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ANDERSEN AFB GUAM

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 2009-014

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8	Restoration Advisory Board Meeting
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14	April 30, 2009, 6:30 P.M.
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Proposed Plan Public Meeting/Restoration Advisory Board (RAB) Meeting 30 April 2009

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MR. IKEHARA: Welcome, everyone, to the Andersen Air Force Base Restoration Advisory Board meeting. And this will also be in conjunction with a public meeting for the presentation of the proposed plan for three sites in the MARBO Annex. So we have a lot to cover tonight. So in the interest of time, we'll get through the introductory remarks.

First of all, restaurant -- restrooms are located in the lobby, on the other side of the lobby, just in case anyone needs to use them.

I want to welcome everyone. We have John Jocson, a committee co-chair here, as well as Colonel Damian McCarthy, first RAB attendance, but he will be the installation co-chair this evening. He will shortly be leaving us, so this will probably be his first and last RAB.

I just wanted to basically put some introductory things together here.

We have been requested by several RAB members to move RAB meetings from Thursdays to Wednesdays. And I just wanted to kind of get the consensus of those that are present, if that would be okay with them. It's more in the interest of scheduling of -- of other meetings, as well as teaching events for -- for John.

So if -- if no one is in opposition to that,
we -- we will arrange that for the next meeting. Okay?

Tonight, we have a court reporter present. So i

people are making remarks after each presenter is completed with their presentation, please state your name and speak clearly. And use the microphone, please, because she will be putting a lot of these to words, as required for the part of the responsiveness summary that will -- will follow the proposed plan phase of this -- of this evening.

I'd like to ask people to also, please, ask questions after each presentation so that the presenter can get through the presentation without too many interruptions.

MR. JOCSON: Oh, Gregg, before we begin, I'd like to say:

If you see me exiting the --just excuse me; I have an 8 o'clock class that I have to attend to, so I'll be leaving a little bit --

MR. IKEHARA: John has the pleasure of giving his students finals tonight, so I'm sure there's a lot of scared people out there.

I guess our attendance tonight is pretty limited, based on competing interests with other folks. I believe the congresswoman has a meeting tonight and I know this is the week of the big industry forum, so a lot of folks are probably wrapped around that. So I do thank the folks that did -- did show up for this meeting.

We actually have six people. We have just enough people to actually take a look at -- at meeting minutes.

These -- this meeting that we have is actually a -- was also a public meeting, so it was done by a court reporter and has been certified. So if you can, quickly glance through the notes, and then we'll proceed to -- to the formal presentation.

As always, we have our list of acronyms. In an environmental world, we are laden with acronyms, and we try to capture as many of them as possible beforehand so that there's no questions.

(Whereupon the board reviewed meeting minutes.)

MR. JOCSON: I'd like to make a motion for approval of minutes.

MR. IKEHARA: Okay. Any second on the approval of the minutes?

MR. KASBERBAUER: I'll second the motion.

MR. IKEHARA: Okay. Thank you very much. The minutes have been approved from the previous meeting.

Before we get going on the presentation, I just wanted to make a quick comment. As I had mentioned in previous RAB meetings, we are now into the joint region time frame. We've initiated the -- the official stand-up of the joint region, and by September 30th, we will be part of the joint region Marianas.

And it may or may not affect our RAB meetings. I think -- I think our programs are pretty distinct enough where

we probably need to keep them separate, but that will be a
piece of decision that will have to be made at the joint
region level. I can see these RAB meetings being extensively
long if they become merged with the Navy's cleanup actions, as
well. So something to consider.

Regardless, by -- by September 30th, we civilians
on Andersen will become Navy employees. We will still be

Regardless, by -- by September 30th, we civilian on Andersen will become Navy employees. We will still be supporting the Air Force mission of operating the air field and keeping planes aloft.

So anyway, as that happens, as we get closer to that point, I'll keep you more apprised of how that changes or if it has any affect on what we're doing from a community relation standpoint.

MR. KASBERBAUER: Gregg, before you go on, could you maybe just introduce us again? I don't think we met since last August, and I'm not sure we know each other.

MR. IKEHARA: Okay. We could -- at least for the members, we could walk through.

Mike, you want to start off?

MR. GAWEL: Yes. I'm Mike Gawel.

 $$\operatorname{MR}.$$ IKEHARA: We probably need to use the microphone.

MR. GAWEL: Good evening. I'm Mike Gawel, a long-term RAB member.

MR. KASBERBAUER: You represent anybody?

I'm Colonel Damian McCarthy. 1 MR. MCCARTHY: the vice-commander of the 36th Wing. 2 3 MR. JOCSON: John Jocson, longtime member. MS. DENTON: Carmen Sian-Denton, also longtime 4 member. 5 MS. JONES: Lucrina Jones with DZSP. 6 7 MR. KASBERBAUER: I'm Larry Kasberbauer, and I 8 represent the public in this for about three years. 9 MR. IKEHARA: Okay. So tonight, I'd like to 10 introduce -- we're going to have -- we're going to have a 11 couple speakers. Danny Agar, will be presenting as well as 12 Joe Vinch. Joe is a new addition to our restoration team. 13 14 He came in from off of Nebraska, but he was previously 15 stationed here about three years ago? Four years ago? MR. VINCH: 2000, 2002. 16 17 MR. IKEHARA: 2002? Okay. And he joined us in 18 December, and we welcome him. We need -- we need the extra 19 hands and -- and voices in our group. And Joe brings a lot to 20 the table as a -- as a former bioenvironmental engineer for 21 Andersen. He's very familiar with the base, and now he's a civilian. As a civilian, he can -- he can do more to help our 22 23 cause. So tonight, we're going to be going through some 24

of the programs and the status of work that we're doing.

will include work that has been done out at the site that we call Dump Site or Landfill 19, which is right along the Cliffside.

