some new roofs on them. But I've been with the CSO's office for various reasons on that property, and those houses continue to concern me, and they do other people can see them through the fence, in terms of the amount of investment the Navy's made on the CSO side of the house -- that's an acronym for caretaker's site office. And I don't see how the environmental side of the house can hang up the cleanup of that property and the transfer. A year ago almost in January, DTSC, the Department of Toxic Substances Control was able to work with the Navy to generate a memorandum that concluded on all parties part that there was no concern for munitions on that property, which was the major concern. So by delaying the required work on this building, this one building in that complex, the Navy is preventing, you know, making one more way to prevent the transfer of those houses.

And I think that the environmental team and the property protection team should probably come and do a presentation or do a site visit and help the public understand why these properties are still sitting there being allowed to deteriorate. And then come up with a plan. You know, we've talked about things like transfer -- lease arrangements, something where we can start getting some money being put into those houses, at least some evaluations on them. The paint's coming off, you've got, you know, more and more lead in soil issues. Something needs to happen with those properties besides just sitting there deteriorating. They are on the National Register, they are National Historic Landmark contributors, and I don't see that that's a good use of a resource that the Community of Vallejo is going to be receiving sometime, and the State of California from the Navy. By the time those properties get transferred, they'll be in progressively terrible shape. And if the environmental cleanup program could expedite the transfer of that property, I would very, very much be grateful, and I know other people would as well.

CO-CHAIR LEAR: I think there's much bigger issues involved here than the PCB problem with the A44, but it's probably a topic that we need to set up a time to talk at a later time.

CO-CHAIR HAYES: Why don't you go ahead and tell us what that would be?

CO-CHAIR LEAR: It's more of a real estate issue, a real estate transfer issue. And I'm not prepared to discuss it at this moment, but I will definitely get with the right people and we can take it up at a later time.

MS. DREYER: Any more questions before I transfer it over to Howard? I will get you that name, Myrna, I'll look it up right now.

CO-CHAIR HAYES: Okay.

MS. DREYER: Okay. Here's Howard Wittenberg.

MR. WITTENBERG: Hello.

CO-CHAIR HAYES: Hello.

MR. WITTENBERG: Okay. Going back to our six steps. This is a characterization sample. This is how we prepare the sample. The lab requires it to be kind of like more of a powder. We can't just give 'em rocks, so we have to use a hammer drill with a special attachment, sit there and bang on the area until we get it fine enough to collect. And this is how we collect them.

MR. COFFEY: Nice seating arrangements, sitting on a bucket.

MR. WITTENBERG: Actually we prefer them to be sitting when they're doing that because it's better on their back. So this is --

CO-CHAIR HAYES: Does the person, do they have to wear respiratory here?

MR. WITTENBERG: No. No, they'll use the dust mask for nuisance dust, but no, they're not required to use the respirators. Here's one of our staff who's collecting the sample at Building 505B which is up in Investigation Area I. Not much to it, you scoop it up and put it in a jar and put it on ice. You change your gloves between samples, all that good stuff.

MS. TYGIELSKI: That's good, changing the gloves, you don't want to mix the samples together.

MR. WITTENBERG: Yeah, we're really sensitive to cross-contamination. We decontaminate our sampling unit every time before we move onto the next sample.

Soil removal. This is just one of the abatement techniques that we have to use. You know, we talked about it a little bit earlier. I didn't bring one of the concrete scabbling, for some reason we chose removal, I think we used scabbling last time. Scabbling though is essentially, it looks like kind of like a lawn mower, it's got teeth on it, needles that kind of just penetrate the ground, then it just takes off small layers of it. Here though we have soil removal at Building 832, we had to excavate a couple of feet there.

The next site is Building 163. This was our biggest challenge. Off to the right of the picture behind the fence there's a vault there and it had high voltage live power. So as part of the remediation we had to remove the vault, it had extensive contamination. So the first thing we had to do was get the power out of there. So we rerouted the power on the outside of the building and ran it back in. And that was how we had to get access into the vault safely. And that was our only site in C-1 was that one. And that's it for the pictures.

CO-CHAIR HAYES: Maybe I didn't understand in your presentation why you retained some of these sites rather than transferring them to Lennar because that looks like Lennar property.

MS. DREYER: Yeah. During the transfer with Lennar, which I wasn't around for, it happened back in 2001, there were certain sites that were considered Navy retained conditions with known conditions; specific to PCBs, that was Building 163 and 832. So I don't know the specifics, Myrna, as to why those two in particular were retained. Obviously they're the only two in the area that weren’t transferred so -- and with known contamination, known PCB contamination. Unfortunately I do not know the specifics as to why they're retained other than they've always been called Navy retained conditions, and we have taken action to complete the cleanup on those two. Those are the two sites, as you might recall earlier, that we've completed our cleanup on and have submitted draft closure reports to the Environmental Protection Agency. I did get the

name for you, Myrna. His name is Stephen Volk and I don't have his official title written in my address book here, but he does have a U.S. Army Reserve e-mail address.

CO-CHAIR HAYES: Oh, Reserve, okay.

MS. DREYER: So it is Reserve.

CO-CHAIR HAYES: It just sounded weird that the Corps was doing the work.

MS. DREYER: You know, when speaking to him because demolition is a Corps responsibility, they were involved somehow, but this specific gentleman that I have been in contact with is with the Reserves.

CO-CHAIR HAYES: Okay.

MS. DREYER: I'm sorry. Any other questions? Thanks, everyone.

III. PRESENTATION: *Upcoming Remedial Work at Installation Restoration Program Site 15 Investigation Area C1*
Presentation by Mr. Steve Farley (CH2MHill)

CO-CHAIR LEAR: Thanks, Marie. Thanks, Howard. And our next presentation by Steve Farley is Upcoming Remedial Work at Installation Restoration Program Site 15 in Investigation Area C-1.

MR. FARLEY: Good evening, everyone.

CO-CHAIR HAYES: Good evening.

MR. FARLEY: Don't think there's any acronyms in good evening, everyone.

CO-CHAIR HAYES: The PG.

MR. FARLEY: That's right. What does it mean?

CO-CHAIR HAYES: Professional geologist.

MR. FARLEY: Myrna reports that it is professional geologist. So we're going to talk about IR Site 15. Let me give you just a quick overview on the materials that you have with you. You have the handout which we're going to go through. There's also an eleven by seventeen handout that we may want to refer to. Not that one, the other one. That's a good point, Paula. There's actually two eleven by seventeens, the one that says IR-15 on it, not our normal handout. What you want is the one that Paula's got. Okay. So for those veterans that have been around for a while. If you recall in December 3rd of 2009, we gave an update to the Restoration Advisory Board on the Installation Restoration Site 15 Feasibility Study Remedial Action Plan and at that time we gave the update on the FS/ RAP for the work that was planned to be implemented. We have since gone through a series of steps and we're now at the point of preparing a document that's called a Remedial Design Work Plan. It's also referred to for tonight as an RDWP. The Remedial Design Work Plan contains the details of the remedy that's going to be implemented. That's the document that we're talking about tonight.

Here's our agenda for tonight. We'll go through real quickly a site description. A lot of people here know IR-15 fairly well, but we'll cover some of the basics. We'll talk about what's going to be implemented. The constituents of concern, those are the things that are going to be addressed in the remedy. We'll talk about the remedial action objectives, why are we doing something. The cleanup goals. Then we'll go into the actual remedy that we're going to implement. And

then we'll talk about the schedule. By the way, this is a very interesting site, so I hope everybody enjoys it.