We'll also be going through some of the particulars on the Urunao cleanup, which is -- which is actually nearing completion at this point. So we'll have a little presentation on that, as well as some -- some groundwater data that we haven't presented you in the last couple RABs.

So finally, the proposed plan will be presented at the end of the -- end of the evening, and that would -- that will pretty much wrap things up. So without any further delay, I will ask Danny to come up and start the presentations.

MR. AGAR: Thank you, Gregg.

I'd like to start out with the status of our 78 sites. We have a pie chart up there. It -- it hasn't changed much since the last time that we had met for our RAB. And in August, we have 29 sites that are status pending, but that's about to come to a close. A lot of those sites now are going through ROD -- ROD reviews, ROD documents.

So when that's done, those sites that are under institutional control fall out into site completed, and the remaining ones will be the ones we will be scheduling for cleanup. So we're getting there.

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For FY10 projects, we have cleanup projects. We don't have any study projects for FY10. And these are the sites that we have projected for cleanup.

The next presentation will be a little bit more interesting. It's at Site 14. It's Dump Site 19, actually, where we had concerns with PCB in -- at the site, and we were concerned about the fish being affected by the chemical.

So anyway, Dump Site 19 is located at the east side of the main base. And the site is about 13 acres, and it's divided into two areas. The one above the cliff line is about 5 acres, and the one below is about 8.35 acres. And the site was a site of dump that was filled with debris from construction and automobile parts, metals at the site. And also, the site is located along the Pati Point Marine Preserve. So there are no fishing in that area.

This is the additional delineation that we did at the cliff line at Dump Site 19. We took service and subsurface samples of the site. They're both located, co-located. And 16 samples were taken. And out of 16 samples for the surface sample, we had four hits, but below screening level. And for the subsurface sample, we have seven hits, but still below screening level. So -- which is good news.

MR. KASBERBAUER: Can you clarify what a hit is, and the screening level?

MR. AGAR: A screening level is when we have

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to -- when the -- when the levels is at screening level and above, it becomes a problem, because we have to do risk assessments. It becomes a risk to -- to humans and wildlife. Because it's below that, and there's -- there's no need to do any risk at that site, because it's below the screening level that EPA has set.

MR. KASBERBAUER: So a hit would be something you found?

MR. AGAR: And the results would either be above the screening level or below.

All right. Here's a view from -- from the ocean looking up to the cliff line. And where you see the -- this wedge-shaped prism is where we took the samples, and the dump site is above here. And this is -- this used to be a -- an old discharge for sewer at the plant, which is no longer used, and also a dump site.

Here's a closer look at the cliff side where the samples were taken, and here is another view from the top of the cliff, looking down into the shoreline.

Okay. What activities we did at the shoreline area, we needed to get samples, fish samples and marine biota samples, and we also needed to get some sediment samples. We took, also, sea water samples at the site. This slide shows the location of the sea water samples that we took. Here's the dump site and the sea water samples are here. Three

water -- three water samples were taken here, and the results were non-detect. No PCB in the water -- sea water. Also, because of the terrain of the area and the high energy activities of the ocean at that site, we weren't able to collect sediment samples.

This is the location of the marine invertebrate samples that we have taken along the shorelines. Again, the results of the samples taken was that we didn't find any PCB with the marine invertebrate. The marine invertebrate that we took were sea cucumbers, snail, limpet, chitons, and barnacles at the site.

For our fish sample, we -- we built eight grids -- grid lines. And the grid lines are about 625 feet across this way, and at land is about 625 feet for each grid. And if you notice, these are the exact -- or these dots indicate the location of the fish that was taken for sampling. And the darker dots are indication that we did find PCB in them, okay, in the fish.

MR. JOCSON: Do you know what species?

MR. AGAR: Yeah. So here's the summary of what we found for the analytical. We took 40 samples and analyzed it with Method 8082, which are seven types of PCB. And we also took and -- out of the 40 samples, these are whole fish and fillet fish. So we took 24 whole fish samples and I'd say 16 -- yeah, 16 fillet fish, and analyzed it for PCB under

Method 8082.

Out of those 40 samples, we had 10 detection of PCB by this method. And what we did is we took those same samples and run it through Method 1668, which is -- actually analyzed for the PCB congeners, the 209 congeners for the particular type of PCB that we're looking at. And we matched it against or compared it against the screening level for subsistence fishers, which is 2.45 micrograms per kilogram, and the recreational fishers screening value, which is 20 micrograms per kilogram.

And here is the bar chart that shows the type six fish that were caught and the results of the fish. One here was fillet, and this sample here, basically, for the Method 8082, we have five that were -- that were above the subsistence fisher screening level, which is the 2.45 micrograms per kilogram. So this green listogram color are from Method 8082. The darker color are from results from Method 1668A.

And as you notice here, we have a fingertail grouper which is above the recreational fisher screening level of 20 micrograms per kilogram. And here, you can see that the -- the fingertail was caught in group D -- in grid D. I don't think you can go back to that one. Let' see.

Grid D is right here.

MS. DENTON: That was whole fish, though.

MR. AGAR: Right here. And that's where they found the highest level of the congener PCB.

And then the others, these are different -- are caught in these different grids. That is the ringtail wrasse

caught in these different grids. That is the ringtail wrasse and goatfish. But all in all, the values are way below the recreational fishers screening level.

Now, the report is at the agency review right now. So that's -- it's not final, so it's not available to the public to review, but -- so the evaluation for risk will be reviewed by the regulators.

So -- and here is a photo of the fish that was caught. This one here is a strawberry grouper at grid G. And here is the ringtail wrasse at grid F. Pretty good size.

And the pink-tail triggerfish in grid E, and the black-tip grouper in grid E.

So the feasibility study just came out, and it's at the agency draft for their review. And we expect the final feasibility study report to be completed in August 2009.

Okay. Any questions?

MR. KASBERBAUER: That's located on the east side of Andersen Air Force Base?

MR. AGAR: Yes, that's correct.

MR. KASBERBAUER: Below Tarague, you said?

MR. AGAR: No, it's at the Pati Point Marine Preserve. That's part of the marine preserve, where no

1 fishermen are allowed. But it's away from Taraque. It's on 2 the east side. I think Tarague is up north. MR. JOCSON: Can you point it out? 3 It's located right here on the east 4 MR. AGAR: side of Andersen Air Force Base. I think Tarague is up here. 5 6 MR. KASBERBAUER: Did you check for what you call 7 sea grapes? MR. AGAR: Sea? 8 MR. GAWEL: Caulerpa, the algae. 9 10 MR. AGAR: The algae? No. There was no algae 11 samples taken. 12 MR. GAWEL: Caulerpa. MR. KASBERBAUER: It's not algae. 13 MR. JOCSON: Caulerpa. Any control fish samples 14 outside of the --15 That's what we were hoping for. 16 MR. AGAR: 17 actually, if you look at the grid lines that we indicated, 18 we -- we didn't really -- we were kind of surprised that -well, actually, they're very low compared to what I've seen 19 that -- what we've --they're actually analyzed at Cocos, where 20 the values were all the way up through, like, 4,700 part --21 micrograms per kilogram. 22 23 In this case, they were right below 2.4 or 7. almost seems like it's background level, but it -- you can't 24 25 really say. And we decided --we wanted them to go out further this way and back and -- and further downstream from the site,

but we seem to have hits of PCB but on lower level. But we

don't know -- we don't -- we don't have any background level

for PCB, and we didn't do any background level. I mean, we

thought that we would have if we have find any here, but it

turned out that we did.

MR. JOCSON: On the -- the fish -- the fish

MR. JOCSON: On the -- the fish -- the fish species that you guys picked up were -- were a good sample, because they're localized. Those are the guys that stay in the region.

MR. AGAR: Right.

MR. JOCSON: So if you could indicate, or I was wondering if you had something outside of the -- let's say zone of influence that you could compare it to.

MR. AGAR: No, we didn't -- we didn't take -- we strictly went to territorial fish. We had -- we worked with Fish and Wildlife to select the species that we wanted to find that's down there. So we didn't have any other species that we tested for.

Okay. Anything else? All right. Nothing.

And we'll go to the next presentation, which is
Urunao.

MR. VINCH: Okay. We're going to go over the Urunao sites now, as many of you probably are familiar with this site. It's located on the northwest side of the island,

near Falcona Beach.

Site history: Northwest Field was constructed in 1944. This photo shows it in 1945. It was used for an over-the-cliff side dump area, where they had dropped off aircraft, auto tires, sheet metal, engine parts, general household trash, concrete slabs, and some incendiary bombs.

The photo on the upper right is the current view.

That's a -- in March, we took that photo. And you can see

Dump Site 1 and Dump Site 2.

It's been a great project. It came with a big price tag, just over \$20 million to clean up this area.

What I'm going to go through now is a photo overview of Dump Site 1. This is going to show you the different phases that this site went through. So Dump Site 1 was a total of 16.5 acres to be cleaned up.

As you can see, this is the way we went about cleaning up the site. And then we'll move into the revegetation of the site. That's an aerial view. And that's the way the site looks today.

So some of the debris was about 7 to 8 feet deep at mid-slope on Dump Site 1. And on -- that was at mid-slope, and at the top and bottom, about 3 to 4 feet deep.

One of the challenges was how steep the slope was and how to get that material off the slope. So what was used was a skyline yarder system. It's used in the logging

industry, but it works really well here. And we were able to bring up the debris up to the top side of the cliff without having used that access road down towards Ritidian Point.

And you can see how they removed the waste. They had construction -- constructed some tiers going up the slope. They would remove the debris. They would load it in that yarder bin, and that yarder bin would have a little pony motor that would bring it up to the top of the slope and be dumped out.

Once the material got to the top of the slope, it was screened by a mechanical power screener.

So once it was screened, munitions were removed in from the waste. And as you can see in the upper right, those are M50 bomblets. They were incendiary bombs. Their purpose was to start fires, and they were -- had a thermite core and magnesium body. And what happened is, when they were dropped from an aircraft, they would ignite and they would burn at about 2500 degrees Fahrenheit for about ten minutes. It was very hard to extinguish. And the truck below shows some of the weights that were taken to the recycling center. That was just the nose cone weight, to give it some weight coming out of the aircraft.

So when those M-50s were screened out at top of slope, they were put back in the bin, transferred down the slope via the yarder to the base of the slope and into a

storage magazine.

And here are some of the types of munitions that were removed from Dump Site 1: M50 bomblets, some target ID bombs, a Japanese type 99 -- that's called a Kiska -- grenade, and some fuzes.

Here's some more of the munitions. A good-sized 1,000-pound bomb was found, and a US grenade, as well.

The bomblets were destroyed down at the base of the site. They were allowed to do 150 bomblets per burn. And as these were ignited, the burn would be initiated, and it dissipated in approximately 30 minutes. And you were left with a residual ash.

We had to do some low level radioactive screening, as well. Some radium dials were found. They're a low hazard; it's an alpha-emitting isotope. It's low-hazard, but we -- since we found them, we had to scan all of the scrap metal.

And here we are, spreading out the scrap. And one of the major reasons is -- one is to catch a radioactive isotope, you know. We don't want that going to a recycler. But as the Air Force, if we send this off to a recycling company, say, or off to China, it will go through a portal gate and it will go off, and that load would have to be returned to the island. So all the scrap is spread out and screened.