As I mentioned a few minutes ago, there's been a series of activities, the presentation to the Restoration Advisory Board back in December of last year. The public meeting for the FS or the Feasibility Study/ Remedial Action Plan was held on September 8th. I brought an extra copy of that presentation if anybody's interested in taking a look at it. I also brought a copy of the presentation from the Restoration Advisory Board meeting from December of last year. The agencies signed the final Feasibility Study/ Remedial Action Plan in November. We're now working on this document called the Remedial Design Work Plan or the RDWP. And we've gone through one cycle of review by the agencies, and we're preparing the final version that we expect to get to the agencies fairly soon.

IR-15. If you look on the east side of the island, it's right along the shoreline in area -- Investigation Area C-1. It's just north of the ways. Here's some of the main features for IR-15. This is Building 225. If you look on the handout I gave you, there's some more information. This is Building 225 right here. These blue lines are the Installation Restoration Site 14. That's the old industrial waste line system. The USTs you can see right here, the underground storage tanks tied into that, as did all the other activities that occurred in these buildings. These buildings were used for electroplating. The electroplating process uses solvents to clean the metals, and then chromic acid to actually --

(Thereupon a phone began ringing.)

MR. FARLEY: Excuse me, could everybody turn their phones off?

CO-CHAIR HAYES: I turned it off once today.

MR. FARLEY: So these buildings were used for electroplating, they used chlorinated solvents, in this case tetrachloroethylene or PCE. And then the Navy used chromic acid to do the actual plating of the metal.

MR. COFFEY: Did you spill it all over the place?

MR. FARLEY: It leaked. The primary sources are inside Building 225. We also found some carbon tetrachloride and some hexavalent chromium inside Building 101 as well. There were some dipping tanks in that building that stored some of these constituents. We didn't find any carbon tetrachloride over in this area, it's only association with Building 101. Paula, did you have a question?

MS. TYGIELSKI: What did you say the blue lines were?

MR. FARLEY: That's called industrial wastewater -- or industrial wastewater pipeline system.

MS. TYGIELSKI: Okay.

MR. FARLEY: On the bottom of the figure it shows, I believe it's got IR-15, does it not? IR-14. So the blue lines are the old industrial wastewater system that pumped all the Navy's waste out to the industrial wastewater treatment plant out on the east side of the island -- or west side of the island, excuse me. Here's a photograph of the IR-15 area. Here's the building numbers, 273, 101, 165. Building 225 is in the back, you can't see it from this angle. The very southern end of Building 69 is here. The groundwater flows basically from this side of the buildings and flows

out towards the strait. The strait is basically right over here, fundamentally parallel to these tracks, but about another forty or fifty feet to the east of this alignment.

Here's a quick summary of the structures and the uses. I don't think we need to go through this in detail. But basically it's a chrome plating shop, lots of solvents and lots of chromic acid. And Paula, to answer your question before, here's the IR-14 definition on the bottom of that slide.

MS. TYGIELSKI: Okay.

MR. FARLEY: Following all the investigations, constituents of concern by media -- by medium, technically -- were identified. For soil the two constituents of concern were lead and cadmium. And we'll get to it in a second, but just to give you a quick preview, the lead and cadmium are a problem inside Building 225. The rest of the constituents of concern are for groundwater and they're these constituents here. Tetrachloroethene [PCE], trichloroethene [TCE], cis- and trans-1,2- dichloroethene [DCE], and then vinyl chloride. And the easiest way to think about this is this has four chlorines on it, three, two, one, okay. Excuse me -- four, three, two, and then one. So those are called chlorinated ethenes. We also have carbon tetrachloride and hexavalent chromium. Hexavalent chromium is the most common constituent between the different buildings. The chlorinated solvents here, or the chlorinated ethenes are the ones that are the most widespread. Remedial action objectives or RAO's are statements of what you're going to achieve by implementing the remedy. And so there are five remedies or RAO's rather -- am I humming here?

MR. COFFEY: It's your magnetic personality.

MR. FARLEY: Thank you, Mike. There are five remedial action objectives, three are for groundwater and one is for soil. RAO number two is for soil, it's for the lead and cadmium in the building. The other RAO's are for groundwater. And most of them involve PCE and its breakdown products. And those breakdown products are these constituents here. So the reason that vinyl chloride and the DCE's and the PCE's exist is because PCE was released to the subsurface, and just through normal degradation processes, biologic activities, the chlorines basically get plucked off one by one. And actually that's sort of a preview to the remedy, so keep that in mind. If we were to go through this in great detail, what you would find is that the -- there's two main drivers for doing the cleanup. One is human health, the other is to protect the beneficial uses for groundwater as recharge to the strait. And the main driver there is protecting the aquatic receptors that are in the strait. So that applies fundamentally to both the chlorinated ethenes and the hexavalent chromium. The last RAO here, it doesn't have a matrix, it says that we need to restore the site so that it can be used, which is, I think, fairly obvious. So here are the cleanup goals.

This is for soil, and it's only pertinent to Building 225. 320 milligrams per kilogram [mg/kg] of lead, and 7.5 milligrams per kilogram for cadmium. This number, by the way, is just about at the background number. I think this may actually be background for Mare Island.

The groundwater cleanup levels are a little more complicated. There are aquatic habitat based criteria, and there's human health based criteria. Within the aquatic habitat, these are the numbers that are considered protective of aquatic receptors in the surface water at the strait. So when you get close to the strait, these are the numbers that would apply. In particular, the case of carbon tetra chloride and hexavalent chromium, you can see there's no human health based criteria because of the concentrations and the health based criteria, but the driver for hexavalent

chromium and carbon tetrachloride are the aquatic habitat criteria. For human health there are two fundamental characteristics of the site that drive the appropriate cleanup levels for IR-15. And that is an area where the utilities are deep and other areas where the utilities are relatively shallow. The main importance of that is that when you have an area where there's a deep utility and workers have to go down into that, a trench associated with that utility, they may become exposed to more of those constituents than if it was a shallow utility. So it's driven by the utilities. And if somebody has to go into a deep trench, the levels need to be lower than if it's a shallow trench.

MS. TYGIELSKI: Yeah, I was wondering what you meant by utility.

MR. FARLEY: A pipeline, like a sewer line, a water line, electric utilities.

MS. TYGIELSKI: Okay.

MR. FARLEY: Those kinds of things.

MR. COFFEY: Corridors.

MR. FARLEY: There are a lot of utilities that are never going to be used again. The saltwater pipeline is never going to be used again. The fuel oil pipelines are never going to be used again. So when we refer to deep and shallow utilities, we're talking about the utilities, electric and gas, those type of things that will be part of the normal development of the island. All the utilities that feed your house basically, or houses for those who are fortunate. You notice I said those.

Based on the site conditions, the constituents, the historic uses, the remedial action objectives, the cleanup levels, the next step is, well, what are we going to do about it? And part of the what are we going to do is -- involves all of these different activities. We have to be aware of excavation hazards, what kind of sampling we're going to do, air monitoring, dust control. All of these activities become part of, not only the remedy, but also part of the evaluation of what remedies are suitable for the site. Through the Feasibility Study/ Remedial Action Plan process, there were seven different alternatives that were put together, and through the standard criteria, implementability, cost, those criteria, nine criteria, alternative six was selected.