Some of the ways we restored the site, we put gates and berms up on the front to -- we really just wanted to discourage any dumping in the area after we were completed. We put a riprap cliff top barrier on the top, to -- so vehicles wouldn't drive off the cliff side, if they did get inside. And we revegetated with native plants. And that's ongoing right now. So the plants are being planted on the tiers, on the top side, and we are watering them. MR. JOCSON: Are you still burning? MR. VINCH: Huh? MR. JOCSON: Are you still burning? MR. VINCH: No, all burns are complete. So we're really at the last phase of this project. Is that --MR. KASBERBAUER: You said you're watering the plants? MR. VINCH: We are watering the plants, yes. MR. KASBERBAUER: Where do you get the water? MR. VINCH: Water trucks. We bring it in and spray. One problem we're having is deer and pig, so we're keeping up with them, replacing some plants. And that's the current site condition. growing in really well. Oh, and non-hazardous material is brought back onto base and placed inside our consolidation unit.

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And now to Dump Site 2. Another photo overview,
not as exciting. Dump Site 2 had a lot more tires on this
area.

MR. KASBERBAUER: How large is this?

MR. VINCH: Dump Site 2 is 6.2 acres.

Dump Site 2 cleanup started in October '08 and was completed in January '09.

MR. KASBERBAUER: Is it the north one of the two:

Is it north of --

MR. VINCH: Yes. Here is some of the debris found at Dump Site 2, and here we are removing the waste from Dump Site 2. Same technique: Putting it inside the yarder, transporting it to the top of the slope, screen.

The tires were a bit of a challenge, but we also used the yarder for that. Hooked them into a cable and bring them up to the top of the cliff.

The tires were brought up to the top and shredded for recycling. And all of the vegetation that was removed stayed onsite. We were able to shred it and use it -- and mulch it for the plants that we put on the cliff side. And this is the current site condition of Dump Site 2. Also growing in very well.

The lower access road. This is not Route 3A, but the lower access route where -- for the land owners. This was -- this latest was done in 25th February '09. So all the

potholes were filled in, it was smoothed out, slightly crowned for water drainage, and this is the last time this will be repaired. And all of the equipment is off the site.

We had one modification to this project: In between Dump Sites 1 and 2, we wanted to make sure that there was no leftover munitions. So a team of explosive personnel went through these 59 grids and hiked this area and -- to clear it for any munitions or unexploded ordnance.

And here are some of the accomplishments. You can see the amount of soil and debris that was removed. And of course, the -- the big item is over the M-50s, those incendiary bomblets. Just over 62,000 were removed from the site. And the radium dials and personnel markers are there, as well, 63 and 39.

So the final stages of Urunao, well, we have -we're going through right now with the Video Isotope

Committee. We have to do a final site survey of the area to
make sure that no radioactive instruments were left over.

We think that should go really well, because the majority of the soil was removed and now it's down to bare limestone.

Are there any questions on Urunao?

MR. KASBERBAUER: When you did the -- when you did the walk through, the 59 grids?

MR. VINCH: Yes?

1 MR. KASBERBAUER: I assume you went north of Site 2? 2 3 MR. VINCH: Well, the reason --4 MR. KASBERBAUER: Site 2 is kind of right on the 5 border of one family and the next family, as I recall. 6 MR. VINCH: Okay. No. The only areas that 7 were -- that needed to be cleared were these near Dump Site 1. 8 The EOD expert said that whenever those items were put in and anything would explode, there was some kickout. And that was 9 10 the area that we needed to focus on. 11 MR. IKEHARA: Again, we didn't find ordnance in Dump Site 2. 12 MR. VINCH: Oh, yeah; I'm sorry. I should have 13 mentioned that. 14 Just Dump Site 1. 15 MR. GAWEL: On the revegetation of the sites, what were you actually putting in? Do you know what --16 17 MR. VINCH: Yes, I do. MR. GAWEL: Were there a lot of shrubs or --18 MR. VINCH: One second. 19 MR. GAWEL: -- do you have a list of the species? 20 MR. VINCH: I do. I was hoping someone would 21 22 ask. Pandanus; screw pine; some Dyer's fig, which is a 23 ficus; sea hibiscus; strangler fig; lipstick tree; half 24 25 flower/fan flower; Indian mulberry, and a type of fern; I

think the local name is galak.

MR. GAWEL: Thank you.

MR. VINCH: It's been a challenge. It seemed to go well when there was more personnel on the site and plants looked fantastic. As more and more people started to pull out, the deer and pigs started coming in. So that's really been a challenge.

MR. GAWEL: Do you know, was there, like, a private external nursery that provided these, or did they grow these things at Andersen just for this project?

MR. VINCH: Yes. For the nursery --

MR. IKEHARA: We actually had the prime contractor go ahead and subcontract out to a local nursery. They collected seeds around some of the cliff top areas that are native species and grew them to juvenile height before we inserted them into the hole. So that way, we tried to do the best we can to make them succeed. If we started at a small size, they would have been food for the deer and the pig. And so we wanted to select the species that had the best chance, and also species that were suggested by the University of Guam, as well as the Department of Agriculture folks. So we worked closely with them to make sure that we weren't putting in invasive species, but native species.

MR. GAWEL: Thank you.

MR. KASBERBAUER: Was there any ifil wood up in

1 there? 2 MR. VINCH: Was there any ifil removed? I don't 3 know. Was there? 4 MR. IKEHARA: (Nodded head.) 5 MR. KASBERBAUER: Where did it go? 6 MR. IKEHARA: It is in the possession of Tony M. 7 Artero, since it was on his property. MR. KASBERBAUER: Down below? 8 9 MR. IKEHARA: Yes. Big chunk, big -- big log. 10 MR. KASBERBAUER: The Indian mulberry, is it a mulberry tree that's going to have mulberries, or what is it? 11 12 MR. GAWEL: It's the noni(phonetic). I think --I've learned that -- it's kind of a bigger scale of --13 14 MR. KASBERBAUER: The noni? 15 MR. GAWEL: Yeah. I forgot the Chamorro name. 16 MR. KASBERBAUER: The deer like that. MR. VINCH: Yes, they do. 17 Are there any other questions? Thank you. 18 19 MR. IKEHARA: Okay. I'm going to briefly go 20 through some of the groundwater results that we've -- we have collected since our last meeting. 21 22 Spring 2009, a groundwater sampling round was our 23 last -- our last round. I mean -- I'm sorry; that's the round 24 that we're currently in. The fall of 2008 are the results 25 that we currently have. They're currently doing groundwater

sampling right now, so we'll have more of that to present to you in the next meeting.