Let me give it to you in a nutshell. Going to go into Building 225, we're going to dig up the soil that has concentrations of lead and cadmium above cleanup levels, and then we're going to cap the floor. Now, inside Building 225 there are some structural considerations. That building has got a lot of footings, and it's a relatively old building, but it's also a historic building, so there has to be a lot of care taken in what we can do in there. But simplistically, we're going to dig up the soil in a few areas, we'll get to the exact areas in a moment. For groundwater, the remedy is -- and let me have you refer to the handout. There's a copy of the handout in the presentation, but it's really a placeholder. This is the figure that I wanted you to take a look at. You'll see that there are three or four different colors on there, yellow, sort of pink, green, a brown line, and then a dashed green line. Those represent different areas where different kinds of remedies are going to be implemented. The labels or the titles in this column here, dilute plume, plume core, hot spot, and near shore, all of those areas are defined on that figure. So, for example, the dilute plume area is the area that's outlined in the dashed green line. It's the broadest line. Does everybody see that? Anybody having trouble finding it?

MS. TYGIELSKI: Okay.

MR. FARLEY: The plume core, if you look at the plume core it's the pink area. The hot spot area is the green area, the solid green area. And then the near shore area is the yellow area. So it's important to understand all these geographic relationships because the remedy had to be constructed in a way that accommodated a bunch of subsurface conditions. And one of the most important one is the subsurface wharf structure that's out there. And I think a lot of folks know about that. There's an old wooden wharf that's out there that's supported on piles. It supports other current utilities, electric duct banks and such. And there is also the tiebacks, and I've got some information for you here on that. There are tiebacks that tie the quay wall into the ground so that the quay wall doesn't go plunk into the strait. Those are very, very important considerations for the design and the construction of the remedy.

So here's what's important; hexavalent, carbon tetrachloride, and chlorinated ethenes. In the dilute plume area, the remedy is monitored natural attenuation. Let me give you a simple example. Hexavalent chromium is not stable in normal groundwater systems, those like here at Mare Island. Hexavalent chromium, the only reason it's in the ground right now is because it got released from these tanks. As the hexavalent chromium moves with the groundwater, the hexavalent chromium gets reduced to trivalent chromium. The reasons for that are -- well, it gets into EH and PH diagrams and redox potential and those kinds of things. But basically, hexavalent chromium is not stable in the groundwater system out here. So as the groundwater with the hexavalent chromium moves toward the strait, the hexavalent chromium gets converted to trivalent chromium relatively quickly. And, in fact, the hexavalent chromium gets reduced to trivalent about when it hits Building 273, so relatively fast.

The chlorinated ethenes in the plume core, the pink area, there's going to be what's called a permeable reactive barrier. A permeable reactive barrier. Think of it as a wall on the order of three feet wide, and the length of that brown line on the handout that is filled with a mixture of sand and zero-valent iron [ZVI]. The interesting thing about zero-valent iron and chlorinated ethenes is once they mix, the iron actually plucks the chlorines off of the ethenes. It's a pretty fascinating chemical reaction. But the permeable reactive barrier is there to protect the strait. We would have liked to have constructed that closer to the strait, but the wharf structure that I talked about a moment ago prevents us from building it any closer. And, in fact, because of that, this near shore area, we're going to use what's called enhanced in situ bioremediation or EISB. And what that means is we're going to -- and I'm simplifying it here -- but we're going to inject cheese whey and/or vegetable oil into the subsurface -- you may not believe it -- into the subsurface. What that's going to do is it's going to cause the natural bacteria that are in the subsurface to grow. Those bacteria then will also cause the dechlorination of the chlorinated ethenes. So if you were to simplify this. On the figure that you've got, the green area, the pink area, and the yellow areas are going to be treated to enhance the amount of bacteria to cause the dechlorination of the ethenes. The permeable reactive barrier is there to also protect the strait from chlorinated ethenes that are upgradient to the strait. Remember the groundwater moves -- for that figure it moves from the green area, past the wall, past the yellow, and into the strait. Once the remedy -- Myrna.

CO-CHAIR HAYES: Is it in the strait now? Or is it just migrating and that brown wall is going to stop it?

MR. FARLEY: We don't have any measurement data to show it's in the strait. It's in the groundwater upgradient of the strait, but we don't have any information that says in the strait. And I --

CO-CHAIR HAYES: How close to upgradient?

MR. FARLEY: Probably 40 feet or so.

CO-CHAIR HAYES: And you can't get any closer samples?

MR. FARLEY: Yeah, there's so many different structures in the way. You know what it's like, the bollards are out there --

CO-CHAIR HAYES: I do.

MR. FARLEY: -- and all that stuff.

MR. COFFEY: It's a mess.

MR. FARLEY: As part of the actual remedy there's what's called institutional controls. In this case the institutional controls are to prohibit the disturbance of the soil capping inside Building 225. Restrict sensitive uses. The sensitive uses are things like residential use, daycare centers, schools for children under eighteen years old. Those kinds of uses. Simplistically what it means is the property can be used for nothing more restrictive than a commercial industrial, which is what 99 percent of the -- well, which is what most of the industrial core is at Mare Island. And then the other requirement is that the permeable reactive barrier, which will stay for as long as it needs to, but it can't be disturbed nor can the groundwater monitoring network be disturbed without prior approval from DTSC.

So here are the five areas where the soil removal is going to occur. These are five hot spot areas. Each of those is expected to be on the order of six feet by six feet square and about four feet deep. That's based on existing data we've got now. When we get out there and do the excavations we'll collect confirmation samples and compare them to the cleanup levels. Once this is all done, they'll be capped.

MR. COFFEY: With?

MR. FARLEY: Concrete. For groundwater it's a little more complicated. There are existing monitoring wells, there are existing injection wells. These injection wells were used for one of the pilot studies that we did a couple of years ago. There's going to be new remediation wells, new process wells, temporary injection borings, injection and extraction wells, permeable reactive barrier, and groundwater monitoring. All of these things are going to fit within the area that we talked about right here.

So let's talk about these. Now, again, this is not intended to be readable, it's just something I wanted to throw in here. I want to really focus on the handout because I would have never been able to fit this at the scale that we need to. So the very first thing -- not the very first thing. Let's take it into pieces here. We're going to construct the permeable reactive barrier, the brown line on the figure. We'll dig a trench on the order of three feet deep, and something on the order of about 30 feet deep. That --

MR. COFFEY: Three feet deep, 30 feet deep?

MR. FARLEY: 30 feet deep. Did I say --

CO-CHAIR HAYES: Three feet wide?

MR. FARLEY: Three feet wide, 30 feet deep. Did I say it the other way around?

MR. COFFEY: You said deep deep.

MR. FARLEY: Deep deep?

MR. COFFEY: Deep deep.

CO-CHAIR HAYES: Yeah, deep deep.

MR. FARLEY: I just wanted to make sure you heard.

CO-CHAIR HAYES: We're listening, we're all ears.

MR. COFFEY: Deep deep.

MR. FARLEY: So the -- that's a good one, I haven't thought about Roadrunner in a long time.

MR. COFFEY: Deep deep.