We also had an attempt to try and replace one of our obstructed wells down by -- down by MARBO, a critical well that connected the location of the former MARBO laundry facility with IRP31, which we always talk about, because it's had the highest concentration of chlorinated substances.

As previously reported to RAB members, tetrachloroethylene and trichloroethylene are the -the contaminants that we've been tracking for this, and we've been finding them occurring at depth within the freshwater lens, not in the shallow portions. So it's still protective of the drinking water source. It occurs right near the saltwater interface, where no pumping should occur.

These are all the wells and sites that we have on the main base and Northwest Field, just for your awareness.

And these are the locations of the monitoring points at MARBO.

MARBO is a lot more critical because of its proximity to a lot of the drinking water supplies for the Air Force, as well as the Government of Guam.

So just to kind of talk through some of the trends here, one thing that had always been elusive to us is the variability we see in IRP-31, the deep monitoring well.

We always had the idea that the dynamics at the bottom of the freshwater lens are much, much slower than the dynamics at the

top of the freshwater lens, and we're always trying to figure out why the concentrations varied as much as they did. And we believe we have made a correlation on this with some of the other physical trends that we're seeing within the freshwater lens.

So here we have the concentration of TCE, or trichloroethylene, and the variation of tetrachloroethylene for IRP-29, which is right at the MARBO laundry. Again, the same sort of cyclic kind of variations.

The correlation that we put together was based on collecting at the same time a chloride concentrations, which are indicative of where you are within the freshwater lens.

So as the chloride would decrease, we would see a synonymous increase in the concentrations of these chlorinated. So it suggested to us that what we were seeing really was -- from a fixed sampling point, we were seeing variation in the concentrations of the chlorinated compounds, based on the thickness of the lens swelling and thinning dependant upon the rainfall.

We had always suspected that perhaps we had another source and that we were seeing falses from another source, but that wasn't the case. The concentrations are pretty -- pretty stable at certain depths within the freshwater lens, and they vary according to where that sampling point is within the transition zone.

Similarly, with IRP-29, we find that the chlorides also vary significantly inversely with the TCE concentrations that are in the deep well there.

So just keep in mind that these are the deep wells that we're looking at. We're not seeing really significant concentrations in the shallow wells at these locations. It's really a depth within the freshwater lens.

So as we -- as we proceed, we'll -- we'll figure out exactly the dynamic of this. We were working closely with the late Victor Wuerch on this, and he was -- he was really starting to -- to correlate a lot of our findings with his findings. And I think collectively, we were -- we were really reaching towards a common solution to the dynamics of this freshwater lens. Unfortunately, Victor is no longer with us, and we will proceed with this research.

So in summary, basically what we're seeing is over time, the swelling and the shrinking of the thickness of the freshwater lens results in significant variation of TCE at depth. This picture is sort of a -- just a depiction of how the bottom of the lens is reacting to rainfall events. When it's rainy, obviously, the freshwater lens will swell. When we have a dry period, the lens will shrink. And that variability also accounts for a lot of the variation in the chlorinateds that we see.

It seemed like a pretty simple concept when we

finally figured it out, but initially, it presented a lot of challenges for -- for that, until we understood, really, the dynamic of -- of how a lens transition zone changes over time.

Any questions about the groundwater?

Okay. If there are no further questions, we'll move to the final presentation of this -- this evening.

MR. KASBERBAUER: Gregg, before we do that, can we go back to Urunao?

You had previously -- for the first presentation, on the east side of the island, talked about testing the water and fish. I didn't hear anything about that on the Urunao side, and I was down there on Sunday and I see the water running out. I was going to drink it, but -- was there any testing of the water and the fish on the west side, on the Urunao side?

MR. IKEHARA: We didn't do marine testing because we did groundwater sampling in that area at seeps, as well as monitoring point. There was more towards the north, by the Ritidian site. But we did --

MR. KASBERBAUER: That wasn't near as big.

MR. IKEHARA: Excuse me?

MR. KASBERBAUER: That wasn't near as big up there as --

MR. IKEHARA: No, it wasn't, but we did -- we did do several seep sampling during the remedial investigation

portion of the study for Urunao, and we didn't find any contaminants that exceeded the maximum contaminant levels at that time.

So it didn't -- it didn't push us into doing any further sampling out into the marine part of the island, at least that part of the island. So there's no indication --

MR. KASBERBAUER: How about the freshwater that's coming out of the cliff before it even hits the ocean?

MR. IKEHARA: That's -- the only way that we can sample that was to sample the seeps, which are representative of a groundwater seepage along that cliff area.

So from all indications, if there were any contaminants entrained in the groundwater, we didn't find them. And the seeps along there are fairly plentiful along that area, as you probably know, since you -- you lived in that area.

But no, it didn't -- it didn't push us into the same scenario as Dump Site 19, where we had to -- we had almost a direct tongue of soil going into the seashore.

MR. KASBERBAUER: Thank you.

MR. GAWEL: If we go back to Danny's presentation, before we proceed on the 19 site:

On the fish sampling, as John Jocson indicated, there really wasn't a gradient shown. You had some PCBs where the sampling occurred across the whole stretch, and so it

can't really indicate a point of concentration along the shore, whereas -- getting into the ecosystem there.