MR. FARLEY: The permeable reactive bearer will be filled with a mixture of the zero-valent iron and the sand. That material will be placed upgradient and down gradient. So in the area shown in green and pink and in the yellow area there will be some temporary injection borings installed. And into those injection borings will be injected some additional of the ZVI, the zero-valent iron. So that material is going to be injected in these areas that are colored as well as in the PRB or the permeable reactive barrier.

MR. COFFEY: And this changes the what? It evolves the materials that are there.

MR. FARLEY: Yes, that's right. And in fact, the ZVI is actually another layer of protection that we've decided to add to the remedy so that we can get essentially, we can get some additional and different kind of chemical reaction going on. Paula.

MS. TYGIELSKI: Am I understanding ZVI -- zero-valent iron, as iron filings?

MR. FARLEY: That's right.

MS. TYGIELSKI: Okay. Why don't you just call 'em iron filings?

MR. FARLEY: Zero-valent iron filings.

MR. COFFEY: Wow, that's evil.

MR. FARLEY: Why didn't you ask that question.

CO-CHAIR HAYES: Because she's the chemical teacher, the chemistry teacher.

MR. FARLEY: She's the technical committee.

MR. COFFEY: I'm so confused.

MR. FARLEY: Okay. Is everybody with me so far?

MR. COFFEY: You lost me at FOPL.

MR. FARLEY: In the yellow and green areas we're going to install some remediation wells, and into the remediation wells we will inject the cheese whey and/or vegetable oil.

MR. COFFEY: Cheese whey.

MR. FARLEY: Cheese whey.

CO-CHAIR HAYES: Whey?

MR. FARLEY: Cheese whey. And once that -- really, yes.

MS. TYGIELSKI: Cheese way?

CO-CHAIR HAYES: Not W-A-Y, W-H-E-Y.

MS. TYGIELSKI: As in Little Miss Muffett and her curds and whey?

MR. FARLEY: Yep.

MR. COFFEY: It's camembert.

MR. FARLEY: And what that basically does is it provides a carbon substrate for the in situ bacteria to grow. When they grow, they actually dechlorinate the ethenes. So that process is a biological process, the reaction between the chlorinated ethenes and the cheese -- or the iron filings to use Paula's term.

MS. TYGIELSKI: Where are these being put, the cheese whey?

MR. FARLEY: Into those green and yellow areas. So in the case of the iron filings, that is a chemical process. In the case of the bacteria, it's a biological process.

MS. TYGIELSKI: Okay. And that's -- the whey, the cheese whey is actually feeding the bacteria?

MR. FARLEY: It's feeding the bugs.

MS. TYGIELSKI: So the bacteria colony grows and takes care of the hexavalent, makes it go down to trivalent. Okay.

MR. FARLEY: That's right, Paula. Very well put. Very well put.

MR. COFFEY: Gold star.

MR. FARLEY: So that's the big picture of this. Now, we can go into a lot of details but it would go on forever. Does anybody have any questions about the basics of what I've talked about so far?

CO-CHAIR HAYES: What's it going to do to poly vinyl chloride or vinyl chloride, what's it going to do to that?

MR. FARLEY: It's going to dechlorinate that as well.

CO-CHAIR HAYES: Because wasn't that your big concern was how it was doing something and ending up like some bad stuff?

MR. FARLEY: Yes, the vinyl chloride is the last step before it goes to ethene, which means no chlorines at all. So that last step is the thing, for two reasons; our concerns are it's, A, the last step, we gotta get there; and B, we don't want it to hang up there. So that's why we're going to do some monitoring, not only groundwater monitoring, but also monitoring of the total organic carbon concentration so we know if we need to do some more amendment concentration, some more cheese whey versus vegetable oil. And the cheese whey versus the vegetable oil, the cheese whey has a more rapid rate of dechlorination. The vegetable oil has a more drawn out life, and so it dechlorinates less quickly, but it will give us a longer time frame for the dechlorination to occur. So it's sort of a buffer after the spike of the cheese whey is behind us.

CO-CHAIR HAYES: So you're going to use both?

MR. FARLEY: We're going to use both. Yeah, and what we'll -- let me rephrase that. The plan right now is to use both. But once we see the reactions are and what the concentrations are doing, we may elect to do one or the other based on the data at that time. And what we'll be looking for here is the concentrations of all of these chlorinated ethenes aren't all going to go down at the same time. As the tetrachloroethene goes down, the trichloroethene would go up. As the trichloroethene then starts going down because the parent product, the PCE is gone, then the DCE will go up. So what you'll see is you'll see the parent product go down, the daughter product will go up, then it will degrade and the next one down, the sequence will go up. And so, as you get to the end process, the previous parent product, if you will, will degrade, and you'll have the daughter product, and then the goal is to be at the cleanup levels. But what that means is most of the mass is going to go to ethene.

MR. COFFEY: Aren't ethenes evaporative?

MR. FARLEY: Yeah. Yeah. But it's --

MR. QUIGLEY: Do they know how many years this is going to take?

MR. COFFEY: Longer than you're going to be alive, buddy.

MR. QUIGLEY: That's what I figured.

MS. TYGIELSKI: It might be actually quick.

MR. FARLEY: You know, we did some pilot studies, we did two of them. And we got very, very rapid dechlorination of the PCE and the TCE.

MS. TYGIELSKI: Chemical reactions can happen real quick.

MR. COFFEY: But the ethenes afterwards are a whole ‘nother step.

MR. FARLEY: The ethenes are not a problem. The ethenes are not a problem. The ethenes are where we want to be.

CO-CHAIR HAYES: How have you calculated that this is going to reach all of the area within your cleanup boundaries? The whey and the --

MR. COFFEY: How it's going to eat up the plume?

CO-CHAIR HAYES: Yeah, I mean the --

MS. TYGIELSKI: What do the bacteria do?

CO-CHAIR HAYES: How deep does -- I mean how do you know that you're getting the bacteria food deep enough and distributed broadly enough to achieve your goal within that entire -- --

MR. COFFEY: In the right concentrations.

CO-CHAIR HAYES: -- cleanup area, deep and wide?

MR. FARLEY: First of all, we have years and years of groundwater monitoring data. There are many, many wells out here. In part because the system is so complex there's, we believe there's dense non-aqueous phase liquids, or DNAPL in some small areas. We've done two pilot studies now that show us the kinds of -- I was going to call them bugs -- but the kinds of bacteria that are there, and what bacteria makes sense for us to try and target to make sure that we've got enough substrate, enough total organic carbon for them to eat. We're going to put in the injection wells,

and the injection borings so that we get down below the level where the existing data show us the mass, that the greatest mass is. And that's based on monitoring wells that are all different depths out there. We have wells that are very shallow, wells that are deeper, we have wells down in the bedrock. And it looks like -- in fact, if we go to the next slide, and I'm answering your question, Myrna, so bear with me. If we go to this slide, this shows a cross-section of those same areas that we looked at in that eleven by seventeen handout. To try and answer your question, Myrna, this is the permeable reactive barrier. This is looking into the north, the strait's over here. And so if you look at the chemistry -- the groundwater data, what you'll find is this grouping of wells right here, right in this area, are the places where we have the highest concentrations. So these areas here are upgradient of that permeable reactive barrier. It's also defined on the figure as being the plume core or the hot spot area. And so the goal is to go down and get to a zone below where we have the highest concentrations. And we'll be using field instruments. We'll be looking for evidence of the chlorinateds in the soils that we bring out. We'll be doing coring. We'll be monitoring all of those with field instruments to tell us if we have any hits of the chlorinateds. The injections that we're going to do in this area, based on the evaluation of the hydraulic conductivity -- kind of how water moves through, how easy does it move through the soil -- and the pilot study, the pilot study was performed right in this area, and then another one was up here. So when we did the work up here, we were able to monitor a lot of different parameters. One is how fast did those parent products go to daughter products down to daughter products? How fast did the injectate leave the well that we injected it in? Did it show up in another well nearby? How far away was the last well that it showed up in? So we have an idea of how far this stuff moves when we do the injections.

For example, with the ZVI, we'll start at the bottom, and as we inject we'll pull the casing up about five feet at a time so that when we inject this stuff we know it's going to the bottom of the zone that we're targeting. And as we move up slowly we know that that material is going laterally instead of it going down in the hole and either piling up on the top or on the bottom. So the other thing is if you look at the distribution of the dots on the handout, the distances between those locations is, at least in part, based on the pilot study. So we used the distances where we did see, essentially, overlap between the different wells that we injected in during the pilot study, so we knew that that was going to give us a distance where, when we inject in these new borings, the cheese whey or the substrate was going to essentially be overlapping.

CO-CHAIR HAYES: All right.

MR. FARLEY: So that gives us both the horizontal and the vertical.

MS. TYGIELSKI: Have you done a study of what happens after the iron filings and the cheese whey work and the bacteria works on those hexavalent products and the -- I mean, you're going to get iron chloride salts; correct?

MR. FARLEY: No. No.

MS. TYGIELSKI: What are you going to get?

MR. COFFEY: Rust.

(LAUGHTER.)

MR. FARLEY: Good one. The iron filings will just remain there. The zero-valent iron won't go anywhere. And so what we'll end up with is a bacteria, we'll have a bacteria count that goes way

up, while the total organic carbon is high enough. And I think the minimum is something on the order of 20 milligrams per liter.

MS. TYGIELSKI: So it makes this -- these chlorinated ethene products lose their --

MR. COFFEY: Chlorine.

MS. TYGIELSKI: -- chlorine?

MR. FARLEY: Yeah, I mean you'd get --

MR. COFFEY: It's strictly electrons, they're moving electrons.

MR. FARLEY: You'd get some reactions, but you don't have anything that's toxic.

MS. TYGIELSKI: I'm just wondering where does the chlorine go?

MR. FARLEY: It's not going to sit around --

MS. TYGIELSKI: I mean, does it just bond to each other --

MR. FARLEY: No

MS. TYGIELSKI: -- and go bubbling out --

MR. FARLEY: No.

MS. TYGIELSKI: -- as chlorine gas or what?

MR. FARLEY: There will be lots of geochemical reactions that are occurring, but nothing that will present a health hazard like the ones we have from the chlorinated ethenes.

MS. TYGIELSKI: Okay.

MR. FARLEY: And the other thing is that the ZVI and the in situ bioremediation, they're not going to affect -- they're not intended to do anything with the hexavalent chromium, so --

MS. TYGIELSKI: It just works on the daughter product?

MR. FARLEY: Well, the hexavalent chromium is something entirely different, and so the hexavalent chromium is its own -- its own constituent, and --

MS. TYGIELSKI: But it degrades before it gets to these?

MR. FARLEY: Yes. Right.

MS. TYGIELSKI: So these are working on --

MR. FARLEY: Something else.

MS. TYGIELSKI: -- like vinyl chlorides and di?

MR. RASMUSSEN: The ethenes.

MS. TYGIELSKI: The dichloroethenes.

MR. FARLEY: Right.

MS. TYGIELSKI: So, okay. But you won't end up with iron salts in the --

MR. FARLEY: Well, we'll end up with lots -- I mean the chlorines will come off and combine with lots of different constituents. I mean, I haven't sat down and thought about what the

thermodynamic driver is, but the chlorine will bond to other things once it comes off of the ethenes.

MS. TYGIELSKI: Well I'm just wondering if the reactions aren't going to end up with causing --

MR. COFFEY: Something else.

MS. TYGIELSKI: -- a bigger mess in that soil than you have to begin with.

MR. FARLEY: No.

MS. TYGIELSKI: No?

MR. FARLEY: The big concern is getting through the total dechlorination of the ethenes, that's -- if we get through there, then we're good.

MS. TYGIELSKI: Okay.

MR. COFFEY: Trust.

MR. FARLEY: So again, here's a cross-section. I think we talked about that. Groundwater flowing to the right. Here's the tiebacks that I mentioned a little while ago. These are the tiebacks. And when we put in this permeable reactive barrier, obviously the trench will go all the way through this. These things are very sensitive, be very careful about trenching around these things. So this was something that we had to really look at very closely. And you can see here this is where the old wharf was, and so we can't go any farther to the east, and so that's why we're putting it here, and then that's what's driving doing the substrate injections on the east side of the wall.

MR. COFFEY: That was going to be my question is how you are going to get around the deadman or the tieback?

MR. FARLEY: We have to be very careful, and we have to work almost, I mean almost with a hammer --

MR. COFFEY: Yeah. Is that tieback situated sitting on the old wooden pilings? I mean is it built on top of the old pilings?

MR. FARLEY: Yes.

MR. COFFEY: And how old are those pilings? Nineteen --

MR. FARLEY: I don't know. I don't know.

MR. COFFEY: It's old. I mean also you're going into groundwater too, you're trenching into groundwater?

MR. FARLEY: Yes.

MR. COFFEY: And so how do you trench into groundwater without having the wall collapse?

MR. FARLEY: Oh, it's a slurry that you put in, you could use.

MR. COFFEY: You pour it in while you're trenching?

MR. COFFEY: Keeps it open. We're not going to put in a 30 foot deep trench and then fill it, no, we'll fill it as we go, and that will help keep it open.

So here's the schedule. The FS/RAP was approved on November 2nd roughly. The Remedial Design Work Plan that we're working on now, we're hoping to have that finalized in December. Then remedy implementation, we're hoping to get right on it in December. It will go through March of 2011. And that time period between December and March we'll be installing the permeable reactive barrier, the injection borings, the monitoring wells, all of those steps doing the first round of injections, all of those things, we hope to complete them by March. Once we have the remedy in place, even though we haven't achieved cleanup levels, if the system is working, we're looking for the agencies to grant us a finding that the remedy is in place and effective. That may not be the exact words. But for the agencies to tell us, yes, the remedy is working. Then, starting in about March of next year, February or March, we'll begin some groundwater monitoring.

There are two pieces to the groundwater monitoring. One is the monitoring that we're going to do related to these injections that we're going to do. So we'll do an injection event, and then thirty days later, and then sixty days after that we'll do some groundwater monitoring to do things like where's the total organic carbon content? What's the bacteria populations? Those kinds of things. You know, Myrna, I forgot about something also. One of the things that we're also going to do is we're going to inject a dye in with the substrate that we're going to be injecting, and that dye will help us determine where the substrate is going. So I forgot to mention that.

MR. COFFEY: Interesting.

MR. FARLEY: And then we'll record the land use covenant when that is done. So that is the schedule. I think we answered some questions, but I'm happy to take anymore.