Do you think there's a possibility of extending sampling beyond that and see if it could be just the background levels that aren't really associated with that particular dump site? Or how can we really prove that that's the source of that PCB that's in the fish tissue?

MR. IKEHARA: One of the -- one of the difficult things that we had at this site - and I had mentioned this before - was that we had to select the appropriate timing to even collect the samples that we did because of the high energy in the coast. So maybe a follow-on would be to do a collective background study around the island to determine if PCB concentrations are on the order of what we found.

I think that the concentrations that we are seeing indicate that -- that it could be background levels, but we have to do it pretty much from an island-wide basis to really capture a background. If we had taken samples just outside of the study area, not knowing the condition of the currents at the time, it might still not have been truly indicative of a background concentration.

So it has to be a much larger area, just -- just like when you do background concentrations on soils on Guam, we have to collect a number of samples statistically throughout a larger area, rather than just outside the

footprint of the site. So there may be further work to be done in conjunction with some of the findings that are found at Orote Point, as well as down at Cocos Island.

But just the orders of magnitude are so significantly different that it suggests that the -- the way or the pathway that the contaminant got into the materials is significantly different from what we saw on the west side of the island. Part of it may have to do with also the fact that it's a lower energy environment on the west side and that fish tend to be a little even more territorial in a setting like that.

So yes, there could be -- island-wide, there could be more work done to try and isolate and identify what the background concentrations are.

MR. GAWEL: And related to this, if you don't do this extended sampling to compare other areas but just go with what the results are here, will there be a certain period a few years down the line when cleanup is completed, allowing, you know, the environment to say the PCB is to be not entering the environment more and sample the fish again? Is this in the plan?

MR. IKEHARA: Well, one thing that I think Danny talked about - and I think it's important to note - that we didn't really find exceedences above screening levels along the tongue of soil that went down into the water. That leads

us to believe that whatever PCB was -- had reached the marine environment is either gone, no longer there -- it might have been there once upon a time, but we have no way to know that -- and what we're seeing is perhaps just a residual background of that concentration.

I suspect, though, that when we look at this from a ballistic standpoint, we will have to do a further background study; maybe not the Air Force, but collectively from both Navy and Air Force, because part of their challenge, as well, would be to identify what background is on the western side of the island, as well.

So collectively, a lot of this data could be used to really try and nail down background concentrations for PCB. It's a very difficult thing to pinpoint and correlate with the location, because it's so mobile in tissue and it bio accumulates over time. So...

Any other questions?

MR. GAWEL: I'm sorry. Maybe just to clarify things, too:

Based on the results you got on the fish samples, where at least the one grouper was high even above the recreational level, is this indicating a need of a, say, warning to consumption?

MR. IKEHARA: We could warn people to not fish in the fishing preserve --

MR. GAWEL: You're saying -- well, they do sometimes, don't they? But it seems like the site is beyond south of the end of the Pati Preserve. Is it --

MR. IKEHARA: It's within the preserve. We had to get a special permit from the Department of Agriculture, ir order to --

MS. DENTON: You're not even allowed to fish there.

MR. IKEHARA: No one is allowed to fish there, and subsistence fishing is almost impossible, which would be, you know, someone living on the site, eating fish from that site every day. No, we -- only in special circumstances can fish even be collected within the preserve. So it presents a little bit of a challenge to go forward with a warning.

MR. GAWEL: I know. I would think you might need to have an advisory even with these assumptions that no one is going to be fishing there. But if the fish are contaminated, shouldn't there be a warning about that?

I've seen lights out there at night.

MR. IKEHARA: So part -- part of what we will be developing as part of this RI/FS process is to do a risk evaluation and determine what the potential is for illegal fishermen. I mean, that if that would be the receptor in this case, illegal fishing could result in PCB uptake.

So in a sense, there's an engineering or

institutional control that keeps people from fishing in the area. Not to say that it doesn't happen, but that sort of a warning in and of itself not to be fishing in that area.

In the future, that could change. Suppose the preserves are no longer upheld, as I think some of the local -- local Chamorro Nation folks are trying to get that changed. But that -- that's not upon us, and that -- the fact that it's preserved, we feel that right now, we have -- we are -- we've reduced risk. And we'll continue to reduce risk as we do a cleanup at the site and try and keep the soil from going further over the slope.

So from all indications, we're going to end up doing a cleanup at the top of the site to keep any other soils from entering into the marine environment. So...

Okay. We'll move on to the last portion of tonight's briefing. It's the presentation of the proposed plan for three sites at the MARBO Annex. We've got some pictures here that Danny will be talking through that show MARBO back in the '50s and MARBO as it is today.

So Danny?

MR. AGAR: The display here that's black and white was taken back in 1956, and this one was in 2002.

MR. KASBENBERGER: Is it anywhere near Marine Corps Drive?

MR. IKEHARA: Yes, right here. It's on the

Marine Corps Drive.

MR. AGAR: I'd like to start off with the presentation on the process that we're dealing with and where we're at this at this point in time. It's a lengthy process for some of the site that goes all the way to cleanup. And this particular case, the three sites are at a point where we need to do some cleanup.

And the proposed plan that we're doing today is to keep you informed and to solicit public comments and able to address some of your comments into the record of decisions. So we welcome any input that you have in our decision-making process and the opportunity to comment on the proposals as we proceed on with the alternatives with each site.

Okay. These are the legal bases for the proposed plan. There is a 30-day public comment period. In this case, the proposed plan are now into the repositories on 14 April, and the end date for the public comment will be 14 May, 2009. Verbal comments will be accepted at this meeting, and written comments can be sent to Mr. Gregg Ikehara, postmarked no later than 14 May 2009.

All right. The three sites are located in MARBO Annex area. And Site 41 here, it's a central portion of the north of MARBO. And Site 42 is north of MARBO, east. And Site 43 is right in the center of MARBO Annex, located next to the former MARBO laundry.