MR. COFFEY: Hey, Steve. I think next time instead of using cheese whey you might want to use sourdough starter, might get something new.

MR. FARLEY: My favorite is actually camembert.

(LAUGHTER.)

MR. FARLEY: Paula, did you have another question?

MS. TYGIELSKI: It's just something I wanted to bring up again. I know when I was teaching chemistry, for every chemical reaction there were reactants, and then the narrow and the products. And you seem to know all about the reactants --

MR. COFFEY: For a geologist.

MS. TYGIELSKI: -- but the products are a big question.

MR. COFFEY: The by-products you mean, not the end products?

MR. FARLEY: Well, you --

MS. TYGIELSKI: No, you've got the iron filings, you've got the bacteria, you've got the chloroethenes.

MR. FARLEY: One of the things you have to keep in mind is that the concentrations of these things in parts per million is relatively low.

MS. TYGIELSKI: Yeah.

MR. FARLEY: It's way, way, way below saltwater.

MR. COFFEY: No pun intended.

MR. FARLEY: Orders of magnitude below saltwater.

MS. TYGIELSKI: Okay. It's just like, you know, well, you don't really know what you're ending up after the ZVI and the bacteria work.

MR. FARLEY: Well, we know that the chlorines aren't --

MS. TYGIELSKI: You get ethene, hopefully at the very end you get just ethene?

MR. FARLEY: Yes.

MS. TYGIELSKI: But what's happening to the chlorines as they're getting stripped off?

MR. FARLEY: They'll be absorbed or they'll create other minerals, but the concentrations of the chlorine, it's actually chloride, is so low that it will make hardly any difference at all. I mean, we're talking about concentrations of the chlorides on the order of twenty or thirty parts per million.

MS. TYGIELSKI: Okay.

MR. FARLEY: So those concentrations are relatively low.

MS. TYGIELSKI: Okay.

MR. FARLEY: Okay. But good questions.

MS. TYGIELSKI: The old dilution is the solution to pollution.

MR. FARLEY: Well, in this case it's bugs that are the solution.

CO-CHAIR LEAR: Thanks, Steve. Okay. I think we are now at our first public comment period. Any comments? Any public?

(No response.)

CO-CHAIR LEAR: All right. Ten minute break.

(Thereupon there was a brief recess.)

IV. ADMINISTRATIVE BUSINESS (Myrna Hayes and Janet Lear)

CO-CHAIR LEAR: All right, folks, let's get this show on the road. Okay. So now we're into administrative business. And I'd just like to remind everyone if you have any comments on the minutes from the last meeting, get those to Myrna or myself so we can finalize those minutes. Myrna, did you have any administrative business?

CO-CHAIR HAYES: Nope.

V. FOCUS GROUP REPORTS

CO-CHAIR LEAR: All right. So focus group reports. And Steve Farley with Lennar for the Lennar update has requested to go first.

a) Lennar Update (Steve Farley)

MR. FARLEY: See how bored you can all get of me, or tired, I guess. So we have the eleven by seventeen. Let's start with the photographs. These all deal one way or another with the Crane Test Area. And for those who have driven down Azuar lately, I think you'll all see --

CO-CHAIR HAYES: Quite impressive.

MR. FARLEY: Yeah, quite a nice current, you've seen -- have you guys driven by and --

MR. BUCHWALD: Somebody's blocked it again.

MR. QUIGLEY: It's blocked off again today.

MR. FARLEY: That's somebody else, we're all done down there. But I wanted to include a couple of photos of some of the things that we're at the tail end. The one in the upper right we're putting down a geotextile over a portion of Dump Road before we laid down the final cap material. In the upper left, just an example of the asphalt that we laid down. And you'll notice that the tracks, we worked around the tracks, we made sure that the tracks stayed. Yeah, there were a lot of reasons why that had to happen. The lower left one is an example of the drill rig that we used to do some soil gas sampling. So we would drive probes in and then collect soil gas samples. So just an example of the little track mounted rig that we use to get out on top of the cap.

MR. COFFEY: Looks like the chariot from Lost in Space.

MR. FARLEY: Should have had them paint a little smile onto the front of it.

MR. COFFEY: Jupiter five.

MR. FARLEY: And then if you look in the main body -- if you look in sort of the middle of it, the IA-C3 Triangle Area, we're all done with that. We're working on what's called the implementation report, that's the document that summarizes everything that we've done. And even more closely to being finished, if you look at IA-B.2-1 and IA-B.2-2, they're up by the Crane Test Area, those two areas we have implementation reports that we're very close to getting through the system. And once that happens, then those two sites will be much farther down the road to getting certification, yeah. The IR-15 area shown there on the south side of that is what's called the FOPL or fuel oil pipeline. 493/ 971, that's another area we've recently completed some fieldwork on, and we've been working with the agencies to determine what the next steps are.

A couple of USTs. UST 231 is another site that we're working at getting ready to wrap up a report for that site. And then a number of activities up in sort of the northeast corner. I think we reported on 461 at the last meeting or maybe the meeting before, finishing up the excavation of the battery acid precipitate up there. We finished up a groundwater monitoring plan. I think we've actually submitted the request for no further action for the IR-07/20 groundwater. And if you look down at the bottom, some of the documents that are in review, probably the most interesting thing for the RAB is that there's an upcoming public comment period for the IA-C2 Remedial Action Plan or RAP. So those are the big highlights. There's been no change, by the way, no change in the number of sites closed. Actually, I take that back. There -- Neal had -- Neal, didn't you have two?

MR. SILER: Yeah, PCB sites.

MR. FARLEY: I don't think that it got updated properly. I think it should have been 492 or 493. So there are a couple of extra PCB sites that have been closed. So anybody have any questions? Seeing none, see you in January.

b) Community (Wendell Quigley)

CO-CHAIR LEAR: Community report, Wendell.

MR. QUIGLEY: I have nothing to report at this time.

c) Technical Report (Paula Tygielski)

CO-CHAIR LEAR: Technical report, Paula.

MS. TYGIELSKI: Nothing, nothing to report.

d) City Report (Gil Hollingsworth)

CO-CHAIR LEAR: City report.

MR. HOLLINGSWORTH: Nothing to report.

MR. COFFEY: Why did Steve have to go first when there's nothing before him anyway?

MR. FARLEY: You never know.

e) Weston Update (Dwight Gemar)

CO-CHAIR LEAR: Weston update. Bye, Steve.

MR. COFFEY: Love you like a brother.

MR. JESPERSEN: We also have a handout that I hope everybody's picked up. First off, there's a listing of the document status, I won't go through all that. But we did have an update on the two significant elements of work that we were out in November. And first is IR Site 05. We did do the final grading and distribution of the pickleweed cuttings to create five and a half acres of muted tidal wetlands in IR-05, and removed contaminated soil from approximately two acres of wetlands in those areas. See the two photos there showing the tidal channel that we graded into the wetland area, and just kind of an overall aerial view of the southern hills from the site. And then finally an update on the Western Early Transfer Parcel, San Pablo Bay Walking Trail, that we have installed benches, and the trail is now open for use during daylight hours. There's still some minor site activities being completed in the area, but the tasks we're working on should not interfere with access to the trailhead and the trail itself. And following completion of the trail, that's pretty much the final action required under the remedial action plan under the Western Early Transfer Parcel. And Weston will be seeking certification from the Department of Toxic Substances Control to document that the requirements of the RAP have been met.

CO-CHAIR HAYES: Cool.

MR. JESPERSEN: Which will be a significant milestone here. If anybody has any questions, I'll be happy to answer them.

MS. TYGIELSKI: Are you and Dwight still going to have jobs?

MR. GEMAR: I will be panhandling out here on the corner. You know, will remediate for food.

(LAUGHTER.)

MR. GEMAR: We've worked ourselves out of a job on most of it, but we do have some things for the Navy still out at the vicinity and miscellaneous things.

MR. QUIGLEY: I asked you this question before, and you told me that they were going to be redirecting the water that flows in the back of my house. Has that changed? I'm hoping they'll leave it.

MR. SILER: I have no idea.

CO-CHAIR HAYES: Could I ask you, I can't see in this photo on the upper right where this tidal channel is.

MR. JESPERSEN: Dwight, you want to take that one?

MR. GEMAR: Sorry, I was having a sidebar.

MR. JESPERSEN: Where is this photo, the aerial view there?

MR. GEMAR: It's --

MR. COFFEY: Well, that's going around to the --

MR. GEMAR: Right about there.

CO-CHAIR HAYES: Oh, right, so it's not in this photo.

MR. GEMAR: No, this is -- the photo was taken kind of with twelve behind him, and right on our little perimeter road. So we have a lot of -- and this channel was there to begin with, and so we just opened it back up again and we just let it spread out, it made very little shallow areas for it to distribute. So this is actually probably taken as the tide was coming back out. When the tide gets -- the tide needs to be above 6.0 to flood this whole area. So if it's less than 6.0 it just fills all the inland channels.

CO-CHAIR HAYES: Is it going to flood this whole area?

MR. GEMAR: Yeah, the five and a half acres is that whole southeast on the corner.

CO-CHAIR HAYES: Oh, okay. Then what's going to happen to this area behind that?

MR. GEMAR: This is uplands that was just hydroseeded with native grasses.

CO-CHAIR HAYES: Oh, doesn't it get wet in the wintertime, seasonal wetlands?

MR. COFFEY: Most everything around here gets wet in the wintertime.

CO-CHAIR HAYES: Seems like I looked out there in the rain and it looks pretty wet, that -- what you call upland area there.

MR. GEMAR: I think it will be much better this season.

CO-CHAIR HAYES: Well, that's not bad, I wasn't saying it was bad, it will be different is what you're saying.

MR. GEMAR: I think it will stay more upland-ish, and these are obviously definitely wetlands along the strait.

CO-CHAIR HAYES: Okay. Well, work well done on the Western Early Transfer Parcel.

MR. GEMAR: Thank you.

f) Regulatory Agency Update (Janet Naito, Elizabeth Wells, Carolyn D'Almeida)

CO-CHAIR LEAR: Okay. Regulatory update, Janet.

MS. NAITO: First I wanted to apologize for being late. I had to wait until I got off jury duty before I could leave San Francisco to get stuck in traffic. I forgot how much fun rush hour traffic is. I am on jury duty. I've been on jury duty all week so I don't have a whole lot to report other

than I was going to tell everybody I got on a three month jury, but unfortunately it's not true. My jury should hopefully wrap up by tomorrow, so I'll be back in the office on Monday.

CO-CHAIR LEAR: Darn.

MS. TYGIELSKI: Hopefully.

CO-CHAIR LEAR: Elizabeth.

MS. WELLS: Okay. All right. I brought my annual formal presentation, and because there were so many acronyms, I'm not giving it.

(LAUGHTER.)

MR. COFFEY: So there.

MS. WELLS: No, actually I left the flash drive at home, so I'm going back to before there were computers -- which I can barely remember, I'm so young -- and use visual aids.

So the boring stuff, which may not be boring to everybody, is the Mare Island/Navy, and Mare Island/Lennar stuff. Basically we're report review, report review, report review is what I've been doing. And I did go on a site visit. I got to go to the Historic Independence Wharf -- I think that's where I went. There's a big hole in the ground. It was real exciting, I love excavations.

MR. COFFEY: Have you been to Napa lately? There's holes in the ground there.

MS. WELLS: And I was also going to tell you that I have gotten some help in-house. Actually my acting division chief has asked one of the geologists who works in the landfills unit to help me, so she basically, every time a report comes in and I don't have time I get to hand it to her, so she's helping. And then we have a student intern who pretty much works full -- well, she doesn't work full-time, but all the time she works is helping me with Mare Island stuff. So that's, I guess, good news. All right.

What I really wanted to talk today about was the regional monitoring program. And I brought something for everybody which is called "The Pulse of the Estuary." And the regional monitoring program, basically the point of it is to monitor contamination in San Francisco Bay. And it's a collaborative effort between the San Francisco Water Board and the San Francisco Estuary Institute. And the results are published every year in this document. And I'm going to talk a little bit about that. This is my advertisement for things that we do other than just hazardous waste cleanups.

So let's see. The regional monitoring program results are actually presented on page 44. So this is inside the document. They present them every year, they look at different chemicals. And of particular interest could be page 52 which shows PCB data. And what they do is they plot the PCB data -- I actually have a slide of this on my flash drive at home. But they plot the PCB data by concentration, and you can go and you can find where Mare Island is, and you can look at the concentration based on this color chart, and then the plot that's shown here with the dots is average concentration, so they look at the trends, the averages in the whole bay. And there are other chemicals as well. You can look at this on-line so you can actually get a bigger picture of what it looks like. But Mare Island is surrounded by red sediments which would be concentrations of, it looks like, between eight and ten parts per million I think is what that says -- or parts per billion, parts per billion. So, whew, thank goodness.

MR. COFFEY: We're all going to die.

MS. WELLS: And then every year The Pulse takes on one topic of interest and kind of goes with that theme. So last year I talked about sediment and sediment objectives and some restoration stuff. This year the theme was, and it says right here on the bottom, "Linking the Watersheds and the Bay." So it was looking at how water from each of the watersheds in the Bay area comes in and affects the Bay and the estuary itself. And so it talks about stormwater management. Stormwater is a huge source of sediment and chemicals to the Bay. And what -- that is called loading. So you've got chemical loading or sediment loading that goes into the Bay. They talk about strategies to look at loading from small tributaries, and I'll go in that a little bit more. And then it also highlights what's called SWAMP, that's an acronym for the Surface Water Ambient Monitoring Program. And I'll talk about that in just a sec.

So stormwater runoff management, our regional board just a year ago adopted a regional permit, and it was a big deal because we combined six permits into one permit. And what it does is it's for stormwater management. It governs pump station monitoring, industrial facility inspections, low impact development, it looks at control of illicit discharges, and then it has information and guidelines for public outreach and public information. And it limits pollutants such as pesticides, mercury, polychlorinated biphenyls, copper, and trash. And trash is a huge problem in the watersheds, in the creeks, in the streams, the rivers, and going into the Bay. And then it also provides monitoring requirements for creeks. And the other thing that is discussed in here are management options for stormwater management. And they talk a little bit about mercury and PCBs and ways to manage your stormwater. And one of the big deals is that when you've got big rainstorms, the wastewater treatment plants will get a lot of stormwater, and then they can't handle all of the water treatment, and then you end up having these discharges because they just have to flow through all of the sanitary waste into the Bay. So the stormwater management, the permit is discussed, there's an article about it on page eight in this document.