Okay. Starting with Site 41, Site 41 was an operational support buildings. It is about 80 acres in area, and it was a support shop for activities down at MARBO. It had two shops - carpentry shops, generator shops - and the place is overgrown, as you can see in this poster here.

This is a 1956 zoom view of Site 41, which is right here at this poster here, as you can see the various buildings and the locations. For Site 41, we did find lead in surface soil samples. And these are the locations of this lead that were risk to future residents and industrial workers, but were not risk to wildlife. So these are the locations of the lead that were in the soil. There were no subsurface samples that had constituents that were a risk to future residents, industrial workers, or wildlife.

Of 33 alternatives that were screened, we looked at four in detail. And the four are no further action, institutional control, soil removal industrial use, and soil removal unrestricted land use.

The Air Force had selected soil removal for preferred remedial alternatives where the area can be -- the site can be used unrestrictedly.

Okay. For -- the next site is Site 42. It's also an operational building. It's about an acre and a half. It's located right over here -- I don't know if you can see the arrow -- right down the area. It used to be an area for

the gas station. And again, the area is unmaintained, and it's overgrown in vegetation. And here is a zoom view of the area. It's not very clear, but it's a small -- small site.

At the site during our investigation, we found lead present in surface soil sample which is a risk to future residents but not a risk to industrial workers or wildlife.

And these are the locations of the plant samples. Also at the site, we had -- we found total petroleum hydrocarbon, diesel range. And a risk evaluation was done, and we found that it's no risk to future residents, industrial workers, and wildlife. However, the values that were found were above cleanup value for Guam EPA. So when we do remediate the site, we will be cleaning out the TPH.

Also at the site, we removed a 3,000-gallon underground storage tank. And this tank was in good condition. It had some contents in it, but they were non-hazardous, so it was taken out of the site. In the subsurface sample, we found lead right where the tank was removed. However, we did an evaluation for risk, and there—we found no risk to future residents, industrial workers, or wildlife, since the lead itself is below ground greater than 13 feet. So it's buried.

The alternatives that we evaluated are 3 alternatives out of 33 that were screened. And what we looked at was no further action, which has no cost; institutional

control; soil removal. And we had selected soil removal for Site 42.

Okay. The next site is Site 43. Now, this site is -- is fairly large. It's 35 acres in size. It's the site right across MARBO laundry area, right around here. And so during our investigation, we had to divide the area into four parts: Areas A, which is this area here, Area B, Area C, and Area D. And this is how the site looked like back in 1956. This area here is the MARBO laundry.

During the investigation, we found in surface soil sampling several constituents, two organic and three metals, that were a risk to future residents but not to industrial workers or wildlife. And in Area A, we found -- Area A, we found basically just lead at the site. Area B, we found arsenic and PCB and cadmium and lead. So Area B has a lot more constituents. And Area C, we found arsenic and lead at the site. And in Area D, which is the last site, we found benzo(a) pyrene and lead.

In Area B, for subsurface soil sampling, we found two metals, which was arsenic and vanadium. We found it to be a risk to future residents, but not to industrial workers and wildlife. And this is the location of the samples that we found.

Also in Area B, we fond two underground storage tanks, and they are at the 3,000-gallon capacity. One tank

was -- had contents in them that was found to be non-hazardous; the other one was found to have some hazardous constituents in it, but were removed and taken out of the site.

So the TPH that we found is about 10 to 15 feet below ground surface. We're planning to leave that in place, since it really has no risk to future residents, industrial worker, or wildlife. And since it's below 15 feet, we're not planning to remove that.

Again, 33 alternatives were screened, and we looked at three in detail: No further action, which has no cost; institutional, control and soil removal. And the Air Force has selected soil removal for unrestricted land use.

So that's the end of the -- that -- that is our proposal for the three sites. And if there's any questions?

MR. KASBERBAUER: Me first or you?

Question: You keep making reference to risk for future residents, no risk to wildlife, and some basic risk or no risk to industrial workers. Can you explain that a little bit further? As far as I understand, it's risk to people but not to worker people?

MR. AGAR: Yes. The EPA has set up a screening level for these sites, and they base them in three different categories.

They have the residential, which includes adults

and children, and they have certain levels that they -- that we -- that we bench ourself to find out whether it's above that level or below it. So if the residential level for lead is 400 micrograms per kilogram, and any analysis or soil that we found above that is considered risk to residential.

And the risk level for industrial workers is 800 micrograms per kilogram. And if we find soil to contain less than 800 milligrams per kilogram, then we conclude that it's not a risk to industrial workers.

So that's -- that's how this risk evaluation, in general, takes place. It's a lot more complicated than that. They have calculations that they do. They took -- take the average of every soil that they -- that they detect and do some calculations in there to determine the actual risk involved. And I think the -- I believe it goes in detail in the proposed plan that we have right in front of you.

MR. KASBERBAUER: It must be based on some assumptions as to the extent of the contact; living -- I mean, how long in the area --

MR. AGAR: Yes. They look at --

MR. KASBERBAUER: -- in the soil or --

MR. AGAR: That's correct. They look at the -what do you call it -- exposure route. They look at
ingestion, they look at skin contact, and they look at
inhalation. Yes, those are all factored into the risk

assessment. MR. KASBERBAUER: So when we're all finished with this, is it going to be safe for wildlife, industrial, and residential? MR. AGAR: That's correct. MR. KASBERBAUER: Or is it still going to be a danger to our grandchildren? MR. AGAR: No, when we remove the contaminants and reduce it to a point where it's no longer a risk to anyone or wildlife. That's correct. MR. KASBERBAUER: So where does the contaminated soil go? MR. AGAR: Non-hazardous waste would go into our consolidation unit, and hazardous wastes are shipped off-island. MR. KASBENBERGER: Won't there be tons and tons of that? MR. AGAR: Well, we -- we actually had the volume that we wanted to remove. When we -- for Site 43, we'll be removing 892 loose cubic yards contaminated soil. That's the estimate that we have that we'll be removing. MR. KASBERBAUER: How many cubic yards in a truckload? It's about 15, 10 to 15 cubic yard per MR. AGAR: truck load. And site --

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MR. KASBENBERGER: That would be sent off-island somewhere?