And then small tributary loading strategies is looked at because the Estuary Institute figures that it's kind of a focal point for reducing contaminant loads. If you can clean up or deal with how to monitor and how to manage your small tributaries like creeks and streams, you can reduce some of your contaminant loads. Basically there's not a lot of knowledge at this point about how much stuff is coming down those creeks, so they've put together a strategy to try and evaluate that. And I think they got a grant for about a million dollars to do some work for the next four years. So I would imagine in four or five years that will be something that will be published in this document. And that's discussed on page thirty.

The surface water ambient monitoring program. That's also discussed in an article in here. It's on page 68. And it's statewide. It's a statewide program, it's not just our region. So they started in 2000, and then for the next five years the program has monitored the condition of 37 Bay Area streams. And the thing that's really interesting is that the data is available to the public. And the place to get that data is a website called "mywaterquality." So if you go to page 79 in our document -- like a teacher. If you go to page 79 there's a whole thing that says "mywaterquality" website. And it's pretty cool, I actually went and checked it out. So you can look at data, you can see what the surface water monitoring program has come up with. And one of the things is this document is published every single year.

And the San Francisco Estuary Institute holds a meeting every October called the Regional Monitoring Program Update meeting. And I think anybody can go. I don't remember what the cost is to go to the meeting. But they bring in people to talk about the topics of interest. And so a lot of the articles in here were presentations that were given on this as well. And then copies of

this and previous years are available at the San Francisco Estuary website which is SFEI.org. And that's on page 95 of your document. So you know, each year I'm happy to bring the little update just to show you that the Water Board, we care about water. Does anybody have any questions?

MR. COFFEY: I would hope so.

MS. WELLS: I care deeply. Just ask Janet, I care deeply. Does anybody have any questions? I know I zipped through that pretty quickly.

CO-CHAIR HAYES: Well, you said that trash was a major, major problem.

MS. WELLS: Major, major problem.

CO-CHAIR HAYES: But on page four it says the outlook is bright for solving the trash problem in the Bay and its creeks. Might we learn what's bright about it?

MS. WELLS: I think if you read the article --

MR. COFFEY: Not now, later.

MS. WELLS: -- I think the reason that it's bright is that it's been recognized as a problem and that regulations are starting to go into place on how to manage trash. And with a combination of municipalities looking at how to reduce their trash and how to prevent discharges -- or preventing plastic, people banning plastic bags, that kind of thing.

MS. TYGIELSKI: Coastal cleanups every year.

MS. WELLS: Coastal cleanups every year. How many of you participated in a coastal cleanup?

MS. TYGIELSKI: Not this year.

MS. WELLS: Nice. So any other questions?

(No response.)

MS. WELLS: Great. Thank you. I'm sorry I didn't have the electronic version.

MR. QUIGLEY: Well, I'm disappointed.

CO-CHAIR LEAR: Thanks, Elizabeth.

CO-CHAIR HAYES: You did great.

CO-CHAIR LEAR: That was awesome.

CO-CHAIR HAYES: Didn't need no stinking electronics.

MS. WELLS: If anybody wants more copies of this just let me know, I can get more hard copies.

VI. CO-CHAIR REPORTS

CO-CHAIR LEAR: And now for the co-chairs report. You want me to go? So the Navy, in the last month we did some fieldwork at IR-17 Building 503 Area. We collected soil groundwater and soil gas samples in the upland and the wetland areas at that site. We installed six additional groundwater wells near the area where we completed the non-time critical removal action recently. Those wells as well as four existing wells will be sampled three more times, and then

the results of that monitoring as well as the samples collected in the wetland will be presented in reports.

Also in the last month we've continued the work at the Production Manufacturing Area on the decontamination of the buildings where munitions were manufactured in the past. We have a total of eight buildings that are a part of that project for those work completed in June. And that work was started up again in November for the final four buildings. The decontamination includes buildings themselves, the piping, drain lines, heating, ventilating, and air conditioning systems. The ongoing work requires dismantling of portions of those buildings because a lot of the residue is in things like piping and items and HVAC systems, our heating, ventilation, and air conditioning systems. And so that's required to get to the materials. Unfortunately, one of those buildings, A-216, in order to get the materials, the chemical residue out of that structure we're going to have to -- we are demolishing that structure. Unfortunately that was the only way to safely get the munitions residue out. The project is expected to continue through February, and then all those buildings will be certified as free of munitions.

Also in the last month we completed all of the fieldwork at the Defense Reutilization and Marketing Office with the exception of some underground electrical duct bank work. I believe all of that is completed except for a small portion located on the east side of Azuar. And that will be done this month, hopefully, as long as we don't get too much rain. And then the overhead power poles will be removed after that is all installed and tested and approved.

Last month we had the RAB tour on November 6th. RAB members along with the Navy and folks from Lennar Mare Island and Weston went to seven different sites, and the RAB members got to talk to the people responsible for some of the ongoing remediation work, and get an up-close look. So we appreciate everybody coming out, and thanks to everybody that helped, Weston and Lennar. In addition, let's see. The Navy submitted seven documents during the reporting period. DTSC provided comments or concurrence on four documents. And the Water Board provided comments on one document.

CO-CHAIR HAYES: Concurrence?

CO-CHAIR LEAR: I'm sorry, concurrence. And it says here we had a BCT meeting today, but we did not because we cannot have our BCT meeting without our DTSC representative who is in jury duty. So we'll reschedule that for a later date. And I wanted to say welcome to Miguel because this is his first RAB meeting officially as a RAB member.

MR. BUCHWALD: I thought it was the second one.

CO-CHAIR LEAR: Is it the second one?

MS. NAITO: He was at the last one.

CO-CHAIR HAYES: But we signed him up.

MR. COFFEY: You're no longer a virgin, so let's put it that way.

MR. BUCHWALD: Strike that.

CO-CHAIR LEAR: So we won't have another RAB meeting until January 27th, and I want to wish everybody happy holidays, but I need to turn this over to Myrna so she can do her update.

CO-CHAIR HAYES: Just a couple of things. One, that the Flyway Festival is scheduled for the second weekend in February this year, trying to get away from Super Bowl Sunday and see what

that does for people. So it will be February 11 through 13. And particularly tell the Navy so that you can get your plane tickets, huh? And then I just have a flyer here for the upcoming programs for the month of December for the Shoreline Heritage Preserve. That's it.

CO-CHAIR LEAR: Thanks, everybody. Happy holidays.

(Thereupon the foregoing was concluded at 9:12 p.m.)

LIST OF HANDOUTS:

- Presentation Handout – Polychlorinated Biphenyl (PCB) Program Update
- Presentation Handout – Figure 3 PCB Sites
- Presentation Handout – Upcoming Remedial Action Work at Installation Restoration Program Site 15 (IR15) – Investigation Area C1
- Presentation Handout – Figure 9-6 Conceptual Layout of Alternative 6- IR15 Feasibility Study/ Remedial Action Plan
- Presentation Handout – Features within the Eastern Early Transfer Parcel (EETP) – CH2M Hill/ Lennar Mare Island
- Presentation Handout – Mare Island RAB Update December 2, 2010 – Weston Solutions
- Navy Monthly Progress Report Former Mare Island Naval Shipyard December 2, 2010