MR. AGAR: No. What we normally try to do is we try to render them non-hazardous. They still contain the chemical, but they're -- they're considered non-hazardous. we consolidate them in our consolidation unit inside the base, where we can manage the waste.

Anything that's immediate -- immediate danger to people, which is considered a hazardous waste, that's shipped off-island. So to minimize cost, we try to stabilize the soil with the chemicals that are hazardous. In this case, lead, we can stabilize with phosphate or some other chemicals so that they become non-hazardous.

MR. GAWEL: As you plan to remove the soil, will it be put in to -- you say the consolidated area; is that -is that the existing approved landfill?

MR. AGAR: That's correct. It's not a landfill -- we don't really look at it as a landfill, but it's an area where we consolidate all the wastes that we have from all our different IFP sites.

> MR. GAWEL: And there's enough capacity to --MR. AGAR: Yes, we do. In fact, some of the

waste that came out of Urunao went into our consolidation There is still a lot of room there. units.

All right. That concludes my presentation on the

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proposed plan. Thank you.

MR. IKEHARA: I want to add something to that.

We did take the most conservative solution to these three sites because of the fact that the MARBO Annex is so accessible to people. It's used nightly by people that exercise and joggers and dog-walkers and you name it. So we didn't want to leave anything on site here, so we took the most conservative approach, and we would relocate this material to a place that is controlled; it's fenced; it is well-monitored; and it's compatible with some of the wastes that have already been deposited at the consolidation unit.

So it's a critical -- critical piece for people to understand. It's really managing waste in one location versus 15 different locations throughout the island. So I think the consolidation unit is really the best alternative that we could do, short of shipping it off-island at high taxpayer cost and controlling and really keeping it sequestered in one area. So that's -- that's essentially what the solution to the sites are.

So if anyone does have comments in regard to these sites, please submit them by the 14th. If not, verbal comments will be taken tonight and we will try to incorporate those and -- or get responses to you, but certainly, will be incorporated into the responses and summary of the record of decision for these sites.

MR. KASBERBAUER: Maybe it's not a part of this 1 2 discussion; maybe it should be entered into it. 3 Does this mean that the building of a school 4 there is out of the picture from now on? MR. IKEHARA: I believe that decision was made at 5 a higher level than we, but I -- the latest intel I have on 6 7 that is that the school will not be built there. There's a good possibility that since it was not used for its intended 8 purpose, that that land will revert back to the DOD. 9 intended purpose of the -- of the 80 acres was to build the 10 northern high school. And that -- that has been located 11 12 elsewhere now. MR. KASBERBAUER: Oh, really? 13 MR. IKEHARA: Right. What GovGuam did instead 14 was to put in production wells, which was not part of the 15 intended purpose. 16 17 MR. KASBERBAUER: I know that that was on the 18 perimeter. It was within the 80 acres. 19 MR. IKEHARA: 20 MR. KASBERBAUER: I thought those wells were to feed the school. 21 22 MR. IKEHARA: No. MR. KASBERBAUER: Yeah. 23 (Laughter) 24 MR. IKEHARA: Nice try. I mean, schools need wells. 25 MR. KASBERBAUER:

MR. IKEHARA: Yes, but subsequently --

MR. KASBERBAUER: -- the wells were done ahead of time; the schools were delayed.

MR. IKEHARA: Other locations were selected because of population densities and other decisions that the planning folks put together. And I don't -- I don't know the exact details of it, but it appears that the northern school will not be built in that area. It's sort of outside our lane, but just...

Any other questions or comments? I appreciate you folks coming in tonight and -- and offering your opinions and questions. And they will be annotated.

Again, there's more time. If you think of anything else in regard to or presented solution to these three sites, please, by all means, submit them to us and we will incorporate them.

Our next scheduled Restoration Advisory Board meeting would be in the -- in the middle of summer, towards the end of July.

I believe the discussions with our contractors, we will be having another public meeting shortly for other sites that we're trying to take to the record of decision.

This -- as Danny mentioned earlier, this is really our last year to do studies, to really get to RODs for all the sites that we have. Any cleanup -- any projects that we have after

this year will really be cleanup projects that are driven by decision documents, such as RODs, or other action memos.

But we're really getting into the final phase of really getting rid of a lot of our sites by cleanup, and I think -- I think that's an important milestone for us. We've moved completely out of the study phase, and we're really digging dirt right now.

And I think it's been a long voyage for a lot of us. A lot of folks here that have been with us in the RAB, and I commend you for sticking with us. I appreciate the support -- we appreciate the support, and I believe the base is doing the best we can to clean up past sins. I think it's a program that's -- that's been a value, and we'll continue to pursue that until we're done.

Thank you, everyone.

[Whereupon the meeting was concluded at 8:00 p.m.]

REPORTER'S CERTIFICATE

I, Veronica F. Reilly, Certified Shorthand Reporter, hereby certify that at said time and place, I reported in stenotype all testimony adduced and other oral proceedings had in the foregoing matter; that thereafter my notes were reduced to typewriting under my direction; and the foregoing transcript, pages 1 to 45, both inclusive, constitutes a full, true, and correct record of such testimony adduced and oral proceedings had and of the whole thereof.

Witness my hand at Barrigada, Guam, this 15th day of May 2009.

Veronica F. Reilly, CSR-RPR Certified Shorthand Reporter

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